Northwest American Indian and Alaska Native Mortality

A summary of death certificate data from Idaho, Oregon, and Washington

Northwest Portland Area Indian Health Board

Indian Leadership for Indian Health

Foreword

This report was developed by the **Improving Data & Enhancing Access (IDEA-NW) project** in an effort to describe recent mortality patterns among the Northwest American Indian and Alaska Native (AI/AN) population. Our goal is to provide quality AI/AN surveillance data to inform public health programs and priorities.

The Northwest Portland Area Indian Health Board (NPAIHB) is a tribal organization governed by the 43 federally recognized tribes of Idaho, Oregon, and Washington. Tribal governments appoint a delegate to represent them on the board, which meets on a quarterly basis. The delegates guide the priorities and programs of the NPAIHB.

The development of this report was supported by grant #R01HS019972 from the Agency for Healthcare Research and Quality. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Agency for Healthcare Research and Quality or the U.S. government.

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Recommended citation: Northwest Portland Area Indian Health Board. *Northwest American Indian and Alaska Native Mortality*. Portland, OR: Northwest Tribal EpiCenter, 2012.

Abbreviations used in this report

AI/AN	American Indian or Alaska Native
APC	Annual percent change
CDC	Centers for Disease Control and Prevention
COD	Cause of death
CVD	Cardiovascular disease
ICD	International Classification of Diseases
IHS	Indian Health Service
I & P	Influenza and pneumonia
MVC	Motor vehicle crash
NCHS	National Center for Health Statistics
NTR	Northwest Tribal Registry
OD	Overdose
OPR	Opioid pain reliever

Contents

Background

American Indians and Alaska Natives (AI/ANs) are commonly reported to be at higher risk than the general population for many health problems, and experience higher rates of death from many causes. While all-cause, age-adjusted death rates for both AI/ANs and whites declined for much of the 20th century, in the mid-1980s they began to increase for AI/ANs[1], and AI/ANs have a lower life expectancy than the general population. Specifically deaths due to injuries, both intentional and unintentional, reveal major racial disparities which have led to a public health focus on injury prevention in Indian Country[2] .

Health status assessment for racial/ethnic groups is often hindered by the lack of complete and accurate data on race/ethnicity in surveillance systems, and AI/ANs are more likely to be misclassified than patients of other races[3,4]. Death certificate race data is often recorded by coroners, funeral directors or medical examiners based on the decedent's appearance or other information. There may be hesitation to ask the next-of-kin questions about the decedent's race, and if the question is asked, the proxy may not answer as the decedent would have. Errors may be compounded when systems interact; for example, cancer and other disease registries often rely on death records for demographic data. The net result of racial misclassification for AI/ANs is under-counting of health events and underestimation of disease and mortality rates.

In response to this problem, the Northwest Tribal Epidemiology Center formed the Northwest Tribal Registry Project in 1999 to conduct record linkages with various public health datasets. This project became the **IDEA-NW** (**Improving Data & Enhancing Access**) project, with funding from the Agency for Healthcare Research and Quality, funded from 2010-2013. IDEA-NW's goals are to improve the validity and reliability of AI/AN race data in state data systems and increase the availability of accurate and complete health status data for Northwest tribal communities, to inform public health decision-making and efforts to eliminate health disparities.

1 Kunitz SJ. Changing patterns of mortality among American Indians. AJPH 2008;98:404-411.
2 Indian Health Service 2012. http://www.ihs.gov/MedicalPrograms/InjuryPrevention/
3 Boehmer U, Kressin NR, Berlowitz DR, Christiansen CL, Kazis LE, Jones JA. Self-Reported vs Administrative Race/Ethnicity Data and Study Results. AJPH 2002;92(9):1471-1473.
4 Noymer A, Penner M, Saperstein A. Cause of Death Affects Racial Classification on Death Certificates. PLoS ONE 2011;6(1): e15812. doi:10.1371/journal.pone.0015812

Improving race data in state data systems is achieved through record linkages with a list of known AI/ANs in the Northwest, the Northwest Tribal Registry (NTR). The NTR is generated from the registration data of Indian Health Service and tribal clinics in the Northwest, and it includes only demographic information (no health status or diagnostic information). Through a partnership with the Seattle Indian Health Board/Urban Indian Health Institute, the data set has been augmented to better represent urban AI/ANs living in the Seattle region. Other urban populations including Portland and Spokane are known to be under-represented in this work.

Partnership Spotlight

The establishment of the Urban Indian Health Institute (UIHI) in 2000 created a critical opportunity to learn about the health status of urban-dwelling American Indians/Alaska Natives (AI/AN). Despite the fact that the majority of AI/ANs live in urban areas, disease and health surveillance of the population continues to be a challenge. Urban AI/AN data are not routinely or consistently included in national health status reports, and local/state public health jurisdictions rarely disaggregate and/or analyze data separately for this population.

Over the past 12 years the UIHI has responded to this need by developing an urban AI/AN surveillance system to examine and report on the health status of AI/ANs living in select urban counties serviced by the network of Title V Urban Indian Health Organizations (UIHOs) across the country. This system contains several large national public health datasets, including mortality data from the National Vital Statistics System. The UIHI uses these data to document and track the significant morbidity and mortality disparities experienced by urban AI/ANs compared with the general population living in urban areas.

The UIHI provides critical health status data in community health profiles for each UIHO and an aggregate urban profile, as well in data requests from UIHOs, government agencies, academic researchers and community members. These data are used by UIHOs to identify health priorities, allocate resources, guide the development of new programs, identify needs for new data collection and develop grant applications. To learn more about UIHI visit www.uihi.org.

UIHI
Urban Indian Health Institute
A Division of the Seattle Indian Health Board

Methods

IDEA-NW project staff visited the Idaho Department of Health and Welfare's Bureau of Vital Records and Health Statistics, the Center for Health Statistics at the Washington Department of Health, and the Oregon Health Authority's Office of Disease Prevention and Epidemiology to conduct data linkages with each state's death certificates.

The death certificate files were linked with the NTR to identify individuals who appeared in both files. Linkages were conducted using LinkPlus (Registry Plus™, CDC) software, which allows for probabilistic matching. Since the NTR is a list of known AI/ANs, any records in the death certificate file which matched with the NTR were considered to be AI/AN race, regardless of how their race was recorded on the death certificate.

For this report, three-state analysis is reported for the combined years 2006 to 2009, the most recent period for which data were available for all three states. Trend analysis, available for Washington only, is restricted to deaths between 1990 and 2009. This time frame was chosen for the sake of consistent rates, as this is the period for which NCHS bridged race population estimates were available to use as population denominators. Cause of death was defined based on the ICD-9 and ICD-10 codes found in the underlying cause of death field, and in some cases (where noted) the contributing cause of death fields. AI/AN race was defined as any record which was coded as AI/AN on the death certificate and/or had a match in the NTR. White race (alone) was chosen as the comparison group, including Hispanic and non-Hispanic ethnicity. No other races were included in the analysis. For the rates, NCHS bridged race estimates were used as the denominator[5]. Rates were age-adjusted and presented per 100,000 population. Trends were analyzed for significance using linear regression, and annual percent change (APC) measures are presented for statistically significant trends ($p<0.05$).

Data note

Annual percent change is the average annual change in rates over a period of time, expressed as a percent of the rate. The APC is one statistic that is used to measure trends.

5 National Center for Health Statistics. Bridged-race population estimates, United States July 1st resident population years 1990-2009 by state, county, age, sex, bridged-race, and Hispanic origin (vintage 2009). Prepared under collaborative agreement with the U.S. Census Bureau; released 23 July 2010.

Idaho

Between 2006 and 2010, there were 708 AI/AN deaths and 52,925 white deaths among Idaho residents. These numbers reflect the correction for racial misclassification. During the linkage it was determined that 59 AI/AN deaths were misclassified as another race (most commonly white). The misclassification prevalence among all AI/AN records was 8%. Linkage with the NTR increased ascertainment of AI/AN deaths by about 9%. Among records for which a race had been coded in Idaho, 92% were classified correctly as AI/AN.

Oregon

Between 2006 and 2010, there were 2,017 AI/AN deaths and 145,971 white deaths among Oregon residents. These numbers reflect the correction for racial misclassification. During the linkage it was determined that 261 AI/AN deaths were misclassified as non-AI/AN (about 98% of these were coded as white). The misclassification prevalence among all AI/AN records was 13%. Linkage with the NTR increased ascertainment of AI/AN deaths by 15%. Among records for which a race had been coded in Oregon, 77% were classified correctly as AI/AN.

Washington

Between 1990 and 2009, there were 12,780 AI/AN deaths and 797,555 white deaths among Washington residents. These numbers reflect the correction for racial misclassification. During the linkage it was determined that 1,242 AI/AN deaths were misclassified as another race (usually white). The misclassification prevalence among all AI/AN records was 10%. Linkage with the NTR increased ascertainment of AI/AN deaths by about 11%. Among records for which a race had been coded, 84% were classified correctly as AI/AN in the state data system.

Leading Causes of Death

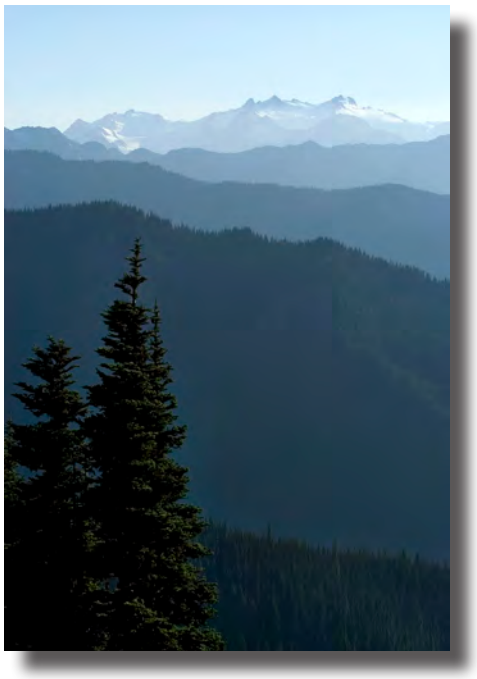


Table 1 presents the top ten causes of death for all three Northwest states combined. Both AI/ANs and whites shared the same top two causes of death, heart disease and cancer. However, these leading two causes accounted for a larger proportion of deaths among whites (54%) than AI/ANs (42%). Unintentional injury was the third leading cause for AI/ANs, accounting for proportionally over twice as many deaths as among whites. Diabetes and chronic liver disease were the fourth and sixth leading causes of death respectively for AI/ANs, but did not appear in the top five for whites. Alzheimer's Disease was the fifth leading cause of death for whites but was only the eighth most common cause for AI/ANs (tied with influenza and pneumonia).

Throughout the four year period, all-cause mortality rates for AI/ANs ranged from 1.2 times that of whites (in Idaho) to 1.6 times (in Washington).

Unintentional injury and chronic liver disease were notable for even higher disparities (as high as 2.1 and 4.0 times the white rates respectively). Age-adjusted rates of the top ten causes of death among all Northwest AI/ANs and whites are presented in Figure 1.

Table 1. Leading causes of death, Northwest states, 2006-2009

	Percent of All Deaths	
	AI/AN	**White**
1	Heart Diseases (23.3%)	Heart Diseases (30.1%)
2	Cancer (19.1%)	Cancer (23.8%)
3	Unintentional Injury (11.4%)	Chronic Lower Respiratory Disease (6.2%)
4	Diabetes (5.1%) - tied	Unintentional Injury (5.3%)
5	Chronic Lower Respiratory Disease (5.1%) - tied	Alzheimer's Disease (5.1%)
6	Chronic Liver Disease and Cirrhosis (4.9%)	Diabetes (3.2%)
7	Suicide (3.1%)	Suicide (1.9%)
8	Alzheimer's Disease (1.9%)	Influenza and Pneumonia (1.7%)
9	Influenza and Pneumonia (1.8%)	Chronic Liver Disease and Cirrhosis (1.4%)
10	Homicide (1.4%)	Parkinson's Disease (1.1%)

AI/ANs across all three states died much younger than their white counterparts as seen in Table 2. The average (mean) age at death for AI/ANs was betweem 58-62 years old in each of the three states, whereas whites lived to an average of 73-75 years old. The median age at death represents the middle of the age range at which people died, meaning that half of the group died at an older age and half at a younger age. The median is not affected by extremes at either end as the mean is (e.g., a disproportionate number of infant deaths would pull the mean downward).

Figure 1. Rates for leading causes of death, Northwest states, 2006-2009

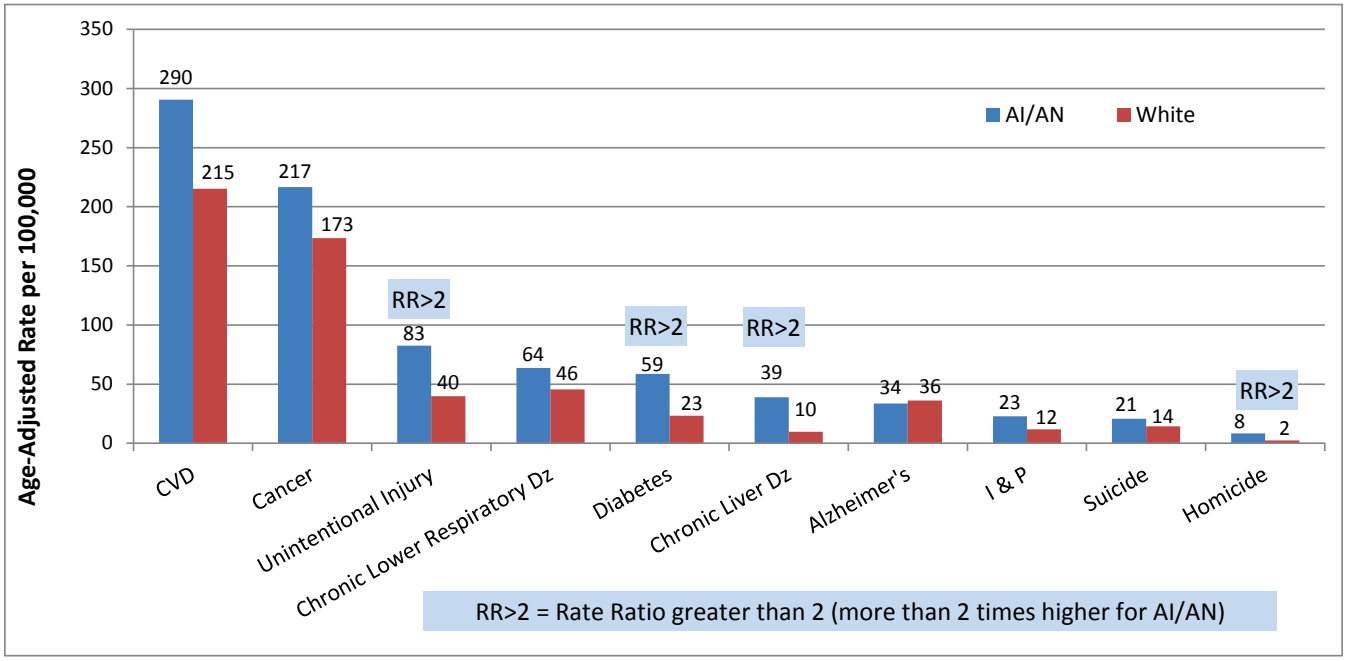
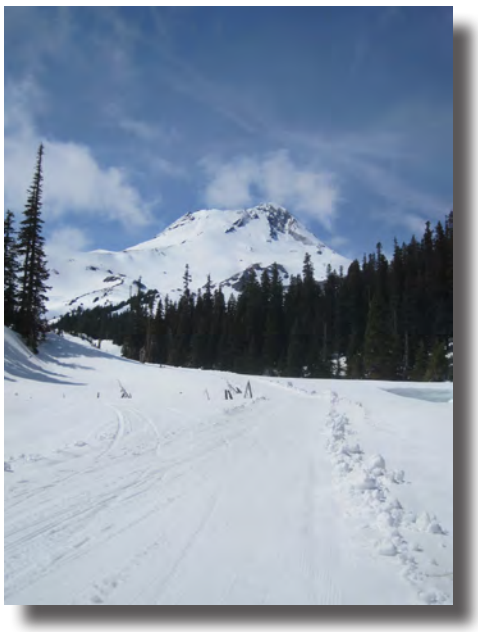


Table 2. Age at death, 2006-2009

	AI/AN		White	
	Mean	*Median*	*Mean*	*Median*
Idaho	58.2	60	73.3	78
Oregon	62.2	65	75.3	80
Washington	59.4	62	74.3	79

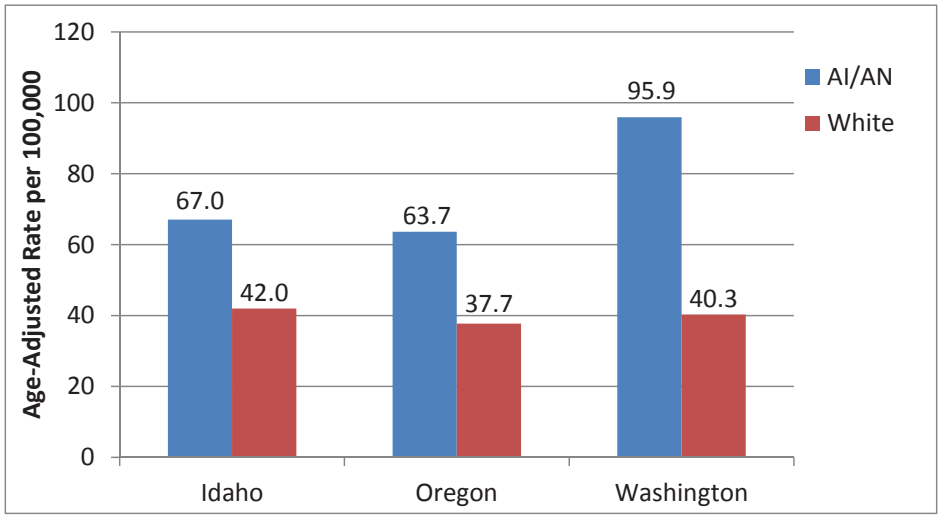


Deaths due to injuries, both intentional and unintentional, reveal major disparities. This is an area where prevention efforts may be particularly effective. In recent years, there has been an increasing public health focus on injury prevention in Indian Country. Unintentional injuries accounted for the majority of injury deaths in Northwest AI/ANs, followed by suicides and homicides.

Unintentional Injuries

AI/ANs living in Washington had the highest rates of unintentional injury deaths, followed by Idaho and Oregon. When compared with the white population, Washington also had the largest disparity with a rate ratio of 2.4 (Figure 2).

Figure 2. Unintentional injury mortality, 2006-2009



Focus on Community Programs

NPAIHB's **Injury Prevention Program (IPP)** has been funded through a cooperative agreement with the Indian Health Service (IHS) since 2010. The IPP oversees the Northwest Tribal Injury Prevention Coalition, which recently developed a 5-year Tribal Injury Prevention Action Plan. Together, the IPP and Coalition members work with the Northwest Tribes to develop and implement effective injury prevention and education strategies, with an emphasis on motor vehicle safety and elder falls prevention. The IPP also contributes to the collection, analysis and interpretation of injury data.
For more information about NPAIHB's

Injury Prevention work, contact:
Luella Azule (Yakama/Umatilla),
Injury Prevention Program Coordinator,
lazule@npaihb.org,
503-416-3263.

IHS Injury Prevention Advocacy, Outreach and Results

Men had higher rates of unintentional injury deaths across all three states, and for AI/ANs the difference was largest in Idaho, where men were twice as likely to die from unintentional injuries than women (Figure 3).

The majority of unintentional injury deaths among both racial groups were attributable to motor vehicle crashes (MVC) and accidental poisoning, although MVCs accounted for proportionally more deaths among AI/ANs than whites (Figure 4). Whites had a much higher proportion of unintentional injury deaths due to falls than AI/ANs. This is possibly related to the difference in age at death as we find AI/ANs are dying at younger ages of other causes while most fall deaths among whites occur in those eighty years and older.

Figure 3. Unintentional injury mortality by sex, 2006-2009

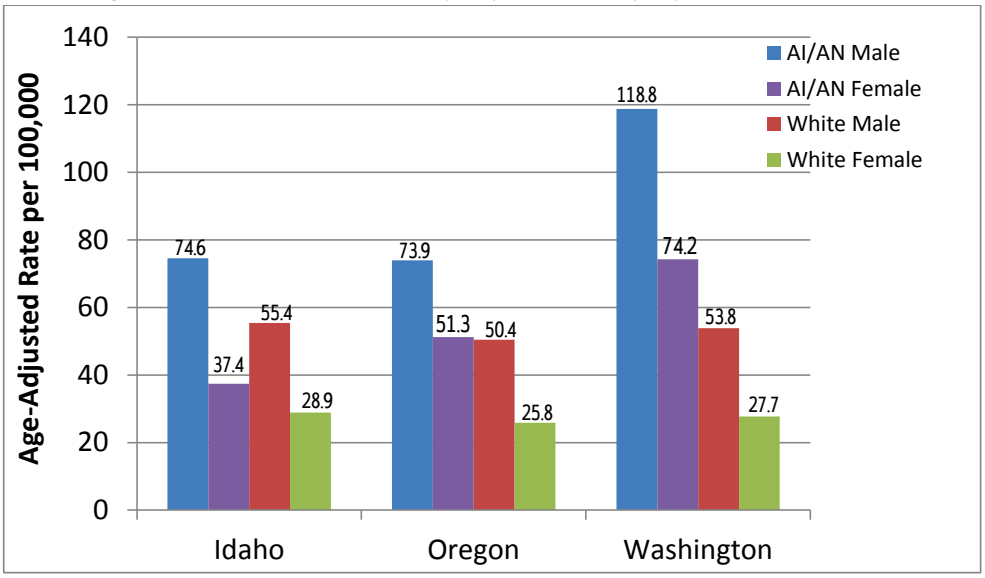
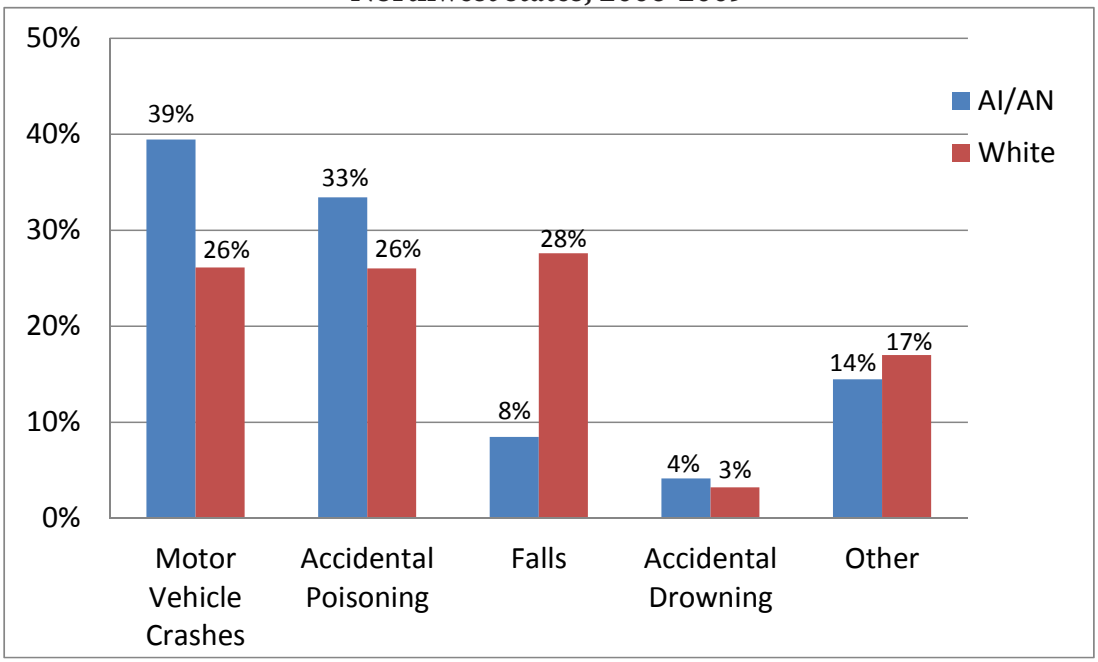


Figure 4. Leading causes of unintentional injury deaths, Northwest states, 2006-2009



The age distribution for unintentional injury deaths differed between the two racial groups, with AI/ANs between the ages of 15 and 29 at especially high risk when compared with whites. At all points throughout the age distribution, AI/ANs had higher rates, with the exception of those ages 80 and older (Figure 5).

In Washington, where data were available back to 1990, trend analysis reveals that unintentional injury mortality rates were consistently higher for AI/ANs than whites during this time period, averaging over two times higher (Figure 6). AI/AN males and females both experienced similar trends, with male rates above females, but female AI/AN rates increased more rapidly. Overall, both AI/AN and white unintentional injury mortality rates increased significantly over the time period, with an annual percent change (APC) of 1.7% for AI/ANs and 1.4% for whites (Figure 6).

Figure 5. Unintentional injury mortality by age, 2006-2009

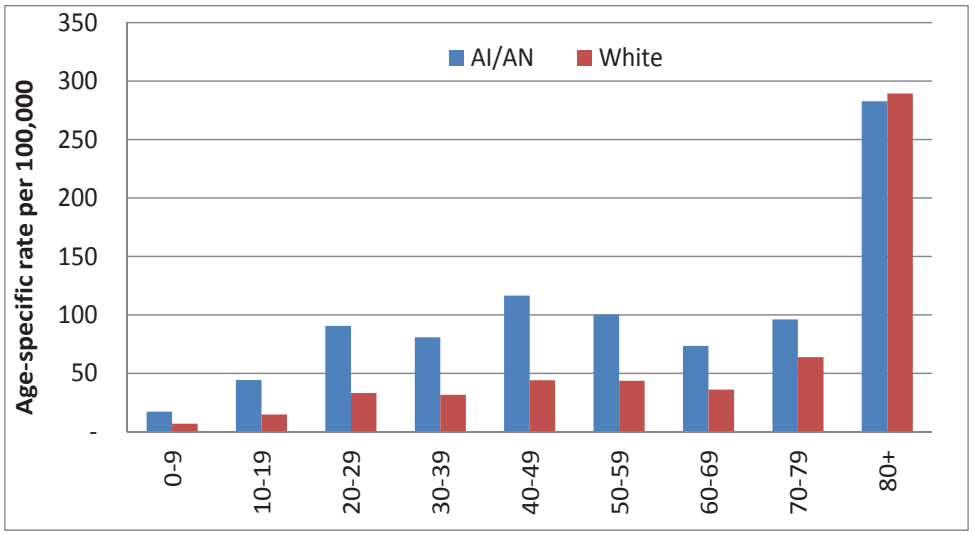
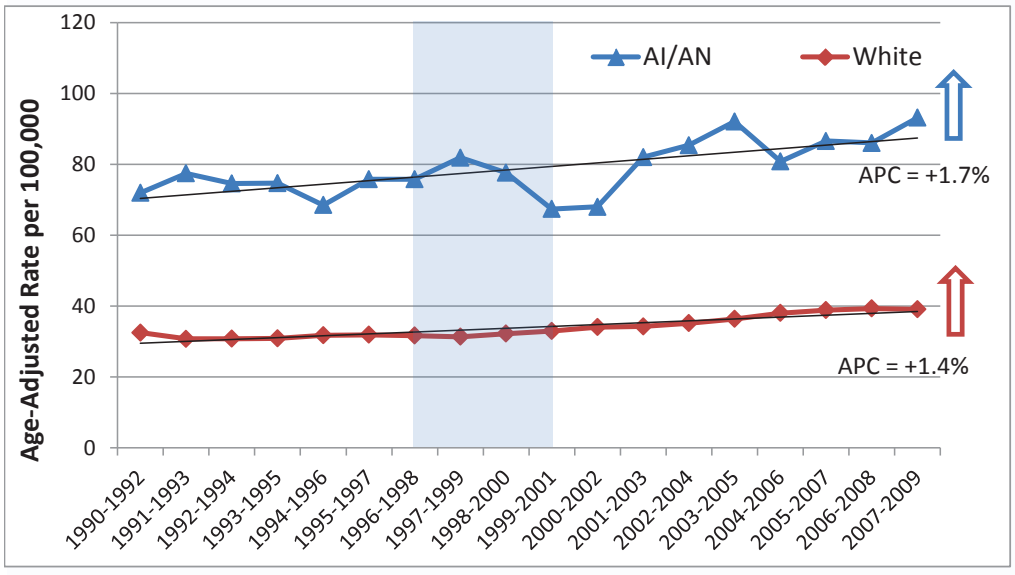


Figure 6. Unintentional injury mortality rates, Washington, 1990-2009, 3-year rolling averages



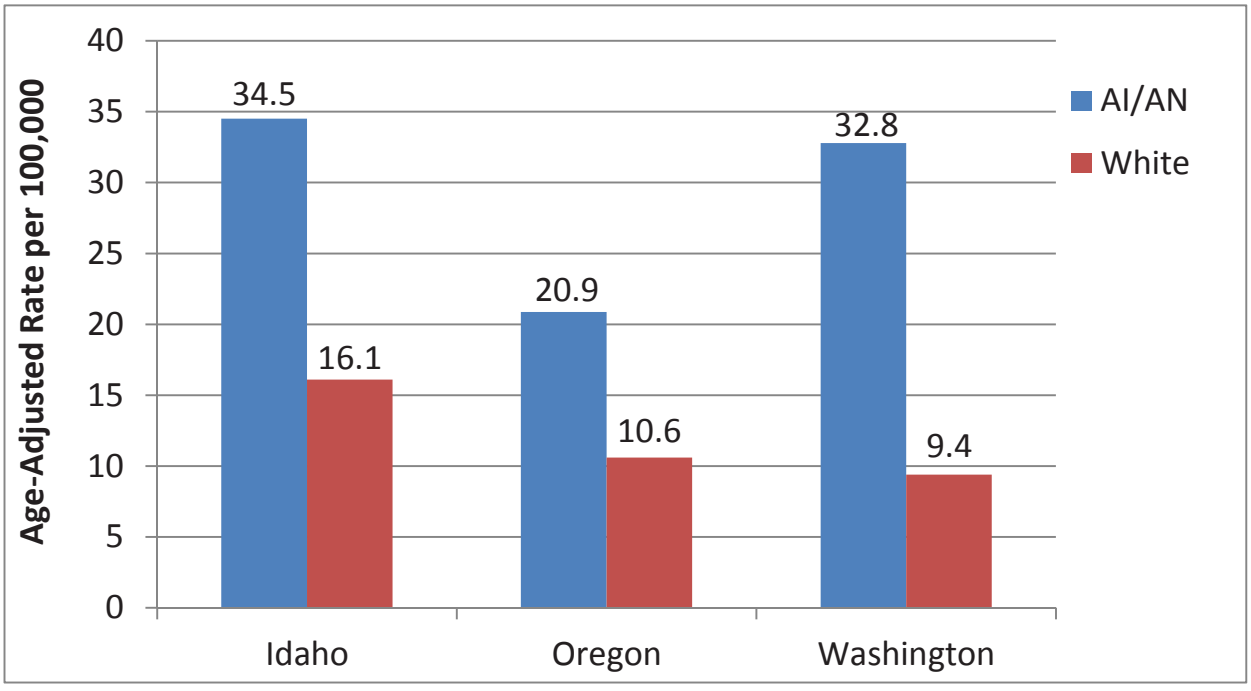
Note on trend data

Note that cause of death coding on death certificates underwent a change from ICD-9 to ICD-10 between 1998 and 1999. Data shown in the trends charts in this report have not been adjusted to reflect this change, however the blue shaded area highlights where the change occurred.

Comparability ratios for the broad categories reported here show that the change did not have a large impact for these statistics, however any abrupt changes between 1998 and 1999 should be interpreted with caution.

Motor vehicle crashes were the largest contributor to AI/AN unintentional injury deaths, and across all three states rates were an average of 2.5 times higher for AI/ANs than whites. Idaho had the highest rates of MVC deaths for AI/ANs, while Washington showed the largest disparity (Figure 7).

Figure 7. Motor vehicle crash mortality, 2006-2009



Again, males were at higher risk for MVC deaths than females (Figure 8). Rates were considerably higher for AI/ANs across all age groups, with the largest disparity among ages 10-29. AI/AN children of car seat age, 0-9 years old, experienced MVC mortality rates at about two and a half times those of whites (Figure 9).

Figure 8. Motor vehicle crash mortality by sex, 2006-2009

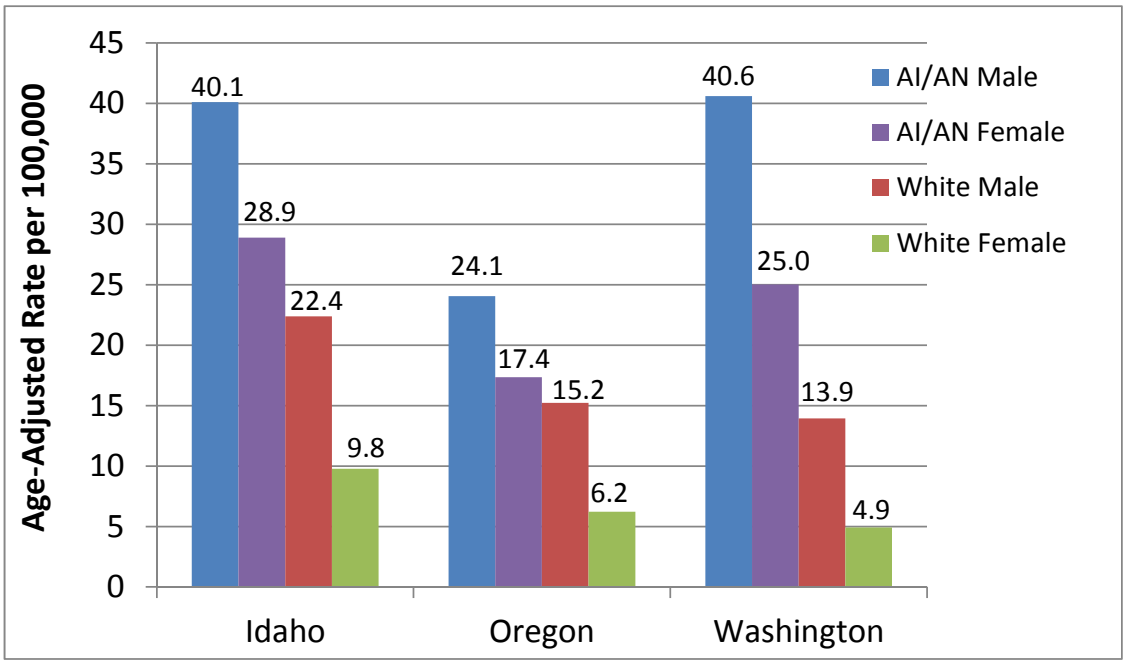
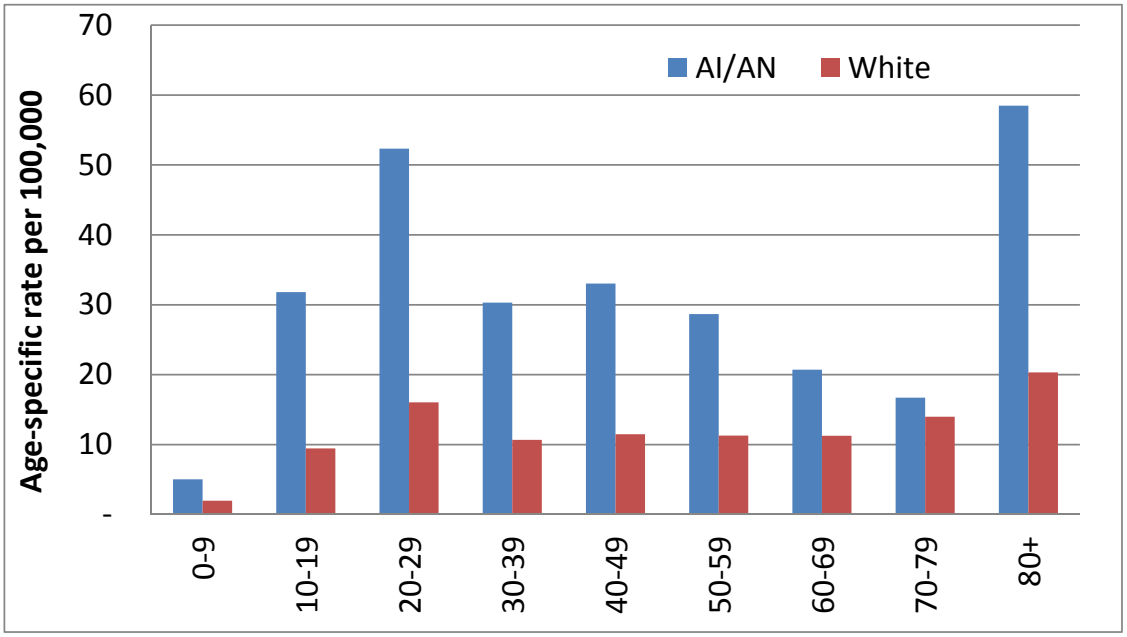
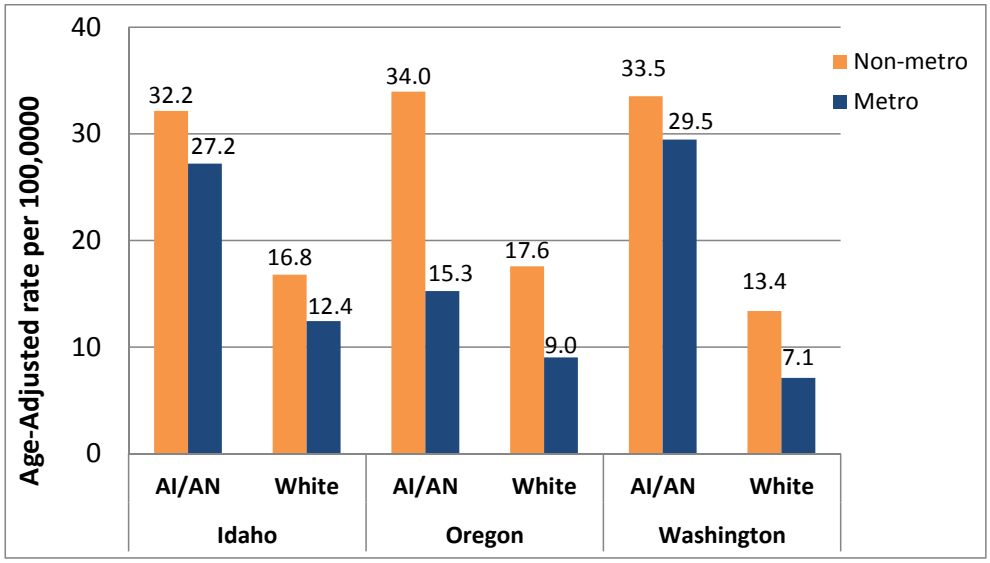


Figure 9. Motor vehicle crash mortality by age, 2006-2009



Overall, MVC mortality was higher in non-metropolitan areas compared with metropolitan counties[6], which is consistent with national data[7]. AI/ANs driving in rural parts of Washington were the most at risk. The disparity between urban and rural MVC deaths was most pronounced for AI/ANs living in Oregon, where AI/ANs driving in rural areas were more than twice as likely to experience a fatal crash (Figure 10).

Figure 10. Motor vehicle crash mortality by metro/non-metro counties, 2006-2009



Focus on Community Programs

NPAIHB's **Native Children Always Ride Safe (Native CARS)** study is a collaboration between six Northwest Tribes, the NPAIHB and the University of Washington's Harborview Injury Prevention and Research Center, funded by the National Institute on Minority Health and Health Disparities. The goal of the Native CARS study is to design, implement and test the effectiveness of tribal interventions to improve the use of child safety seats among AI/AN children. Working in partnership with Tribes and using tribal data, Native CARS seeks to determine the barriers to and facilitators of proper and consistent child safety seat use. This information is then used by the study partnership to design community level intervention programs. The evaluation of these intervention programs utilizes child safety seat use data collected at baseline and following the intervention period.

For more information please contact Tam Lutz, Native CARS Project Director at 503 416 3271 or tlutz@npaihb.org nativecars@npaihb.org.

View our web page at: http://www.npaihb.org/epicenter/project/native_cars_study

6 By county of occurrence, defined by NCHS urban rural classification scheme http://www.cdc.gov/nchs/data_access/urban_rural.htm

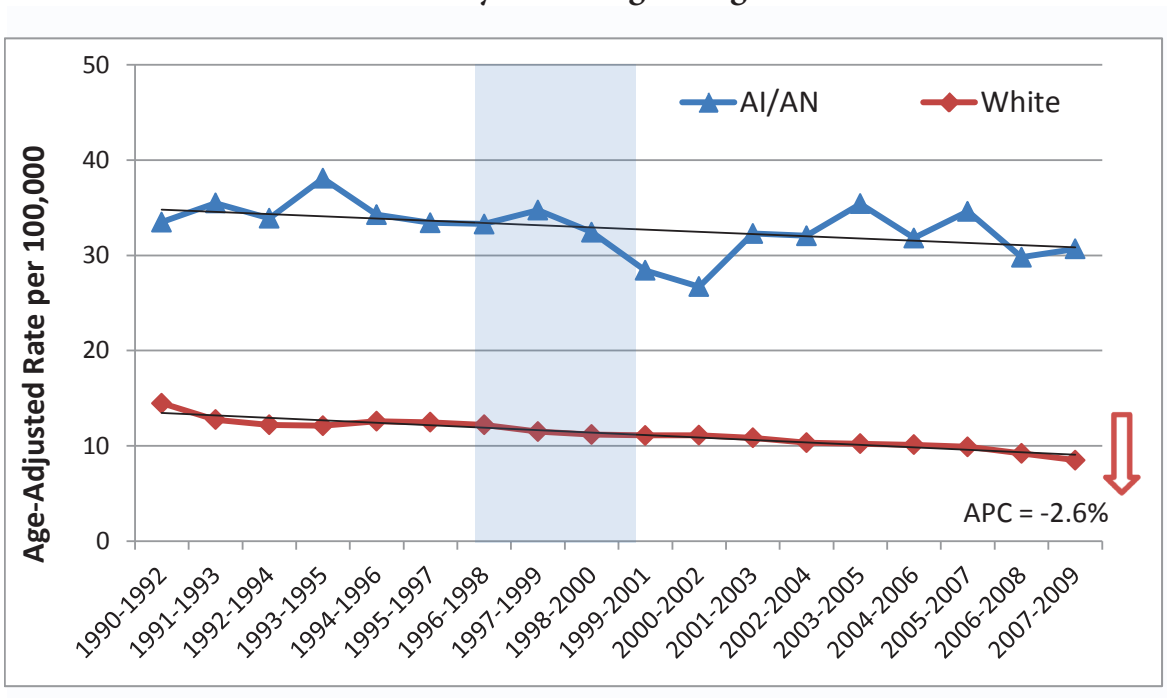
7 National Highway Traffic Safety Administration. Traffic safety facts, 2009 data: rural/urban comparison. Washington, DC: US Department of Transportation, National Highway Traffic Safety Administration; 2011. Publication no. DOT-HS-811-395.

Trend data from Washington revealed rates of MVC deaths among AI/ANs which were, on average, about three times higher than whites. This disparity increased throughout the time period as whites experienced a significant decrease in MVC mortality (APC=-2.6%) while AI/AN rates did not change significantly (Figure 11). This suggests that there may be some effective public health interventions in motor vehicle safety that have impacted the white population but have not yet made it to the AI/AN population.

Contributing factors suggested by tribal members may include rural roads, distance from hospitals and time spent in the car. Drawing on the multiple contributing causes of death, we also found that AI/AN MVC deaths were more likely to have alcohol as a contributing factor[8] than white MVC deaths. Across all three states, about eight percent of AI/AN MVC deaths were associated with alcohol compared to five percent of white MVC deaths. It should be noted that these percentages are lower than those found from other sources such as the Fatal Accident Reporting System (FARS), which are probably more reliable in estimating alcohol impairment during fatal crashes than the death certificate coding. A National Highway Traffic Safety Administration report using FARS data from 1999-2004 estimated as many as 57% of AI/AN drivers killed in MVCs had blood alcohol levels over 0.08%, compared with about a third of non-Hispanic white drivers[9]. Using the death certificate data again, we did find that trend data in Washington showed a strong decreasing trend in alcohol associated MVC deaths for AI/ANs since 1990, along with a decrease in the race disparity.

Other potential explanations for the MVC death rate disparity seen here include lower seat belt and child safety seat use and more speeding among AI/ANs[10,11].

Figure 11. Motor vehicle crash mortality by race, Washington, 1990-2009, 3-year rolling averages



8 Underlying COD of MVC and at least one contributing COD of alcohol induced; see Table 3 for ICD codes.

9 Department of Transportation (US), National Highway Traffic Safety Administration (NHTSA). Race and Ethnicity in Fatal Motor Vehicle Traffic Crashes, 1999-2004. May 2006. DOT HS 809 956.

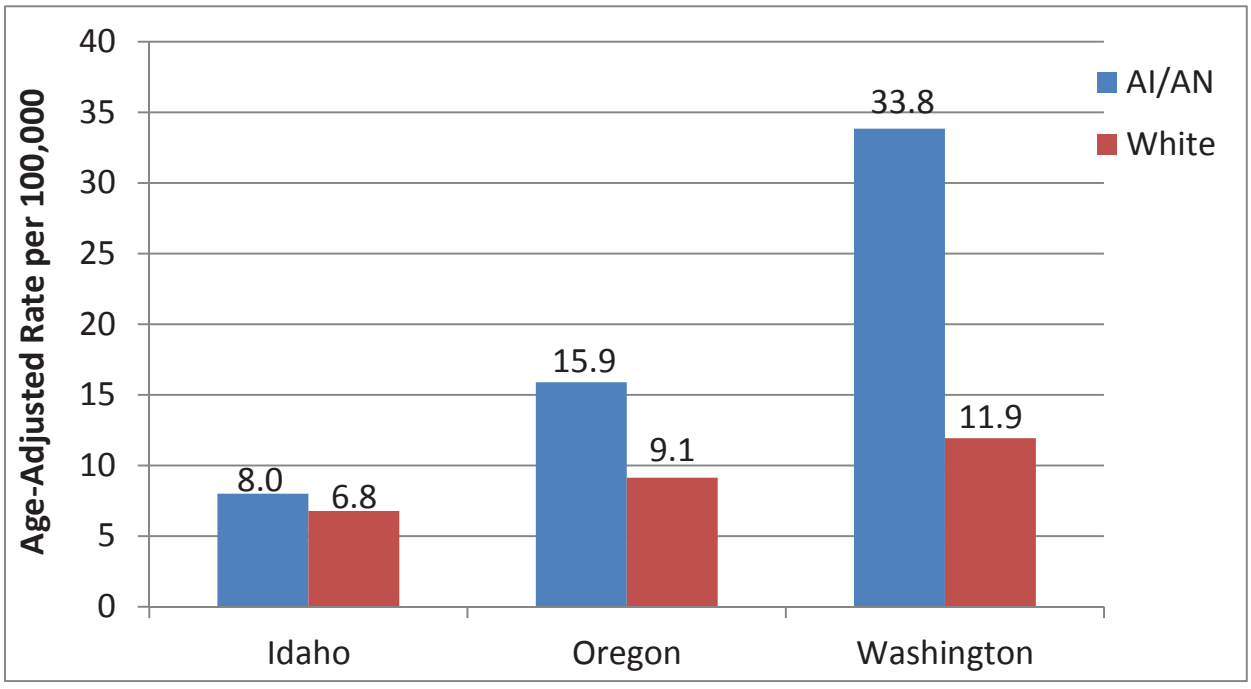
10 Department of Transportation (US), National Highway Traffic Safety Administration (NHTSA). Fatal Motor Vehicle Crashes on Indian Reservations, 1975-2002. April 2004. DOT HS 809 727.

11 Lapidus JA, Smith NH, Ebel BE, Romero FC. *Restraint use among northwest American Indian children traveling in motor vehicles.* Am J Public Health. 2005 Nov;95(11):1982-8. Epub 2005 Sep 29.

Accidental poisoning was the second leading cause of AI/AN unintentional injury deaths after motor vehicle crashes. By far the leading contributor to poisoning deaths was accidental drug and alcohol overdoses. Poisonings due to substances such as gas and vapors, pesticides, household chemicals, and other noxious substances made up less than 2% of poisoning deaths in both AI/ANs and whites and thus are not included in the following graphs.

Accidental drug and alcohol overdose deaths varied widely across the region, with rates for AI/ANs in Washington more than four times those in Idaho (Figure 12). Across all three states, though, AI/AN rates were higher than whites.

Figure 12. Accidental drug and alcohol overdose mortality, 2006-2009



In Idaho, accidental drug and alcohol mortality rates for men and women were nearly the same, while the other two states saw male rates outpacing females (Figure 13).

Both races showed a similar pattern across the age distribution, with a peak for accidental drug and alcohol overdose mortality occurring at middle age (Figure 14). AI/AN rates for the younger age groups were notably higher than whites in the same age ranges. AI/AN youth (10-19 years) died from accidental drug and alcohol exposure at rates more than four times higher than white youth.

Figure 13. Accidental drug and alcohol overdose mortality by sex, 2006-2009

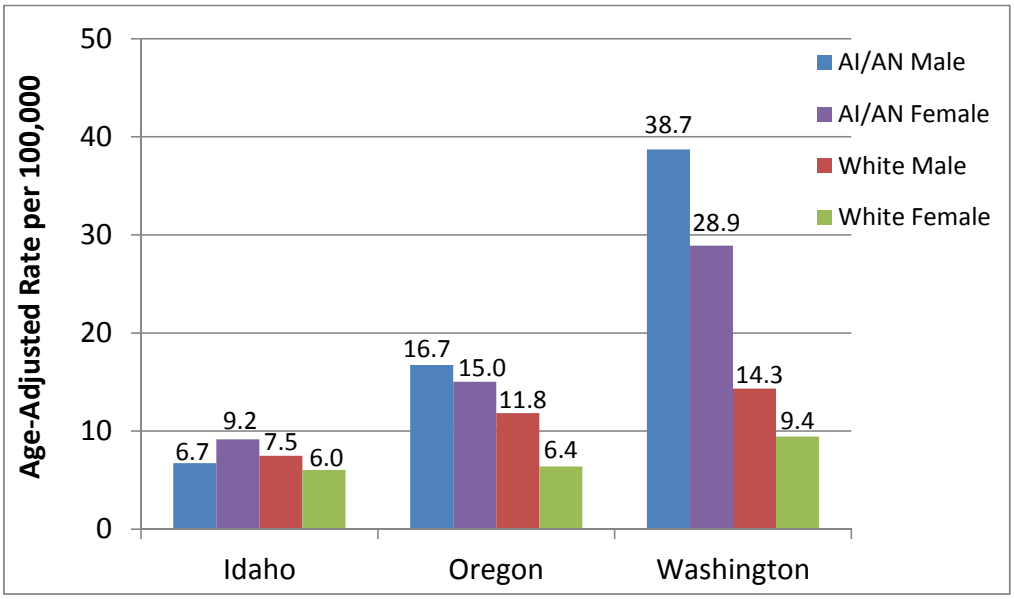
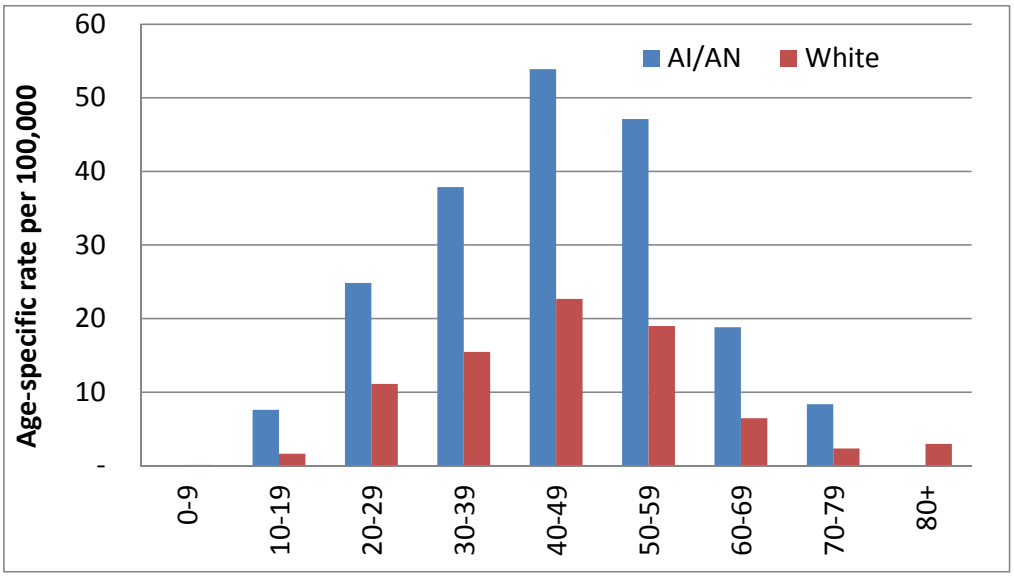


Figure 14. Accidental drug and alcohol overdose mortality by age, 2006-2009



Washington trend data showed that, since 1994, AI/AN rates of drug overdose deaths were higher than whites, and increasing more quickly (Figure 15). While both populations had a significant increase in drug overdose deaths over this time period, AI/AN rates increased an average of 14.6% per year compared with an annual increase of 10.7% for whites.

Since 1999, prescription drugs have outpaced illicit drugs as the most common type of drug overdose. Whites and AI/ANs have both seen steep increases in prescription drug overdose deaths, but AI/AN rates have increased at almost twice the pace (APC = 16.2% versus 8.7% for Whites). Most worrisome are deaths due to prescription opioid pain relievers (OPR), from which Washington AI/ANs have seen a 22% increase annually since 1999.

Table 3 summarizes the types of drug overdose deaths from each state, including both deaths with underlying cause of drug or alcohol, and those with contributing cause of drug or alcohol. For example, a death with an underlying cause of motor vehicle crash may have had alcohol as a contributing factor - this would be included in the row "alcohol associated deaths". Note that "drug associated" and "alcohol associated" include deaths from both short term and long term substance use, but exclude drug deaths that are not related to substance abuse such as medical errors or allergic reactions.

Figure 15. Accidental drug overdose mortality, Washington, 1990-2009
3-year rolling averages

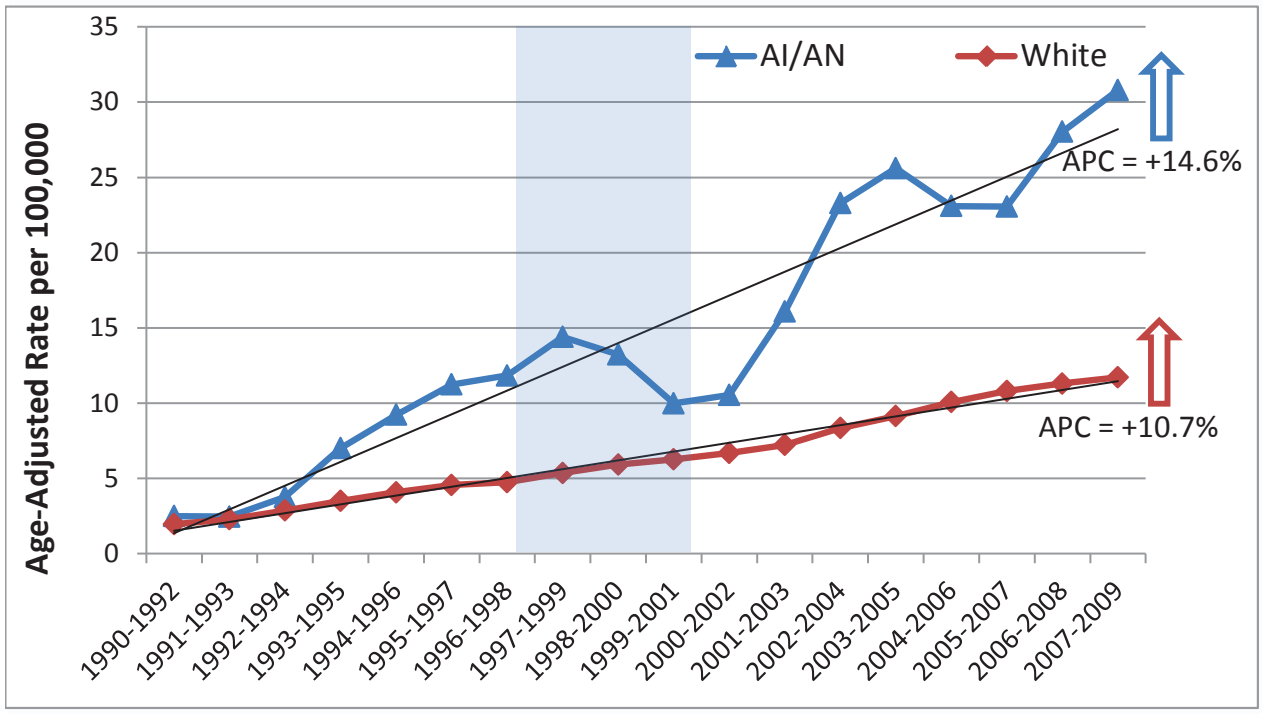


Table 3. Types of drug overdose deaths by state, AI/ANs, 2006-2009

	Idaho		Oregon		Washington	
	N	% of all deaths	N	% of all deaths	N	% of all deaths
Drug OD deaths (underlying only)[1]	12	2.1%	49	3.1%	179	5.1%
Drug associated deaths[2]	12	2.1%	54	3.4%	200	5.6%
Prescription drugs contributing[3]	5	0.9%	23	1.4%	139	3.9%
Prescription OPR contributing[4]	--	<1%	16	1.0%	105	3.0%
Illicit drugs contributing[5]	0	0.0%	16	1.0%	76	2.1%
Alcohol associated deaths[6]	157	28.0%	563	35.3%	1015	28.7%
Total drug & alcohol associated	168	30.0%	591	37.0%	1107	31.3%
Total deaths	560		1597		3536	

Note that columns do not add up due to multiple drugs contributing to a single death and crossover in the definitions

1 Underlying COD X40--X44, X60--X64, X85, or Y10--Y14

2 Underlying or Contributing COD X40--X44, X60--X64, X85, Y10--Y14. F11.0-F19.9, R78.1-R78.5, T36- T39, T40.1 -T40.9, T41.0-T43.9, T44.0-T50.9

3 Contributing COD T36--T39, T40.2--T40.4, T41--T43.5, and T43.7--T50.8, any underlying COD

4 Contributing COD T40.2--T40.4, any underlying COD

5 Contributing COD T40.1, T40.5, T40.7--T40.9, and T43.6, any underlying COD

6 Underlying or Contributing COD—F10, G31.2, G62.1, G72.1, I42.6, K29.2, K70, K85.2, K86.0, R78.0, X45, X65, E24.4, Y15

Focus on Community Programs

NPAIHB has partnered with the National Institute on Drug Abuse and the Native American Research Centers for Health to develop the capacity to collect and use health data to improve health status and reduce health disparities related to substance use. **The Monitoring the Abuse of Drugs (MAD)** project sponsors capacity development work in four American Indian communities in the Pacific Northwest.

Utilizing community based participatory research methods, this four-year project assists Tribes in (1) developing a drug problem index that monitors and tracks community impacts related to the use of drugs and alcohol in the community; (2) assessing current capacity for treating substance use disorders in the community and implementing quality improvement interventions; and (3) interviewing in-treatment and out-of-treatment drug users to estimate the level of substance use disorders present in the community.

The long-term goal of the Monitoring the Abuse of Drugs project is to identify and understand the unique experiences that American Indian communities face with regard to substance use and to assist communities in building skills to address these experiences. For more information please contact the MAD Project Director, Ronda Metcalf, at rmetcalf@npaihb.org.

Focus on Community Programs

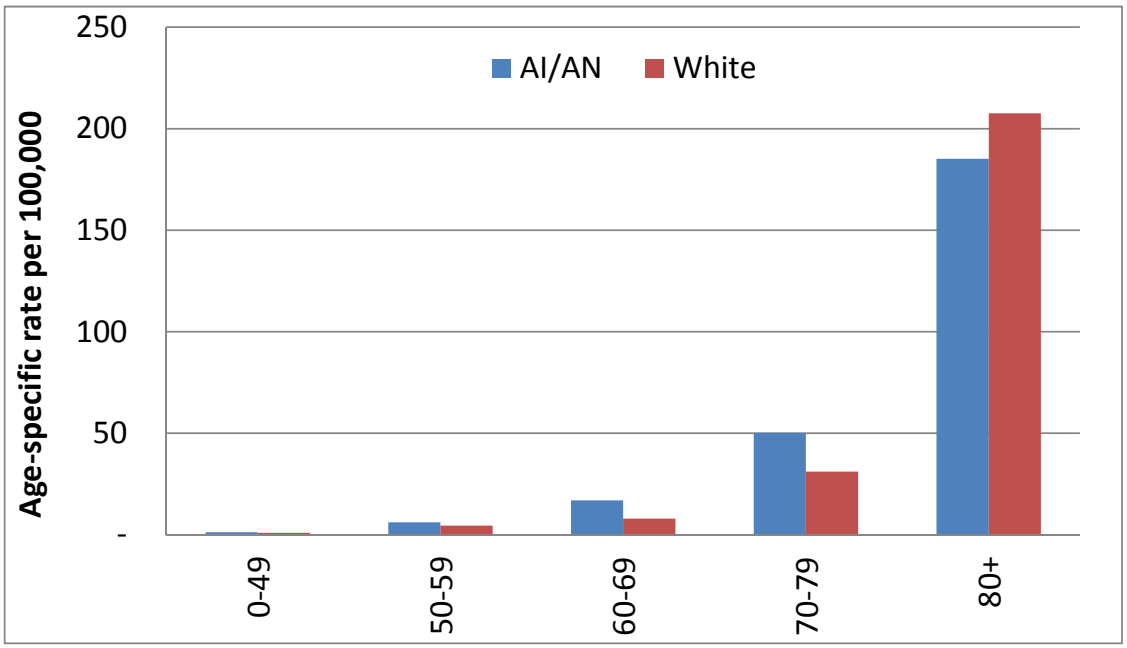
NPAIHB's **THRIVE project (Tribal Health: Reaching Out InVolves Everyone)** is also working with the Northwest Tribes to prevent drug and alcohol abuse. In 2010 the project hosted meetings with regional partners to develop a 5-year strategic plan: Northwest Tribal Substance Abuse Action Plan. The plan is now being used to guide program planning, catalyze community outreach efforts, and foster a coordinated response to substance abuse in our Northwest Tribes.

Acting upon one of the goals of the plan - to "increase knowledge and awareness about substance abuse"- the THRIVE project developed a national media campaign focusing on Alcohol and Drug prevention for AI/AN teens and young adults. The campaign, Strengthen My Nation, was funded by the Indian Health Service's Meth & Suicide Prevention Initiative, and was developed with feedback from hundreds of teens, parents, and health educators from throughout the U.S. The campaign includes posters, brochures, fact sheets, and public service announcements on television and radio. All of the campaign materials are available on the NPAIHB website: http://www.npaihb.org/epicenter/project/mspi_prevention_media_resources/

While rates of death due to falls were lower than the other causes of unintentional injury examined thus far, among AI/AN elders (60 years and older), falls were the leading cause of injury deaths. Data from California show that AI/AN elders fall more than any other racial/ethnic group, and that those ages 55-64 are at high risk even though elder programs often focus on individuals over age 65[12] .

In the Northwest, there was not a large disparity seen between AI/ANs and whites in mortality due to falls, although AI/AN rates were marginally higher (12.5 vs. 10.4 per 100,000). Males were at slightly higher risk than females in each of the three states.

Figure 16. Accidental fall mortality by age, Northwest states, 2006-2009



The rates of mortality due to falls rose dramatically for AI/ANs over the age of 70, while they were very low among those younger than 70 (Figure 16). AI/ANs who died from falls were about seven years younger than their white counterparts in Oregon and Washington. In Idaho the mean age at death was slightly older, but this was based on a very small number of cases and so should be interpreted with caution (Table 4).

Table 4. Age at death due to falls, 2006-2009

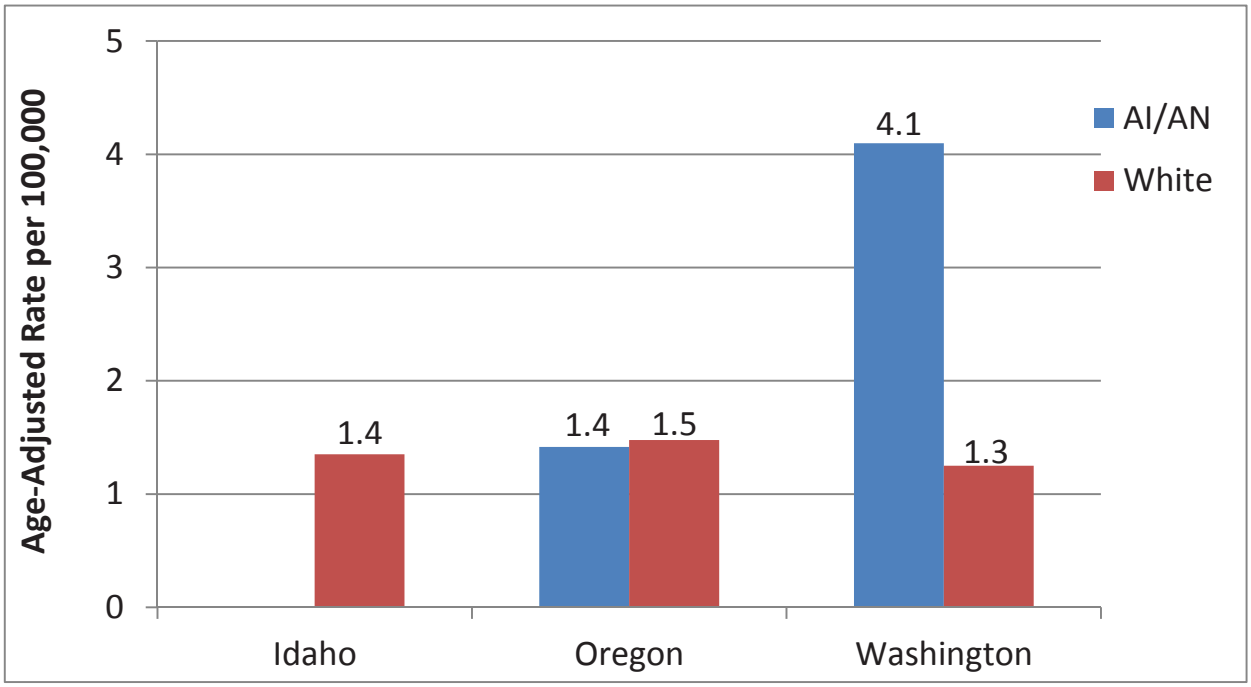
	AI/AN		White	
	Mean	*Median*	*Mean*	*Median*
Idaho	82.8	88	78.6	84
Oregon	66.1	71	82.0	86
Washington	69.9	74	79.7	84

12 Satter DE, Wallace SP, Garcia AN, Smith LM. Health of American Indian and Alaska Native Elders in California. Los Angeles, CA: UCLA Center for Health Policy Research, 2010.

Accidental drowning rates were low compared to other causes of unintentional injury. On average in the Northwest, there were about 14 drowning deaths per year among AI/ANs (55 deaths from 2006-2009). Overall, the accidental drowning rate for Northwest AI/ANs was slightly less than 2 per 100,000, but this varied between the states (Figure 17).

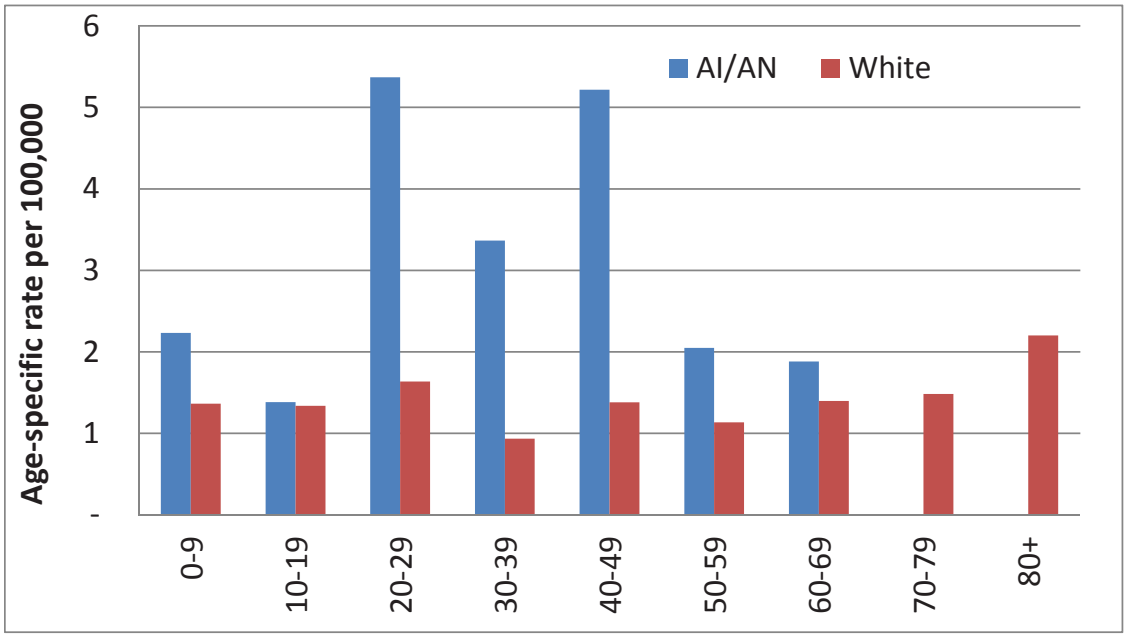
During this time period in Idaho there were no AI/AN accidental drowning deaths reported. The highest rate was seen in Washington at 4.1 per 100,000, which was 3.2 times the rate for the white population.

Figure 17. Accidental drowning mortality, 2006-2009



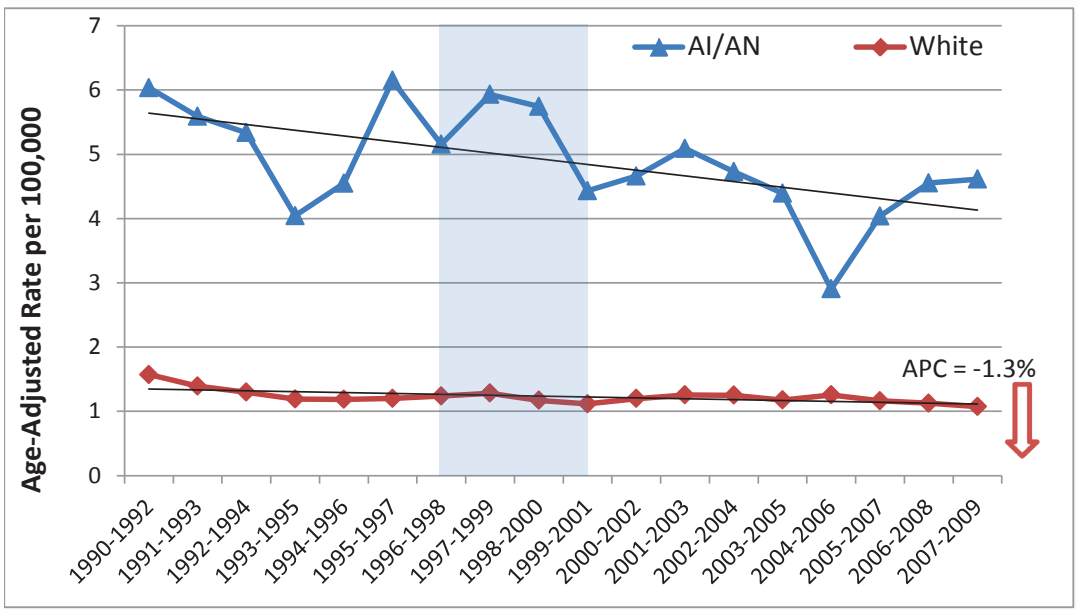
Young adult AI/ANs aged 20-29 had the highest rates of accidental drowning, with another smaller peak occurring among those ages 40-49 (Figure 18). AI/AN children under age ten were also at risk, with rates more than 60% higher than whites among children in this age range. Due to small numbers, however, these age-specific rates are unstable and should be interpreted with caution.

Figure 18. Accidental drowning mortality by age, 2006-2009



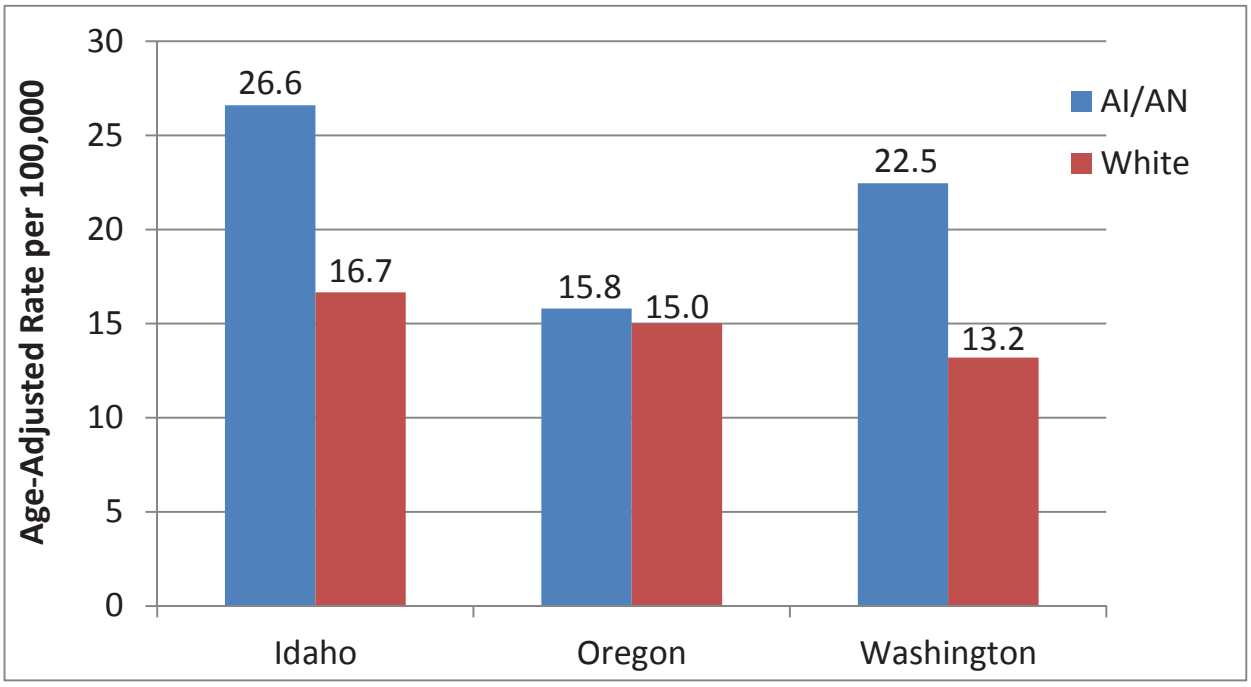
Drowning rates in Washington appear to have decreased for AI/ANs over the past 20 years, although the trend was not statistically significant (Figure 19). Rates for the white population decreased at a small but statistically significant rate of 1.3% per year.

Figure 19. Accidental drowning mortality, Washington, 1990-2009, 3-year rolling averages



Suicides accounted for about one-fifth of all AI/AN injury deaths in the region. Idaho had the highest rates of AI/AN suicide at 27 per 100,000 while Oregon had the lowest at 16 per 100,000 (Figure 20). AI/AN rates were 60-70% higher than rates for whites in both Idaho and Washington, but in Oregon there was little difference between the races.

Figure 20. Suicide mortality, 2006-2009



Male AI/ANs were much more likely to die of suicide than females; the largest difference was seen in Idaho where male AI/AN suicide rates were more than four times higher than females (Figure 21). While the rates of completed suicides are much higher for males, it should be noted that several studies have found that females are more likely to attempt suicide than males. [13,14]

Figure 21. Suicide mortality by sex, 2006-2009

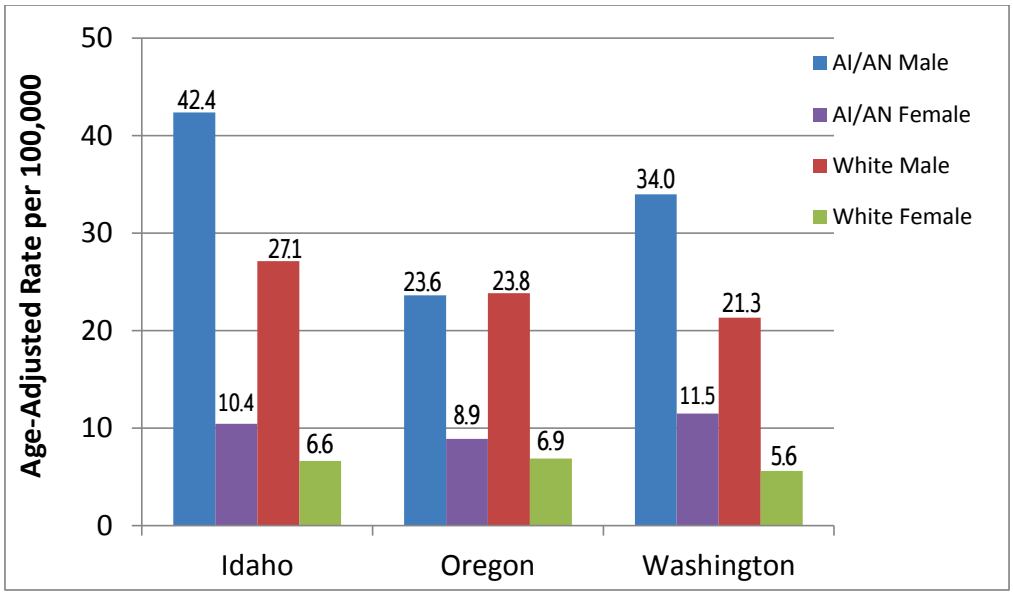
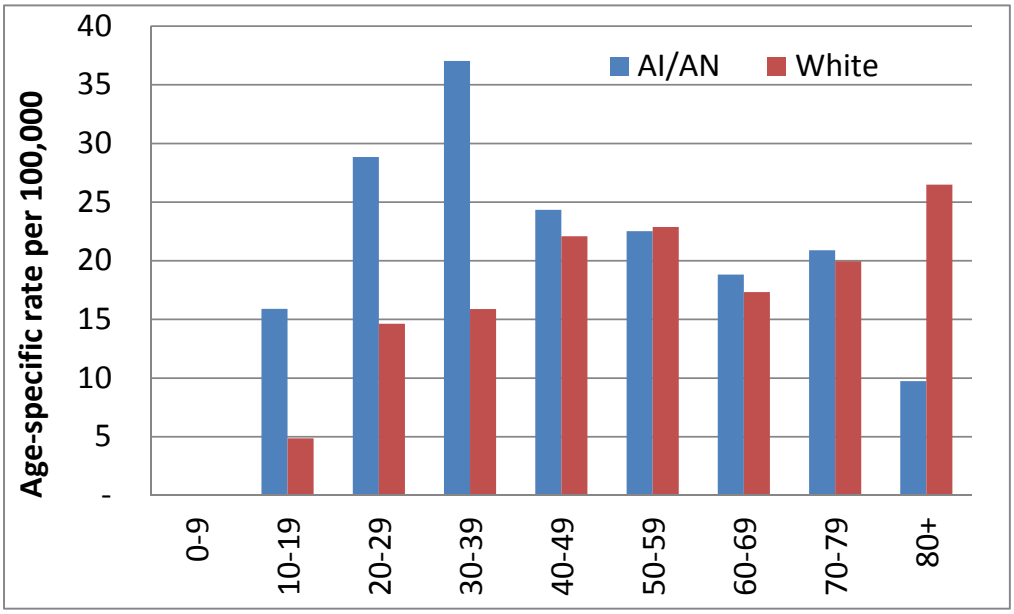


Figure 22. Suicide mortality by age, 2006-2009

While the majority of AI/AN suicides occurred in the young adult range, 20-39, the largest disparity between AI/ANs and whites was seen among youth. Rates of suicide among AI/ANs 10-19 years old were 3.3 times higher than those seen among white youth in the same age range (Figure 22).



13 Dorgan BL. The Tragedy of Native American Youth Suicide. Psychological Services 2010;7(3):213-218.
14 Alcantara C, Gone JP. Reviewing Suicide in Native American Communities: Situating Risk and Protective Factors within a Transactional-Ecological Framework. Death Studies 2007;31:457-477.

Nearly half of all AI/AN suicides were completed using firearms (Figure 23). Suffocation was the second most common mechanism (primarily hanging), and this method was more common among AI/ANs while poisoning (primarily drug overdose) was more common among whites. Among AI/ANs, the use of firearms and poisoning increased with age, while suffocation decreased (Figure 24).

Figure 23. Suicide mechanism by race, Northwest states, 2006-2009

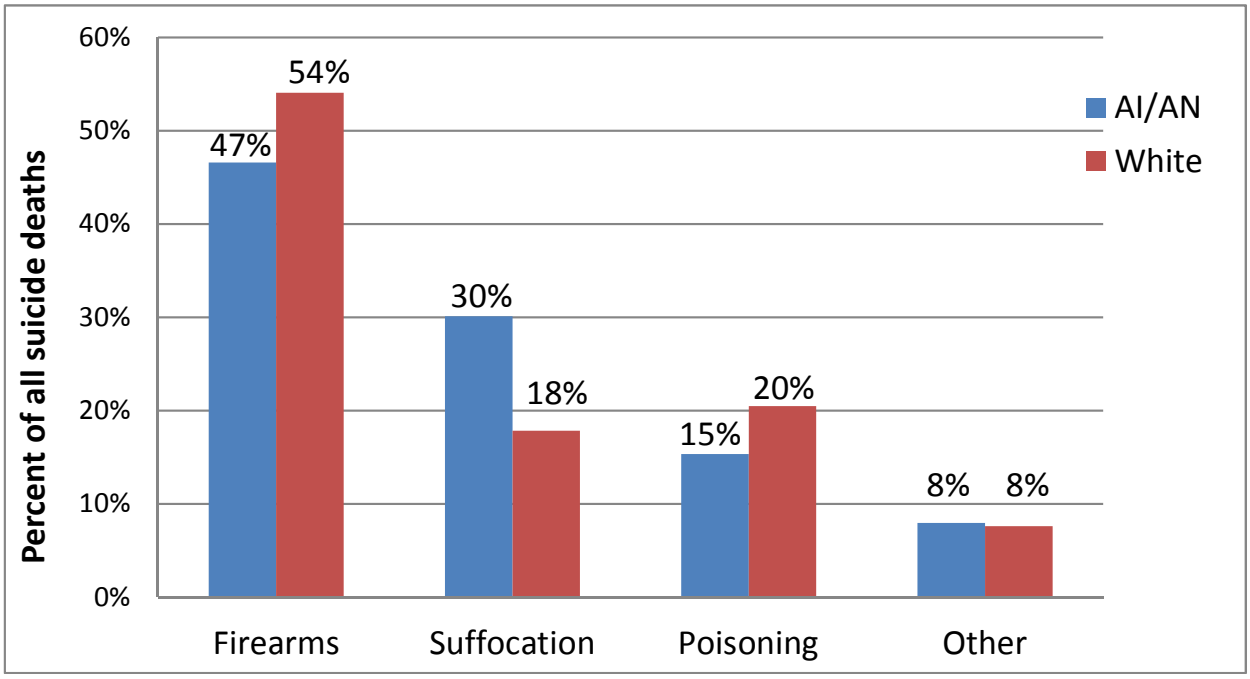
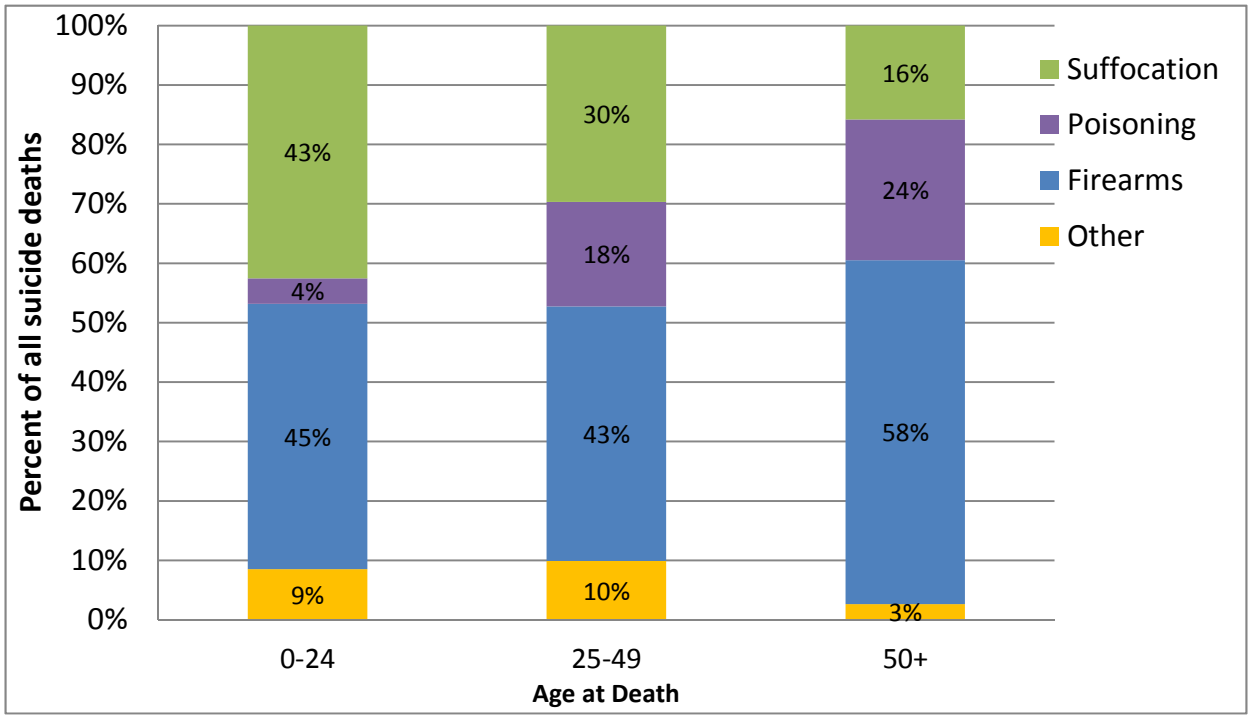
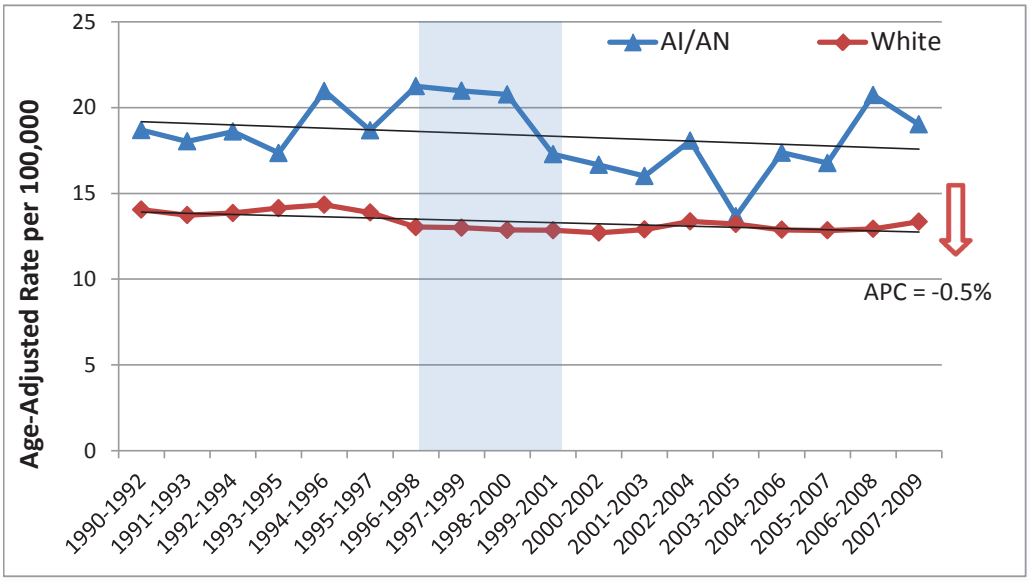


Figure 24. Suicide mechanism by age, Northwest AI/ANs, 2006-2009



Washington trend data showed that suicide rates were rather stable over the twenty year period 1990-2009 (Figure 25). Whites did experience a small but significant decrease in suicides (annual decrease of 0.5%) while AI/AN suicide rates did not change significantly.

Figure 25. Suicide mortality, Washington, 1990-2009
3-year rolling averages



Focus on Community Programs

The NPAIHB is working with the Northwest Tribes to prevent suicide. In 2008 it hosted meetings with regional partners to develop a 5-year strategic plan: Northwest Suicide Tribal Action Plan. The plan helped the NPAIHB secure funding from the Indian Health Service's Meth & Suicide Prevention Initiative – which helped create the **THRIVE project (Tribal Health: Reaching Out InVolves Everyone)**. Since then, the THRIVE project has provided training and technical assistance to the Northewest tribes on ways to prevent suicide.

To increase community awareness about the problem, the project developed a suicide media campaign in 2010, and in 2011 it expanded the campaign to focus on suicide and youth bullying. Both campaigns were funded by the Indian Health Service's Meth & Suicide Prevention Initiative. The campaigns materials are available on the NPAIHB website: http://www.npaihb.org/epicenter/project/mspi_prevention_media_resources/

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Homicide rates among Northwest AI/ANs ranged from 3.6 times higher than whites in Washington to 3.3 times higher in Idaho (Figure 26). Washington AI/ANs had the highest homicide rate in the region at 9.5 per 100,000. Males were more likely to die due to homicide in each state and among both race groups (Figure 27). There were no AI/AN female homicides in Idaho in this time period.

Figure 26. Homicide mortality, 2006-2009

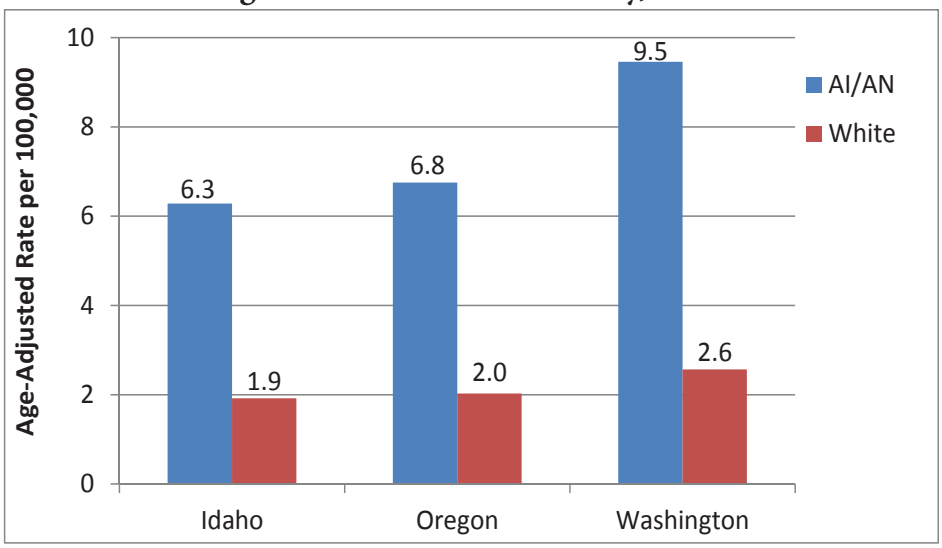
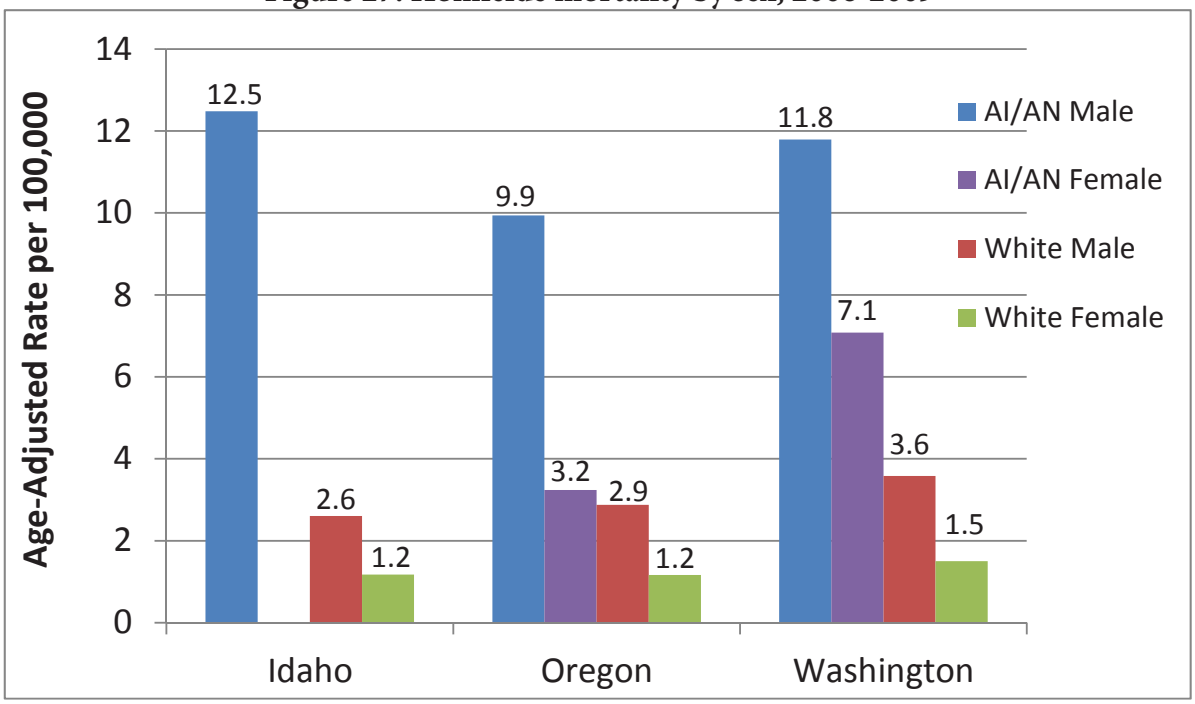
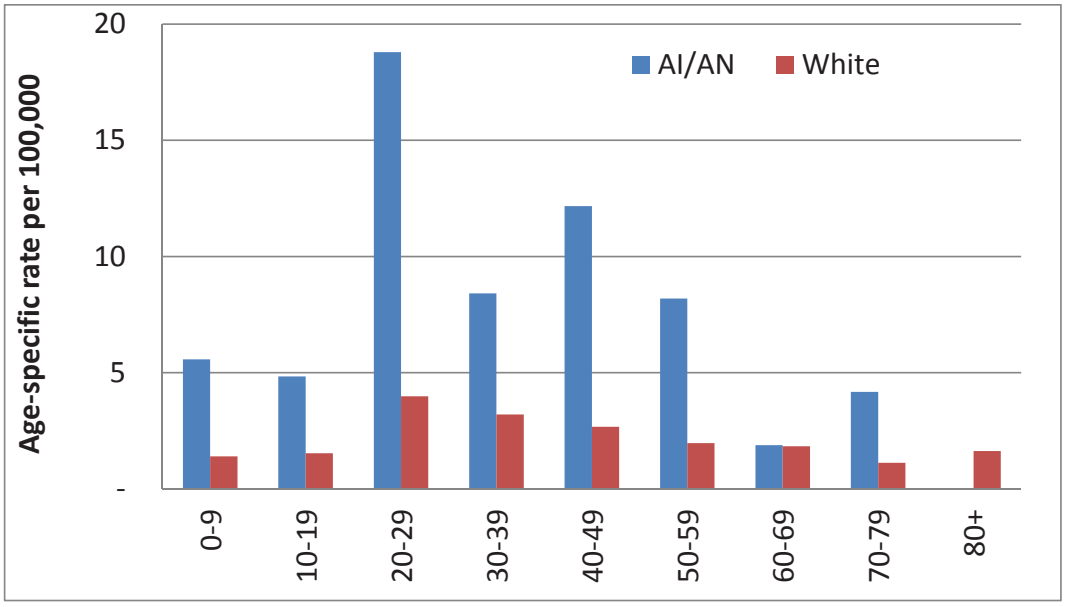


Figure 27. Homicide mortality by sex, 2006-2009



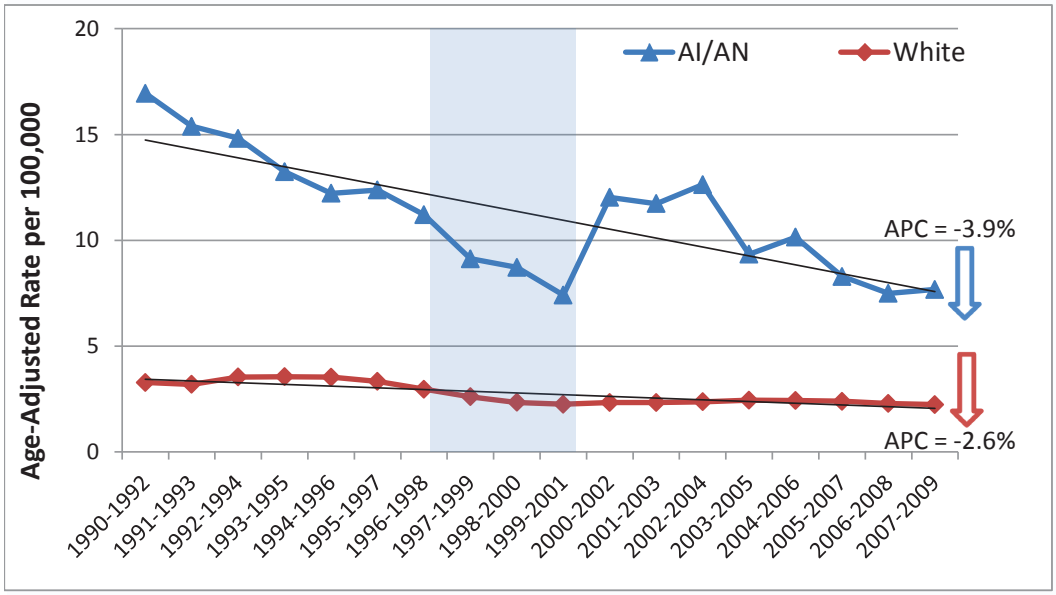
For both races, homicide rates peaked among the 20-29 year old age group (Figure 28). This age group also experienced the greatest disparity, with AI/ANs at rates nearly five times higher than whites. Homicide rates among children under 20 were also strikingly higher compared to whites and while the number of deaths was small, there were about 3.5 times more homicides among AI/AN youth.

Figure 28. Homicide mortality by age, 2006-2009



Both racial groups experienced a significant decrease in homicide mortality over time in Washington (Figure 29). AI/AN rates dropped more quickly, an average 3.9% decrease per year, compared with whites (2.6% decrease per year). Across the 20-year period, homicide rates were consistently higher for AI/AN men than AI/AN women, but decreased significantly for men (APC = -4.2%), so the gap between men and women was seen to be closing in recent years (data not shown on chart).

Figure 29. Homicide mortality, Washington, 1990-2009, 3-year rolling averages



Mortality represents the tip of the iceberg of underlying health conditions. Each death represents many more who are alive today with chronic depression, substance abuse disorders and chronic disease. Moreover, deaths that affect disproportionately the youngest community members have the greatest impact in terms of years of potential life lost. The information contained in this report focuses a spotlight on some of the most important causes of mortality that impact AI/AN communities.

These data can be used by tribes, states, community organizations, and policy makers to identify health needs in the community, set priorities for action, and develop appropriate policies and services.

Limitations

Race information for American Indians and Alaska Natives is often misclassified on death certificates, leading to under-reported and inaccurate mortality estimates. Through the IDEA-NW Project, we corrected inaccurate race coding for AI/ANs on Idaho, Oregon, and Washington death certificates. This resulted in a more complete and accurate picture of mortality for Northwest AI/ANs. However, our methods are unable to completely identify all AI/AN deaths, and racial misclassification is likely to persist for AI/ANs who do not receive care from IHS or tribal clinics, particularly those living in urban areas.

This report reveals many mortality disparities experienced by Northwest AI/ANs. Key findings include:

- Racial misclassification of AI/ANs on death certificates ranged from 8% in Idaho to 13% in Oregon. Mortality measures would have been substantially under-estimated if misclassification hadn't been corrected.
- AI/ANs died on average 14 years younger than their white counterparts in each of the three Northwest states.
- AI/ANs had proportionally more deaths from unintentional injuries, diabetes, and suicide and fewer deaths from heart disease and cancer compared with their white counterparts.
- Motor vehicle crash deaths did not show any significant change over a recent 20-year period for Washington AI/ANs, but during this same time rates decreased significantly for Washington whites.
- Homicide rates were low across the Northwest but AI/AN rates were still several times higher than whites, especially among young children, adolescents and young adults.
- Mortality patterns differed by state, for example:
    - Idaho AI/ANs had the highest rates of suicide and motor vehicle crash mortality and relatively low mortality from drug and alcohol overdoses.
    - Washington AI/AN males had the highest rates of unintentional injury deaths.
    - A large disparity was seen in accidental drug and alcohol overdose deaths for Washington AI/ANs; rates were more than 4 times higher than Idaho AI/ANs.
    - AI/ANs in Oregon had the lowest suicide rates of the Northwest AI/AN population; the AI/AN rate in the state was not substantially different from that for Oregon whites.

NPAIHB and our partners are involved in several projects focused on reducing the disparities documented in this report and elsewhere, and improving the overall quality of life of Northwest AI/ANs.

Just as mortality patterns differ by state and region, variations are likely to exist between different Tribes within the Pacific Northwest; such variations are largely hidden in this report. Tribe-level data are difficult to report due to small numbers of cases and the difficulties around identifying deaths specific to each Tribal population. NPAIHB's **IDEA-NW Project** welcomes opportunities to partner with Northwest Tribes on data issues, and may be able to provide you with health-related data specific to your community. Please contact the authors of this report (mhoopes@npaihb.org) for further discussion of your data needs.

Northwest Portland Area
Indian Health Board

Indian Leadership for Indian Health

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