

URBAN AMERICAN INDIAN AND ALASKA NATIVE YOUTH

AN ANALYSIS OF SELECT NATIONAL DATA SOURCES

MARCH 2008



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I. ACKNOWLEDGMENTS

The UIHI would like to gratefully acknowledge the Public Health – Seattle & King County for their assistance in making this report possible. We would like to send a special thank you to Mike Smyser MPH from the Epidemiology, Planning and Evaluation Unit for all his efforts on this project and to Amy Laurent MSPH for assisting with the revisions.

Other model reports were reviewed in the process of the development of this report. Specifically, we would like to give our appreciation to the researchers, staff and participants of the 1997 Tribal Youth Risk Behavior Survey (YRBS), the Bureau of Indian Affairs, Office of Indian Education Programs' 1997 YRBS of High School Students Attending Bureau Funded Schools, Montana Office of Public Instruction's 2005 Montana YRBS: American Indian Students in Urban Schools, Wisconsin Department of Public Instruction's 2003 Wisconsin YRBS and the Department of Health and Human Services, the Centers for Disease Control and Prevention's 2003 United States YRBS.

II. INTRODUCTION

Created in 2000, the Urban Indian Health Institute (UIHI), a division of the Seattle Indian Health Board, provides centralized nationwide management of health surveillance, research, and policy considerations regarding the health status deficiencies affecting urban American Indians and Alaska Natives (AI/AN). The UIHI works to ensure that the health disparities of urban AI/AN are included in the national dialogue and adequately addressed.

Urban AI/AN, often described as an “invisible” population, account for over half of the entire AI/AN population. Over the past three decades, AI/AN have increasingly relocated from rural and reservation communities to urban centers. National census data shows an increasing trend in both the proportion and number of urban AI/AN, rising to 67% (2,774,716) in 2000. This report identifies disparities in health risk behaviors between urban-dwelling AI/AN and white youth.

Previous UIHI reports documented severe health disparities among urban AI/AN. In fact, vital statistics data show that this population group experiences higher death rates from accidents (38 percent higher), chronic liver disease and cirrhosis (126 percent higher), and diabetes (54 percent higher). Alcohol-related death rates are 178 percent higher than the rates for all races combined. As health disparities have been documented for the overall AI/AN demographic, this report focuses on urban AI/AN youth, a vulnerable sub-section of this population.


This report provides a review of the urban AI/AN youth population and their health risk behaviors from four national data sources. Where available, census and vital statistics data are provided for the U.S. counties served by the 34 non-profit urban Indian health organizations that contract with the federal Indian Health Service. Data from the national Youth Risk Behavior Survey is not available at the county-level; therefore urban youth are examined as a proxy for these urban counties.

Because urban Indians tend to be invisible in many urban areas because of their geographic dispersion, differences in cultural and physical characteristics, and historical treatment, targeted and intentional study is needed to assure that the needs and approaches to addressing those needs are not overlooked. This study adds to a growing body of work we are attempting to produce for our partner agencies, public officials, and urban communities with sizeable urban Indian populations that currently lack any type of health care assistance sensitive to these factors.

I wish to thank Public Health – Seattle & King County (PHSKC) for their collaboration on this report. Working closely with PHSKC, we sought to document the shortcomings of our current understanding of urban AI/AN youth, provide UIHO with information to advocate for increased funding or for designing interventions, and educate the general public on the harsh realities of urban AI/AN health. We believe the glaring disparities identified in the data document significant health problems that are not being adequately addressed by the federal government and others if the goal of reducing health disparities for minority populations by 2010 is to be achieved.

Health is a fundamental characteristic of a society’s commitment to its future. When the health of its children and youth are in jeopardy, we must reflect on our priorities and work to bring these matters to elected officials, policy makers, and the general public, e.g. those with the capacity to make a difference. This report illustrates our failure to protect urban Indian youth and properly prepare them for a

successful future. Let's hope that responsible adults will take heed and provide the leadership and resources needed to assure a healthy tomorrow for urban Indian youth.



Ralph Forquera, Executive Director
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III. EXECUTIVE SUMMARY

Introduction

A majority of the American Indian and Alaska Native (AI/AN) population live in metropolitan areas of the U.S., yet few resources are devoted to the health needs of this urban population. Urban Indian health organizations (UIHO) require information on their target populations to effectively provide services. While national studies which include American Indian youth show racial/ethnic disparities in health risk behaviors, comparable information on the health and related behaviors of the AI/AN youth population living in urban areas is lacking.

In this report, we examine national data sources in order to identify the characteristics of the urban AI/AN youth population and to identify disparities in health risk behaviors that may be in need of greater attention. Results may be used to increase awareness about the needs of this population and to tailor health services in order to meet these needs. Highlighted in this report are disparities in health status and risk behaviors between urban AI/AN and urban white youth.

Methods

Four national data sources were analyzed for this report:

- 1) Mortality or U.S. death certificate data 1999-2001;
- 2) Natality or U.S. birth certificate data 2000-2002;
- 3) 2000 U.S. Census data; and
- 4) Data from the national Youth Risk Behavior Survey (YRBS) for the years 1997- 2003 (Total sample=59, 839).

The focus of the analysis for the first three data sources (Mortality/natality and census data) was counties within UIHO service areas. County-level data is not available in the YRBS therefore “urban” was defined as areas within a Metropolitan Statistical Area. Estimates for urban AI/AN youth are compared to urban white youth. Except where noted, all findings presented are statistically significant differences between groups.

Results

Population/Demographics: There were approximately 232,000 (1% of U.S. population) single race AI/AN youth between the ages of 15 and 19 living in the U.S. in 2000. Within this group, approximately 135,000 (58%) were living in census defined urban areas and 53,000 (23%) were living in counties served by an UIHO. Nationwide and in UIHO areas, AI/AN tend to be younger, with a median age more than ten years lower compared to the white population (U.S. AI/AN = 28.0 years versus U.S. whites=38.6 years; UIHO AI/AN=29.1 versus UIHO whites=38.3 years).

The percent of the AI/AN child population (less than 18 years old) living in households with income below the poverty level, was substantially higher than the percent for whites both nationwide (31.6% and 9.4%, respectively) and in UIHO areas (30.0% and 7.3%, respectively). Additionally, nationwide and in UIHO areas, a higher percentage of AI/AN youth ages 15-19 years were not enrolled in school compared to whites in the same age group.

Leading Causes of Death: In UIHO service areas, the leading cause of death among both AI/AN and white youth ages 15-19 years was unintentional injuries; primarily motor-vehicle related. The second and third leading causes of death were homicide and suicide, respectively. Nationwide, AI/AN have

significantly higher rates of death from unintentional injuries, homicide and suicide (50.1, 17.5, and 9.4 per 100,000, respectively) than the white population (35.5, 8.5, and 5.3, per 100,000, respectively).

Youth Risk Behavior: As shown in Table I, the presence of a number of risk behaviors were at least two-fold higher in AI/AN compared to white youth in urban areas.

Table I: Highest Increased Rates of Risk Behaviors in Urban AI/AN versus White Youth

Behavior	AI/AN	Whites	AI/AN Increase
Ever been forced to have unwanted sex	16.4%	6.6%	>Two-Fold
Physically hurt by a boy/girlfriend*	17.0%	8.0%	
Ever been pregnant or gotten someone pregnant	10.6%	3.6%	
Had sexual intercourse for the first time before age 13	12.4%	4.4%	
Ever used heroin	7.4%	2.6%	
Ever used injected drugs	5.1%	1.9%	
Tried marijuana for the first time before age 13	17.5%	8.7%	
Used marijuana on school property †	15.3%	5.5%	
Used cocaine one or more times †	8.7%	3.6%	
Carried a weapon on school property †	14.4%	6.0%	
Threatened or injured with a weapon on school property*	17.5%	7.4%	
Carried a gun †	12.7%	4.3%	>Three-Fold
Attempted suicide	20.7%	6.8%	
Did not go to school because of feeling unsafe†	12.6%	3.7%	
Medical treatment from a fight*	10.8%	3.1%	Nearly Five-Fold
Medical treatment from a suicide attempt	10.5%	1.9%	

Source: Youth Risk Behavior Survey 1997-2003

AI/AN=American Indian/Alaska Native; *During the past 12 months; †One or more of the past 30 days

Conclusions

Study findings indicate a need for interventions to address health status and risk behaviors among urban AI/AN youth. The high prevalence of risk behaviors in urban AI/AN represents a significant disparity compared to youth in the white population. Urban AI/AN students were significantly more likely than urban white students to engage in behaviors resulting in unintentional injuries and violence, drug use and risky sexual behavior. Higher rates of death, poverty and teen births were also seen in AI/AN compared to white youth. More resources need to be focused on AI/AN health if these gaps in health status and risk are to be reduced or eliminated.

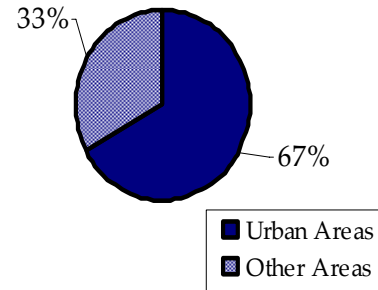
The high prevalence of many of the risk factors examined implies that health promotion and disease prevention activities have the potential to make a significant impact on risk reduction for urban AI/AN youth. Data to continue monitoring trends in risk behavior is crucial in efforts to obtain funding to support intervention programs and other action steps.

IV. BACKGROUND

Urban American Indian/Alaska Native Population

The 2000 U.S. Census showed that of 4.1 million persons reporting AI/AN heritage in combination with other races, 67% (2.8 million) reside in urban areas (Fig.1). Urban AI/AN are a highly diverse and geographically dispersed population. American Indians/Alaska Natives frequently move between rural and urban areas and also relocate from other states¹. Urban AI/AN families also tend to be geographically dispersed, rather than clustered together in the same neighborhoods².

Figure 1 Percentage of U.S. AI/AN Population Living in Urban Areas



Source: 2000 U.S. Census

These factors, along with the relatively small census size of this group, make the collection of accurate health-related data challenging. In addition, racial misclassification of urban AI/AN on vital records is well documented³. This typically results in underestimates of disease and mortality burdens in this population. Despite these errors, a recent study by Castor et al showed that urban AI/AN experience higher death rates from accidents (38% higher), chronic liver disease and cirrhosis (126% higher), and diabetes (54% higher) than the general population living in the same areas⁴. Alcohol-related deaths in general are 178% higher than the rates for the general population⁵. Disparities in socio-economic status likely contribute to these findings. American Indians/Alaska Natives were approximately twice as likely as the general populations of these areas to be poor, to be unemployed, and to not have a college degree⁶.

Urban Indian Health Organizations

The Indian Health Care Improvement Act (PL94-437) of 1976 affirms the responsibility of the federal government for Indian health. Title V of the Act specifically provided language “to establish programs in urban centers to make health services more accessible to urban Indians.” Approximately 160,000 of the AI/AN living in urban areas are served by a network of 34 urban Indian health organizations (UIHO). The UIHO are independent private not-for-profit agencies that provide direct or referral services to AI/AN living in 94 select urban counties in 19 states across the country (See Appendix: Table 1 for a list of UIHO Service Areas examined in this report). Urban Indian health organizations are capable of carrying out the activities described in Title V of the Indian Health Care Improvement Act. However, funding for the urban Indian health program is frequently in jeopardy and UIHO receive approximately 1% of the overall U.S. Indian Health Service (IHS) budget (IHS is responsible for carrying out the Indian Health Care Improvement Act). Even though a majority of AI/AN currently live in urban areas, the focus of Federal policies remains for the most part on reservation communities.

American Indian/Alaska Native Youth

National studies which have included American Indian (AI) youth showed racial/ethnic disparities in health risk behaviors. The National Longitudinal Study of Adolescent Health (*Add Health*) found that white and Asian youth were at lowest risk and AI youth at highest risk for most adverse health outcome indicators⁷. The National American Indian Adolescent Health Survey, a revised version of *Add Health*, examined risk behaviors, health problems, worries and concerns, and resiliency-promoting factors among 13,454 seventh through twelfth grade AI/AN youth from non-urban schools in eight IHS areas⁸. American Indian/Alaska Native adolescents in the study reported high rates of health-compromising behaviors and risk factors related to unintentional injury, substance use, poor self-assessed health status, emotional distress, and suicide.

Comparable information on the health and health behaviors of the AI/AN youth population living in urban areas is lacking and the UIHO require this information to effectively serve their target populations. National data sources and measures are used here to examine AI/AN youth populations living in urban areas and nationwide. Results may be used to increase awareness about the needs of this population and to tailor health services to meet these needs.

V. METHODS

Description of Data Sources

Four national data sources were analyzed for this report as described below.

- 1) Mortality or U.S. death certificate data for the period 1999-2001⁹;
- 2) Natality or U.S. birth certificate data for the period 2000-2002¹⁰;
- 3) 2000 U.S. Census data¹¹; and
- 4) The YRBS is a self-report questionnaire administered by the Centers for Disease Control and Prevention (CDC) designed to monitor the health risk-behaviors of the nation's high school students. In the YRBS, the behaviors that contribute to the leading causes of mortality, morbidity, and social problems among youth are categorized into six risk areas: 1) behaviors that result in unintentional injuries and violence; 2) tobacco use; 3) alcohol and drug use; 4) behaviors that contribute to unintended pregnancy and sexually transmitted diseases; 5) physical inactivity; and 6) dietary behaviors—plus weight status. Other health-related topics such as oral health, sun protection and asthma are also included in some survey years. The six risk areas comprised the framework for evaluating the health behaviors in AI/AN youth who participated in the YRBS. The complete text of the survey is available online at: <http://www.cdc.gov/HealthyYouth/yrbs/index.htm>.

The YRBS includes surveys of students in grades 9-12. The YRBS is a self-administered questionnaire. Student participation in the survey is both voluntary and anonymous. Surveys with select AI/AN populations are also conducted, such as with the Bureau of Indian Affairs and the Navajo Nation, but these did not include urban AI/AN youth.

National surveys have been conducted biennially since 1991. They employ a three-stage cluster sample design to produce a nationally representative sample of public and private high school students. Over-sampling methodology was not utilized for AI/AN students. Therefore data was aggregated and averaged for four years (1997, 1999, 2001, and 2003) in order to assure a large enough sample size for this study. The complete sampling methodology used for the YRBS is described elsewhere¹².

Healthy People 2010

The national YRBS is the primary source of data used to measure fifteen of the Healthy People 2010 objectives and three leading health indicators. Healthy People 2010 is a comprehensive, nationwide health promotion and disease prevention agenda that is used as a guiding instrument for addressing current and emerging health issues, reversing unfavorable trends, and expanding past achievements in health¹³. The Healthy People 2010 objectives are targets to be achieved by the year 2010 and are presented in this report as a basis for evaluation of the reported health risk-behaviors of urban AI/AN youth for 14 of the 15 objectives (See Appendix: Table 4).

Analysis of Vital Statistics and Census Data

Population size, age distribution, school enrollment, poverty, leading causes of death and teen birth rates are examined in UIHO areas and nationwide using census, mortality and natality data. Estimates for AI/AN youth are compared to white youth to highlight disparities that may exist. Mortality and natality data are presented as 3-year averages (1999-2001 and 2000-2002, respectively). These multi-year averages improve the stability of the estimates and protect individual confidentiality. Mortality and natality data are not presented when the number of events (i.e. births, deaths) is less than ten.

VistaPH software, created by Public Health—Seattle & King County, was used to analyze vital statistics and census data¹⁴.

Calculation of Rates

Mortality and natality population statistics are calculated using bridged population estimates based on the 2000 U.S. Census which has been adjusted to reflect the 1990 racial census groupings (see Race Classification section)¹⁵. School enrollment estimates provided in this report are calculated using 2000 Census data¹⁶.

Analysis of YRBS Data

Measures: A total of ninety-nine behavioral measures were examined for this study. These measures were based on the 2003 YRBS dataset. Data from previous years (1997, 1999, and 2001) were modified to conform to the 2003 measures.

Metropolitan Status: While YRBS data from prior years are available, 1997 was the first year of data which included urban geography. In national YRBS data, students are classified as Urban, Suburban, or Rural based on the students' school location. The definitions are listed below:

- **Urban:** School is located inside a Metropolitan Statistical Area (MSA) and inside the "central city."
- **Suburban:** School is located inside a MSA, but outside the "central city."
- **Rural:** School is located outside a MSA.

A MSA is defined by the Census Bureau as a core area containing a substantial population nucleus with adjacent communities having a high degree of economic and social integration with that core; in each MSA, the largest place is designated as the "central city"¹⁷. As urban and suburban are both located within a MSA, they were combined for the analyses and referred to as "urban".

Weighting: Due to the complex sampling design used in the national YRBS, a weighting factor was applied to each student record to adjust for non-response and for the varying probabilities of selection. Weighted estimates and percentages are presented.

Analyses of YRBS data were performed using STATA version 8.2¹⁸.

Statistical Significance

Prevalence estimates and 95% confidence intervals (CI) were calculated for urban AI/AN students and urban white students. Differences in rates were deemed statistically significant by non-overlapping CI's. Except where noted, all findings presented are statistically significant.

Race Classification

The AI/AN race classification in this report has several variations due to the manner in which this

information has been collected. Mortality and natality data utilize five racial categories (white, African American, AI/AN, Asian/Pacific Islander, and other) as was collected in the 1990 U.S. Census. Data from the 2000 U.S. Census, however, allowed for six main racial categories (white, African American, AI/AN, Asian, Hawaiian or other Pacific Islander, and other). The 2000 census was the first in the nation's history to allow persons to identify as one or more races. The 1990 census, however, allowed only one race selection, thus making direct comparisons to the 2000 census difficult. Since many vital statistics measures have depended on the single race designation allowed in the 1990 census, the U.S. National Centers for Health Statistics (NCHS) have developed "bridged" population estimates based on the 2000 census which are in the single race categories similar to the 1990 census.

Racial classification in the YRBS is based on five racial categories (African American, American Indian or Alaska Native, Asian, Native Hawaiian or other Pacific Islander and white). While students are allowed to choose more than one race, those who report multiple race are aggregated into one category defined only by Hispanic or non-Hispanic ethnicity. Therefore, the racial categories of AI/AN and white that are used in this analysis are based on *single* race categories. Whites are used as the comparison group because they historically have had the best health status.

The current study was reviewed by the Portland Area Indian Health Service Institutional Review Board and was found to be exempt from oversight.

VI. TOPICS OVERVIEW & RESULTS

A. POPULATION/DEMOGRAPHICS

Where estimates are available, population statistics are presented here for four populations: AI/AN living in UIHO service areas, whites living in UIHO service areas, nationwide AI/AN, and nationwide whites. Where estimates are not available for all four of these populations, information is presented for those groups for which information was available.

Age and Size

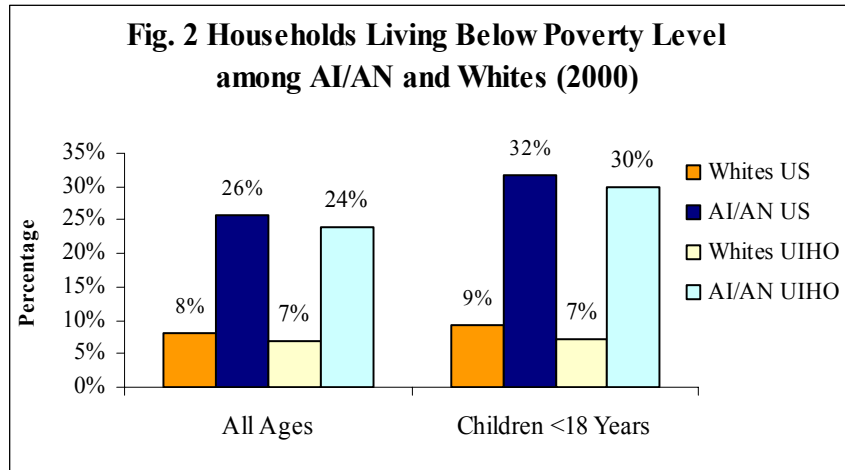
There were approximately 20.2 million youth between the ages of 15 and 19 living in the U.S. in 2000. Of these, roughly 232,000 (1%) reported AI/AN only race. Within this group, approximately 135,000 (58%) were living in Census defined urban areas and 53,000 (23%) were living in counties served by an UIHO (See Appendix: Table 1 for a list of UIHO service area counties and Appendix: Table 3 for UIHO service area population sizes)¹⁹. American Indian/Alaska Native youth make up a large proportion of the total AI/AN population, with one third of the AI/AN population under age 18 compared to less than one-quarter of the white population²⁰; this lends importance to closely examining the health status and behaviors of this sub-group. Additionally, nationwide and in UIHO areas, AI/AN tend to be younger, with a median age more than ten years lower compared to the white population (U.S. AI/AN = 28.0 years versus U.S. whites=38.6 years; UIHO AI/AN=29.1 versus UIHO whites=38.3 years)²¹.

School Enrollment

Based on the 2000 U.S. Census, 22.8% of the 15-19 year old U.S. AI/AN population were not enrolled in school compared to 15.2% for U.S. white youth²². In UIHO service areas, 23.3% of AI/AN youth and 15.3% of white youth ages 15-19 were not enrolled in school²³.

Poverty Status

As shown in Figure 2, the percent of the AI/AN population living in households with income below the poverty level was substantially higher than for whites both nationwide (25.7% and 8.1%, respectively) and in UIHO areas (24.0% and 6.9%, respectively)²⁴. The disparities were even greater in children less than 18 years old (U.S.: 31.6% and 9.4%; UIHO: 30.0% and 7.3%, respectively)²⁵. See Appendix: Table 2 for individual UIHO service area poverty rates.



Source: 2000 U.S. Census

Youth Risk Behavior Survey Demographics

A total of 59,839 students completed the national YRBS from 1997-2003 (Table 1). Six hundred and nine of these reported AI/AN race and 23,882 reported white race (1% and 40%, respectively). 84% of AI/AN (N=513) and 80% of whites (N=19,189) were defined as urban. The demographic profiles of participants were not statistically different in the AI/AN and white student populations (Table 1).

Table 1: Participant Characteristics by AI/AN and White Race (1997-2003)

Characteristic	AI/AN N=609 (%)	Whites N=23,882 (%)	Total Sample N=59,839 (%)
Survey year			
1997	139 (22.8)	5,554 (23.2)	16,134 (27.0)
1999	101 (16.6)	5,407 (22.6)	15,208 (25.4)
2001	211 (34.6)	6,336 (26.5)	13,401 (22.4)
2003	158 (25.9)	6,585 (27.6)	15,096 (25.2)
Age Mean(SD)	16.1 (0.09)	16.1 (0.02)	16.1 (0.01)
Grade level			
9 th	192 (31.7)	5,795 (24.3)	14,508 (24.3)
10 th	166 (27.4)	6,023 (25.3)	14,730 (24.7)
11 th	115 (19.0)	6,099 (25.6)	15,155 (25.4)
12 th	129 (21.3)	5,915 (24.8)	15,256 (25.5)
Ungraded	4 (0.66)	8 (0.03)	68 (0.11)
Gender			
Male	327 (53.8)	12,088 (50.7)	29,445 (49.3)
Female	281 (46.2)	11,755 (49.3)	30,261 (50.7)

Metropolitan status			
Urban	225 (37.1)	6,505 (27.4)	26,738 (45.0)
Suburban	288 (47.4)	12,684 (53.5)	25,626 (43.1)
Rural	94 (15.5)	4,515 (19.0)	7,109 (11.9)

Source: Youth Risk Behavior Survey; Percentages reflect totals for each characteristic

B. HEALTH CONDITION

Dental Care

American Indian/Alaska Native youth were less likely than youth in the white population to have had a dental check-up, cleaning or exam in the 12 months preceding the survey (55.7% and 76.1% respectively).

Sunscreen Use

American Indian/Alaska Native youth were more likely than white youth to never/rarely use sunscreen (SPF 15+) when in the sun for at least an hour (75.1% and 57.1%, respectively).

C. UNINTENTIONAL INJURY, SAFETY & VIOLENCE

Safety & Violence

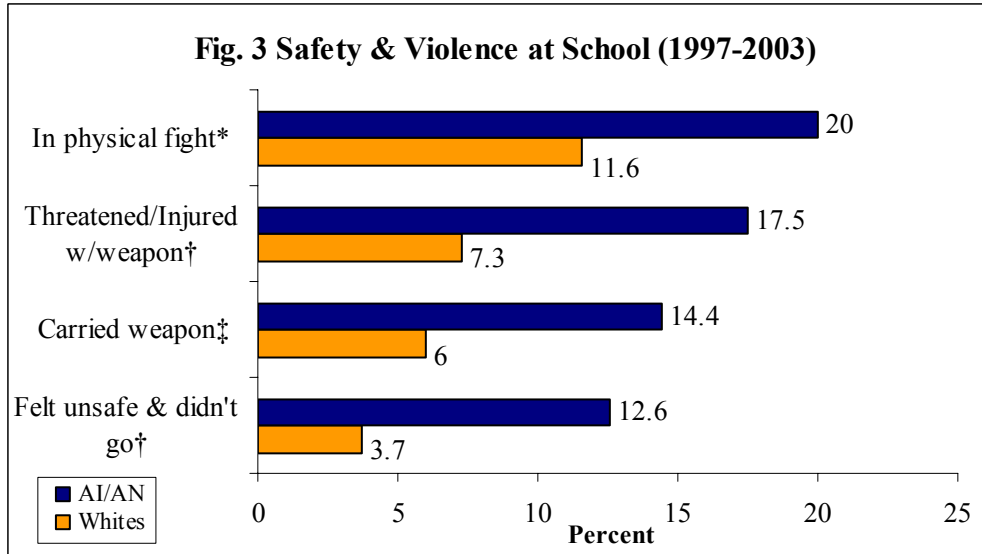
Of the 16 behaviors that measured unintentional injury, safety and violence, 11 were significantly higher among AI/AN compared to white youth (Table 2). Three of these behaviors were found to be at least two-fold higher in the AI/AN youth population: being physically hurt by a boy/girlfriend, being physically forced to have unwanted sex and carrying a gun on one or more of the past 30 days, while medical treatment for injury from a physical fight was more than three-fold higher among AI/AN.

Table 2: Safety & Violence among AI/AN and White Youth in Urban Areas (1997-2003)

Behavior	AI/AN % (95% CI)	Whites % (95% CI)
In a physical fight	50.2 (42.7, 57.6)	32.7 (31.3, 34.1)
Medical treatment for injury from a physical fight	10.8 (7.1, 16.1)	3.1 (2.7, 3.5)
Physically hurt by a boy/girlfriend*	17.0 (11.9, 23.7)	8.0 (7.3, 8.7)
Physically forced to have unwanted sex	16.4 (10.9, 24.0)	6.6 (6.0, 7.2)
Carried a weapon†	27.3 (22.2, 33.2)	16.1 (14.9, 17.3)
Carried a gun†	12.7 (8.5, 18.7)	4.3 (3.7, 5.0)
Never/rarely wear seatbelt when passenger in car	27.0 (20.4, 34.8)	14.4 (12.8, 16.1)

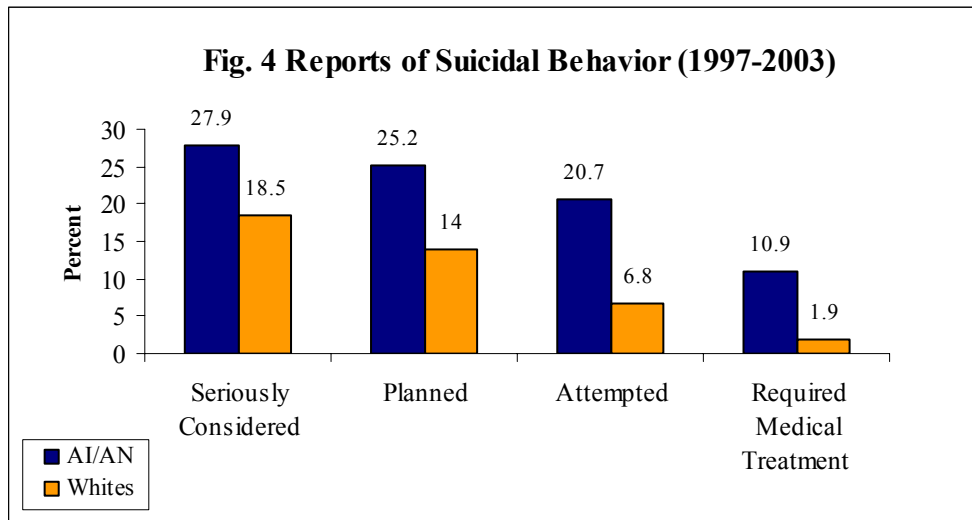
Source: Youth Risk Behavior Survey; * During the past 12 months; †One or more of the past 30 days

Figure 3 shows disparities between AI/AN and white youth in reported behaviors concerning school-related safety and violence. Carrying a weapon at school on one or more of the past 30 days and being threatened or injured with a weapon on school property one or more times in the past 12 months were more than two-fold higher in the AI/AN youth population (Fig. 3). Reports of AI/AN youth not going to school because of feeling unsafe were greater than three-fold higher compared to white youth (Fig 3).



Suicide

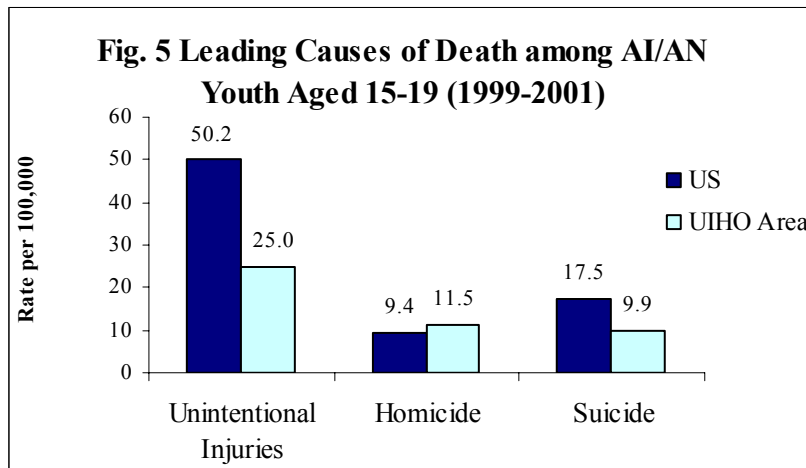
As shown in Figure 4, the prevalence of suicidal ideation and behaviors among AI/AN youth were significantly higher than in white youth in four out of the five measures. Reports of attempted suicide were more than three-fold higher and reports of injury resulting from a suicide attempt were nearly five-fold higher in AI/AN youth (Fig. 4).



Injury Mortality

In UIHO service areas, the leading cause of death among both AI/AN and white youth aged 15-19 was unintentional injuries²⁶. Nearly three quarters of these deaths were listed as motor-vehicle related²⁷. The second and third leading causes of death were homicide and suicide, respectively²⁸. Nationwide, AI/AN have significantly higher rates of death from unintentional injuries, homicide and suicide (50.2, 17.5, and 9.4 per 100,000, respectively) than the white population (35.5, 8.5, and 5.3, per 100,000, respectively). In UIHO service areas, the rates of death were higher among AI/AN compared to whites,

but did not reach statistical significance²⁹. Figure 5 shows the rates from mortality data for the leading causes of death among AI/AN populations aged 15-19 in the U.S. and in UIHO service areas in 1999-2001.



Source: U.S. Centers for Health Statistics

D. TOBACCO USE

Questions that address tobacco use in the YRBS measure lifetime and current smoking patterns, age of initiation, access to cigarettes, smoking on school property, and attempts to quit smoking. The prevalence of smoking a whole cigarette for the first time before age 13 (33.1% and 23.3%, respectively) and smoking cigarettes on school property during the last 30 days was higher among AI/AN compared to white youth (20.7% and 12.9%, respectively). A majority of the remaining measures, while higher among AI/AN compared to white youth, were not statistically significant. However, AI/AN fell far below the Healthy People 2010 target goals listed in Appendix: Table 4³⁰.

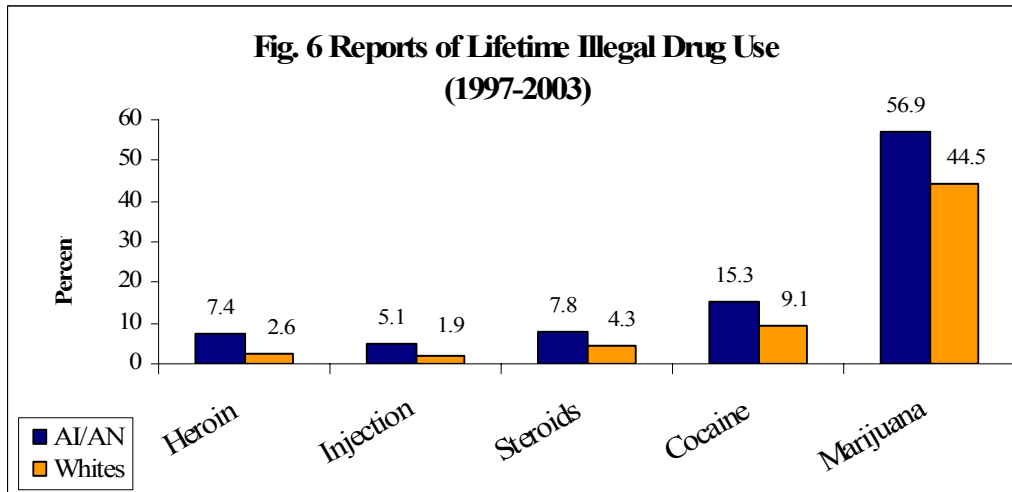
E. ALCOHOL AND OTHER DRUG USE

Alcohol Use

Questions that address alcohol use in the YRBS, measure lifetime and current use of alcohol, age of initiation, episodic heavy drinking, and drinking on school property. Prevalence estimates for most of the alcohol-related risk factors were not significantly different between AI/AN and white youth. The exception was having drunk alcohol (other than a few sips) for the first time before age 13 (40.5% and 28.1%, respectively) and having at least one drink of alcohol on school property during the past 30 days (8.3% and 4.4%, respectively).

Drug Use

Questions addressing drug use in the YRBS measure lifetime and current use of marijuana and cocaine, lifetime use of inhalants, heroin, methamphetamines, ecstasy, LSD, glue, steroids, and injected drugs, as well as reports of selling or being offered drugs.



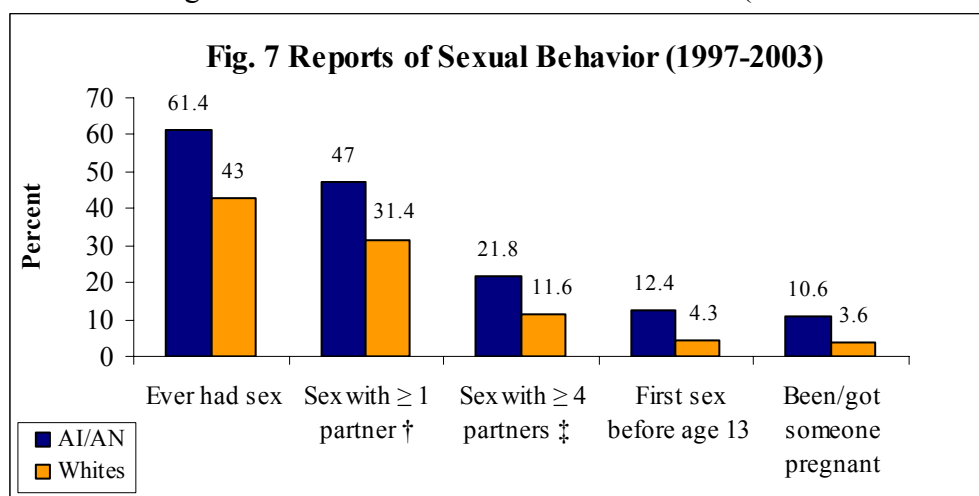
Source: Youth Risk Behavior Survey

Figure 6 shows disparities between AI/AN and white youth in percent of lifetime illegal drug use (i.e. having ever used) reported. Having ever used heroin, injected illegal drugs and used cocaine in the past 30 days (8.7% and 3.6%, respectively) were greater than two-fold higher among AI/AN compared to whites (Fig. 6). Reports of marijuana use in the past 30 days (38.0% and 24.9%, respectively), initiation before age 13 (17.5% and 8.7%, respectively) and use in the past 30 days on school property (15.3% and 5.5%, respectively) were all higher among urban AI/AN, and the latter two factors were more than two-fold higher for AI/AN compared to white youth.

F. SEXUAL BEHAVIOR & TEEN BIRTH RATE

Sexual Behavior

Questions that address sexual behavior in the YRBS measure the prevalence of sexual activity, number of sexual partners, age at first intercourse, alcohol and other drug use related to sexual activity, condom use, contraceptive use, and whether high school students received HIV prevention education. A higher percent of AI/AN youth had ever had sexual intercourse compared to white youth (Fig. 7). Prevalence estimates were also higher among AI/AN youth compared to white youth for: multiple sex partners and recent sexual intercourse with at least one partner (Fig. 7). Reports of initiation of sexual intercourse before age 13 and having been pregnant or making someone pregnant were nearly three-fold higher among AI/AN compared to white youth (Fig. 7). Additionally, AI/AN youth were less likely than white youth to have ever been taught about AIDS or HIV infection in school (85.8% and 91.7%, respectively).



Source: Youth Risk Behavior Survey; †Past 3 months; ‡During life

Teen Birth Rate

Nationwide, from 2000-02, the birth rate to 15-19 year olds was significantly higher among AI/AN compared to whites (56.1 and 41.3 per 1000, respectively). In UIHO service areas, the opposite was seen, with AI/AN rates below those in the white population (40.1 and 44.4 per 1000, respectively) ³¹.

G. PHYSICAL INACTIVITY

Physical Inactivity

American Indian/Alaska Native youth were more likely than white youth to watch three or more hours of television on an average school day (45.1% and 31.7%, respectively). Questions that address physical inactivity in the YRBS measure participation in physical activity, physical education classes, and sports teams as well as television watching. Although other estimates for AI/AN and white youth were not significantly different, both groups fell far below each of the Healthy People 2010 target goals for increasing physical activity listed in Appendix: Table 4³².

H. DIETARY BEHAVIORS

Overweight and Weight Control

38.3% of AI/AN students compared to 28.8% of white students described themselves as slightly or very overweight. The percent of students who were overweight based on BMI was higher among AI/AN compared to youth in the white population (18.9% and 10.0%, respectively).

Nutrition

American Indian/Alaska Native youth were less likely to have had green salad in the past week compared to white youth (60.2% and 70.1%, respectively). Consumption of milk, fruit, potatoes, carrots and other vegetables were not significantly different between AI/AN and white youth.

VII. CONCLUSION, LIMITATIONS AND RECOMMENDATIONS

Conclusion

Many high school students practice behaviors that place them at risk for serious health problems. In the current report, we examined national data sources to 1) identify the characteristics of the urban AI/AN youth population and 2) identify health risk behaviors that may be in need of greater attention in the urban AI/AN youth population compared to the white population. The findings of this study show a substantial and significant gap in the prevalence of health risk behaviors between urban AI/AN and urban white student populations. Urban AI/AN students were significantly more likely than urban white students to engage in behaviors resulting in unintentional injuries and violence, drug use and risky sexual behavior. Related outcomes were also worse among AI/AN than for whites. For example, nationwide AI/AN have significantly higher teen birth rates than whites and AI/AN ages 15-19 were found to have higher cause-specific death rates for the leading causes of death, including unintentional injury, homicide and suicide, compared to whites.

Limitations

Due to relatively small numbers of AI/AN sampled biennially in the national YRBS, analysis of trends is not possible in this data for the AI/AN population. Also, individual UIHO service area information is not available through the YRBS. The combined urban and suburban classification group is presented as a proxy in YRBS data for the urban AI/AN population served by the UIHO.

Respondents in self-reported surveys may under-report behaviors that are socially undesirable, unhealthy, or illegal (alcohol consumption, drug use, seat belt non-usage, etc.) and over-report behaviors which are socially desirable (amount of exercise, etc.)³³. However, despite problems with under-reporting, we still found high rates of risk behaviors among urban AI/AN, which may be underestimates of true rates, and the disparities observed may be even greater. In addition, recall bias may occur when the likelihood of a respondent recalling an event or the outcome of an event is affected by the event itself. Through design, these limitations will exist in any study findings that result from analysis of YRBS data.

While the YRBS only surveys youth who attend school, this population is not representative of all youth. Study results show a higher percentage of urban AI/AN youth ages 15-19 are not enrolled in school compared to whites in the same areas. Additionally, according to reports by the National Center for Education Statistics, AI/AN youth and young adults are more likely to have dropped out of school than white youth and young adults (15% and 6%, respectively)³⁴. In 2000, young adults living in families with incomes in the lowest 20% of all family incomes were six times as likely as their peers from families in the top 20% of the income distribution to drop out of high school³⁵. Research has shown that young adults who do not finish high school are more likely to be unemployed and earn less when they are employed than those who complete high school³⁶. Also, school attendance can be a protective factor from poor health outcomes³⁷. For these reasons, YRBS prevalence estimates may under-estimate the health risk-behaviors for all youth and in particular, for AI/AN youth not in school; their health status may be far worse than what is reported here.

Recommendations

Addressing the role of socioeconomic status (SES) should be central to any effort that addresses racial health disparities. Study results show a significantly higher percentage of urban AI/AN are living below the poverty level compared to the white population in the same areas. Even greater disparities were seen for urban AI/AN children less than 18 years old compared to whites. Socioeconomic variables are not included in YRBS, therefore a direct causal relationship could not be addressed in this analysis. However, disparities in SES, as seen in these census data, are likely contributors to the disparities seen in health risk behaviors between urban AI/AN and the white population in YRBS data.

The history of AI/AN includes traumatic events such as genocide, loss of land, forced relocation and assimilation resulting from colonization³⁸. This historical trauma has been hypothesized to manifest in AI/AN as high rates of risk behaviors, morbidity and mortality³⁹. As YRBS does not include questions about experiences of trauma and racism, additional research is needed to better understand the relationships between health risk behaviors in urban AI/AN youth and their environment, culture and history. Questions that address these critical issues have the potential to yield valuable information on many groups included in YRBS.

While few studies have examined the health of urban AI/AN youth nationwide, there are studies which have focused on rural, reservation and specific regional areas. Findings indicate health interventions in AI/AN communities should be culturally appropriate, acknowledge the diversity of the population, be based in community traditions that promote health, and be supported fully by the involved communities⁴⁰. Additionally, interventions should focus on multiple risk dimensions in order to better address commonly co-occurring risk factors in the AI/AN youth population such as substance abuse and suicidal behavior, in a holistic manner⁴¹. From a study comparing suicidal behavior in urban and

reservation American Indian (AI) adolescents, researchers have suggested that different approaches to prevention and treatment may be needed for urban AI youth compared to reservation youth⁴².

Reported protective factors against violence among urban AI youth have included: connections to school, a positive affect, and peer anti-violence norms⁴³. Additional studies such as these are needed for developing appropriate and successful interventions that decrease health risk behaviors and increase protective effects in urban AI/AN youth.

The use of over-sampling methodology, used for African American and Hispanic populations in the YRBS, could allow for trend analyses for AI/AN and it is recommended this strategy be considered for future surveys. The use of this methodology will allow for more precise estimates and facilitate the analysis of survey subgroups.

Lastly, evidence has shown that differences in survey question interpretation and response to extreme category choices may be related to race and ethnicity. One's cultural background may influence the perceived meaning of questions and the given choice of responses⁴⁴. Validity studies specific to the AI/AN population would provide important information, particularly with regards to whether recorded responses accurately reflect behaviors.

VIII. SUMMARY

This report examined a broad range of health status and health risk-behaviors among urban AI/AN youth nationwide. The high prevalence of risk-behaviors in urban AI/AN represents a significant disparity between this population compared to youth in the white population. These disparities identify problems in the AI/AN community that need greater attention from the public health community. More resources need to be focused on AI/AN health if the gap in health risks is to be reduced or eliminated.

A health program for urban AI/AN exists through which interventions might be implemented, yet the UIHO receive approximately 1% of the overall U.S. Indian Health Service budget with funding regularly in jeopardy. An important goal of this study was to support UIHO efforts in setting objectives and designing interventions for healthier communities. Along with morbidity and mortality data, YRBS results may be used for monitoring trends in health behaviors, tracking progress toward Healthy People 2010 goals, setting new objectives and evaluating interventions in health programs, services and policies that target urban AI/AN youth. These data can also be crucial in efforts to obtain funding to support intervention programs and other action steps. The high prevalence of many of the risk factors examined implies that health promotion and disease prevention activities have the potential to make a significant impact on risk reduction for urban AI/AN youth.

IX. APPENDIX

Table 1: Urban Indian Health Organization Service Area Counties and States

Urban Indian Health Organization	Service Area Counties	State
First Nations Community Health Source Albuquerque, NM UIHO	Bernalillo	New Mexico
Bakersfield American Indian Health Project Bakersfield, CA UIHO	Kern	California
Indian Health Board of Billings, Inc. Billings, MT UIHO	Big Horn, Yellowstone	Montana
North American Indian Alliance Butte, MT UIHO	Silver Bow	Montana
American Indian Health Services of Chicago, Inc. Chicago, IL UIHO	Cook	Illinois
Urban Inter-Tribal Center Dallas, TX UIHO	Collin, Dallas, Denton, Ellis, Hood, Johnson, Kaufman, Parker, Rockwall, Tarrant, Wise	Texas
Denver Indian Health and Family Services Denver, CO UIHO (*County not included in these analyses)	Adams, Arapahoe, Boulder, Broomfield*, Denver, Douglas, Gilpin, Jefferson	Colorado
American Indian Health and Family Services Detroit, MI UIHO	Genesee, Ingham, Kent, Wayne	Michigan
Native Americans for Community Action Flagstaff, AZ UIHO	Coconino	Arizona
Fresno Indian Health Association Fresno, CA UIHO	Fresno, Madera, Tulare	California
Indian Family Health Center Great Falls, MT UIHO	Cascade	Montana
United Amerindian Health Center, Inc. Green Bay, WI UIHO	Brown, Door	Wisconsin
Helena Indian Alliance Helena, MT UIHO	Jefferson, Lewis & Clark	Montana
North American Indian Center of Boston, Inc. Jamaica Plain, MA UIHO	Suffolk, Middlesex, Norfolk, Plymouth	Massachusetts
Nebraska Urban Indian Health Coalition Lincoln, NE UIHO	Douglas, Lancaster, Sarpy, Washington, NE, Woodbury, IA	Nebraska
United American Indian Involvement Inc Los Angeles, CA UIHO	Los Angeles	California

IX. APPENDIX

Table 1 Cont'd: Urban Indian Health Organization Service Area Counties and States

Urban Indian Health Organization	Service Area Counties	State
Gerald L. Ignace Indian Health Center, Inc. Milwaukee, WI UIHO	Milwaukee, Waukesha	Wisconsin
Indian Health Board of Minneapolis Minneapolis, MN UIHO	Hennepin, Ramsey	Minnesota
Missoula Indian Center Missoula, MT UIHO	Missoula	Montana
American Indian Community House New York, NY UIHO	Bronx, Essex, Kings, Nassau, New York, Queens, Richmond, Westchester	New York
Native American Health Center Oakland, CA UIHO	Alameda, Contra Costa, Marin, San Francisco, San Mateo	California
Native American Community Health Center Phoenix, AZ UIHO	Maricopa	Arizona
South Dakota Urban Indian Health, Inc. Pierre, SD UIHO	Brown, Hughes, Minnehaha, Stanley	South Dakota
Native American Rehabilitation Assoc. of the NW, Inc. Portland, OR UIHO	Clackamas, Multnomah, Washington, OR, Clark, WA	Oregon
Nevada Urban Indian, Inc. Reno, NV UIHO	Carson City, Churchill, Douglas, Storey, Washoe	Nevada
Sacramento Native American Health Center, Inc. Sacramento, CA UIHO	Sacramento	California
Indian Walk-In Center Salt Lake, UT UIHO	Davis, Salt Lake, Tooele, Utah, Weber	Utah
San Diego American Indian Health Center San Diego, CA UIHO	San Diego	California
Indian Health Center of Santa Clara Valley, Inc San Jose, CA UIHO	Santa Clara	California
American Indian Health & Services Santa Barbara, CA UIHO	San Luis Obispo, Santa Barbara, Ventura	California
Seattle Indian Health Board Seattle, WA UIHO	King	Washington
N.A.T.I.V.E. Project Spokane, WA UIHO	Spokane	Washington
Tucson Indian Center Tucson, AZ UIHO	Pima	Arizona
Hunter Health Clinic Wichita, KS UIHO	Butler, Reno, Sedgwick, Sumner	Kansas

IX. APPENDIX

Table 2: American Indian/Alaska Native (AI/AN) Poverty Rates for Children Under 18 Years, by Urban Indian Health Organization (UIHO) Service Area, 2000

Health Organization Service Area	AI/AN	White	All Races
US Total	31.6%	9.3%	16.6%
UIHO Service Area Total	30.0%	7.3%	18.0%
First Nations Community Health Source Albuquerque, NM UIHO	30.9%	8.4%	18.4%
Bakersfield American Indian Health Project Bakersfield, CA UIHO	30.0%	15.2%	28.2%
Indian Health Board of Billings, Inc. Billings, CA UIHO	45.8%	12.1%	17.7%
North American Indian Alliance Butte, MT UIHO	88.4%	17.9%	19.5%
American Indian Health Services of Chicago, Inc. Chicago, IL UIHO	28.4%	4.9%	19.3%
Urban Inter-Tribal Center Dallas, TX UIHO	17.9%	5.6%	14.2%
Denver Indian Health and Family Services Denver, CO UIHO	23.4%	4.6%	10.1%
American Indian Health and Family Services Detroit, MI UIHO	20.0%	8.8%	20.0%
Native Americans for Community Action Flagstaff, AZ UIHO	36.6%	9.2%	22.7%
Fresno Indian Health Association Fresno, CA UIHO	43.4%	13.4%	32.1%
Indian Family Health Center Great Falls, MT UIHO	52.3%	16.7%	19.2%
United Amerindian Health Center, Inc. Green Bay, WI UIHO	22.3%	5.6%	8.4%
Helena Indian Alliance Helena, MT UIHO	39.6%	11.7%	13.1%
North American Indian Center of Boston, Inc. Jamaica Plain, MA UIHO	30.2%	5.3%	10.4%
Nebraska Urban Indian Health Coalition Lincoln, NE UIHO	34.5%	6.9%	11.6%
United American Indian Involvement Inc Los Angeles, CA UIHO	28.1%	9.4%	24.6%

IX. APPENDIX

Table 2 Cont'd: American Indian/Alaska Native (AI/AN) Poverty Rates for Children Under 18 Years, by Urban Indian Health Organization (UIHO) Service Area, 2000

Health Organization Service Area	AI/AN	White	All Races
Gerald L. Ignace Indian Health Center, Inc. Milwaukee, WI UIHO	28.0%	4.6%	18.0%
Indian Health Board of Minneapolis Minneapolis, MN UIHO	32.4%	3.8%	12.6%
Missoula Indian Center Missoula, MT UIHO	36.9%	14.0%	15.2%
American Indian Community House New York, NY UIHO	37.3%	10.7%	25.3%
Native American Health Center Oakland, CA UIHO	15.5%	4.6%	11.3%
Native American Community Health Center Phoenix, AZ UIHO	31.1%	6.6%	15.9%
South Dakota Urban Indian Health, Inc. Pierre, SD UIHO	40.0%	6.6%	9.4%
Native American Rehabilitation Assoc. of the NW, Inc. Portland, OR UIHO	17.5%	8.8%	11.8%
Nevada Urban Indian, Inc. Reno, NV UIHO	24.1%	8.6%	12.7%
Sacramento Native American Health Center, Inc. Sacramento, CA UIHO	26.5%	13.2%	20.6%
Indian Walk-In Center Salt Lake, UT UIHO	23.8%	6.7%	9.1%
San Diego American Indian Health Center San Diego, CA UIHO	26.4%	7.4%	16.9%
Indian Health Center of Santa Clara Valley, Inc. San Jose, CA UIHO	15.3%	3.9%	9.0%
American Indian Health & Services Santa Barbara, CA UIHO	20.6%	6.3%	13.4%
Seattle Indian Health Board Seattle, WA UIHO	26.3%	5.7%	9.9%
N.A.T.I.V.E. Project Spokane, WA UIHO	29.1%	12.8%	15.0%
Tucson Indian Center Tucson, AZ UIHO	40.2%	10.3%	20.0%
Hunter Health Clinic Wichita, KS UIHO	19.7%	8.0%	12.2%

IX. APPENDIX

Table 3: American Indian/Alaska Native (AI/AN) Population Aged 15-19, by Urban Indian Health Organization (UIHO) Service Area, 2000

Health Organization Service Area	AI/AN	White	All Races
US Total	232,351	14,167,148	20,219,890
UIHO Total	76,221	4,442,087	7,529,683
First Nations Community Health Source Albuquerque, NM UIHO	2,123	25,945	40,728
Bakersfield American Indian Health Project Bakersfield, CA UIHO	901	30,676	55,224
Indian Health Board of Billings, Inc. Billings, CA UIHO	1,163	8,877	10,600
North American Indian Alliance Butte, MT UIHO	60	2,332	2,494
American Indian Health Services of Chicago, Inc. Chicago, IL UIHO	1,298	172,560	368,175
Urban Inter-Tribal Center Dallas, TX UIHO	2,403	235,823	371,083
Denver Indian Health and Family Services Denver, CO UIHO	1,786	122,642	162,279
American Indian Health and Family Services Detroit, MI UIHO	1,206	142,684	240,779
Native Americans for Community Action Flagstaff, AZ UIHO	3,448	5,747	10,188
Fresno Indian Health Association Fresno, CA UIHO	2,292	53,743	113,343
Indian Family Health Center Great Falls, MT UIHO	350	5,228	6,001
United Amerindian Health Center, Inc. Green Bay, WI UIHO	498	16,638	18,837
Helena Indian Alliance Helena, MT UIHO	111	4,824	5,121
North American Indian Center of Boston, Inc. Jamaica Plain, MA UIHO	508	152,956	205,483
Nebraska Urban Indian Health Coalition Lincoln, NE UIHO	668	60,515	73,426
United American Indian Involvement Inc Los Angeles, CA UIHO	6,281	278,076	683,466

IX. APPENDIX

Table 3 Cont'd: American Indian/Alaska Native (AI/AN) Population Aged 15-19, by Urban Indian Health Organization (UIHO) Service Area, 2000

Health Organization Service Area	AI/AN	White	All Races
Gerald L. Ignace Indian Health Center, Inc. Milwaukee, WI UIHO	750	61,801	94,035
Indian Health Board of Minneapolis Minneapolis, MN UIHO	1,464	78,972	111,205
Missoula Indian Center Missoula, MT UIHO	236	7,399	8,007
American Indian Community House New York, NY UIHO	3,636	277,538	660,153
Native American Health Center Oakland, CA UIHO	1,598	113,269	241,786
Native American Community Health Center Phoenix, AZ UIHO	5,421	151,108	214,672
South Dakota Urban Indian Health, Inc. Pierre, SD UIHO	524	14,150	15,416
Native American Rehabilitation Assoc. of the NW, Inc. Portland, OR UIHO	1,240	96,660	120,293
Nevada Urban Indian, Inc. Reno, NV UIHO	796	23,798	30,457
Sacramento Native American Health Center, Inc. Sacramento, CA UIHO	1,070	48,725	87,895
Indian Walk-In Center Salt Lake, UT UIHO	1,495	145,896	165,487
San Diego American Indian Health Center San Diego, CA UIHO	2,144	115,434	199,919
Indian Health Center of Santa Clara Valley, Inc San Jose, CA UIHO	987	50,400	108,026
American Indian Health & Services Santa Barbara, CA UIHO	1,261	72,711	108,620
Seattle Indian Health Board Seattle, WA UIHO	1,215	74,880	108,261
N.A.T.I.V.E. Project Spokane, WA UIHO	557	29,147	32,890
Tucson Indian Center Tucson, AZ UIHO	2,751	42,080	62,199
Hunter Health Clinic Wichita, KS UIHO	581	35,356	44,732

IX. APPENDIX

Table 4: American Indian/Alaska Native Youth Risk Behaviors Compared to Healthy People 2010 Target Goals, Urban Areas, United States, 1997-2003

Topic Area	Objective	2010 Goal %	Urban AI/AN %
<i>Sun Protection</i>	Increase proportion who follow protective measures that may reduce the risk of skin cancer	None set*	25%*
<i>Injury</i>	Increase use of seatbelts	92%	73%**
	Reduce physical fighting in the past 12 months	32%	50%
	Reduce weapon carrying on school property in the past 30 days	4.9%	14%
<i>Suicide</i>	Reduce rate of suicide attempts	1%	21%
<i>Tobacco</i>	Reduce use in the past 30 days of:		
	– Tobacco products	21%	44%
	– Cigarettes	16%	38%
	– Cigars	8%	19%
	– Spit tobacco	1%	16%
	Increase tobacco use cessation attempts	84%	66%
<i>Alcohol & Drug Use</i>	Reduce proportion who rode, during the past 30 days, with a driver who had been drinking alcohol	30%	39%
<i>Sexual Behavior</i>	Increase proportion who abstain from sexual intercourse or use condoms if currently sexually active	95%	58%†
<i>Physical Activity</i>	Increase proportion who engage in moderate physical activity for at least 30 min. on ≥5 days of the past week	35%	24%
	Increase proportion who engage in vigorous physical activity that promotes cardio-respiratory fitness for at least 20 min. on ≥3 days of the past week	85%	60%
	Increase proportion who participate in daily school physical education	50%	24%
	Increase proportion who exercised/played sports for at least 50% of PE class time	50%	44%‡
	Increase proportion who watched 2 or fewer hours of TV on an average school day	75%	54%

AI/AN=American Indian/Alaska Native

Percentages may not reflect statistically significant differences between groups.

*Developmental objective, Healthy People 2010 target not set. YRBS 1997-2003: 75% of urban AI/AN never or rarely wear sunscreen or sunblock of 15 SPF or higher when they are outside for more than one hour on a sunny day.

** YRBS 1997-2003: 27% of urban AI/AN never or rarely wear a seat belt when riding in a car driven by someone else.

† Of urban students who had sexual intercourse during the past 3 months, percent who used a condom during last sexual intercourse.

‡ Of urban students enrolled in physical education class, percent who exercised or played sports more than 30 minutes during an average class.

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