Data Brief: Cardiovascular Diseases among American Indians and Alaska Natives in Washington State

Prepared by IDEA-NW, a project of the Northwest Portland Area Indian Health Board
Indian Leadership for Indian Health

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Cardiovascular diseases (CVDs) are a leading cause of illness and premature death in American Indian and Alaska Native (AI/AN) communities. The Northwest Portland Area Indian Health Board is working to reduce the burden of these diseases by providing the 43 federally recognized tribes of Idaho, Oregon, and Washington with data, training, and prevention resources. This data brief presents current data on cardiovascular diseases among AI/AN residents of Washington.

Prevalence

AI/AN in Washington have a higher prevalence of CVDs compared to the general population. From 2013-2015, 8% of AI/AN adults in Washington reported they had been diagnosed with heart disease, compared to 6% for all adults in the state.[1]

Risk Factors

The risk of developing CVDs increases with age, and is higher for people with a family history of these diseases. However, there are lifestyle risk factors that strongly influence the likelihood of developing or dying from CVDs. AI/AN in Washington are more likely to have these risk factors than the general population.

The most important risk factors for CVDs are:

- tobacco use
- high blood pressure
- high blood cholesterol levels
- diabetes

Among AI/AN youth in the 10th grade[1]:

- 70% did not get the recommended amount of physical activity a day for youths;
- 13% did not eat enough fruits and vegetables in their diet;
- 13% reported smoking cigarettes; and,
- 17% were obese.

Among AI/AN adults 18 years and older[1]:

- 48% did not get the recommended amounts of physical activity a week for adults;
- 13% did not eat enough fruits and vegetables in their diet;
- 39% reported smoking cigarettes;
- 31% reported being obese;
- 35% reported having high cholesterol; and,
- 32% reported having high blood pressure.

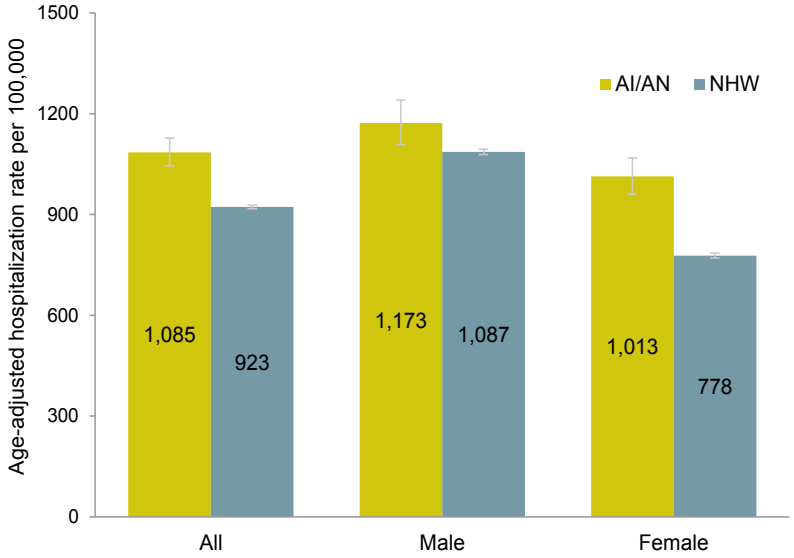
The most effective ways to lower CVD risk are to:

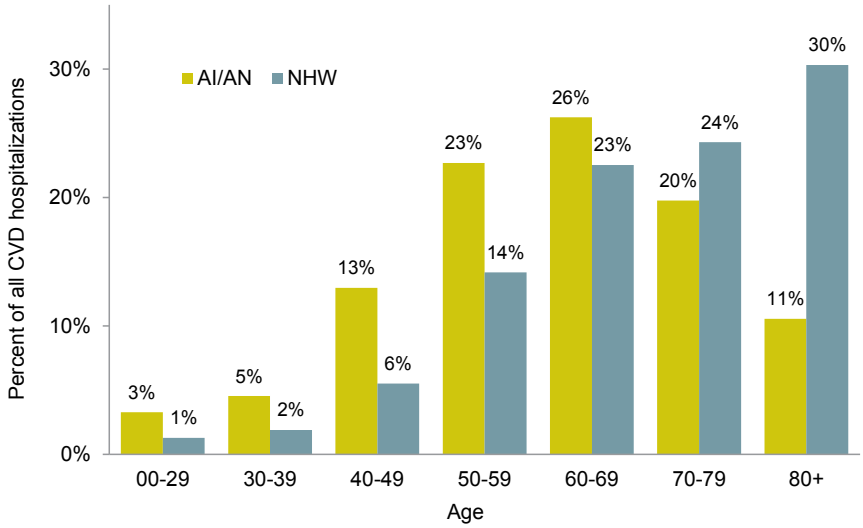
- stop smoking
- eat a healthy diet
- manage high cholesterol levels, high blood pressure, and diabetes;
- get enough physical activity
- maintain a healthy body weight

Hospitalizations

From 2012-2014, there were 3,395 hospitalizations for CVDs among the approximately 160,000 AI/AN living in Washington. CVDs were the primary diagnosis for 9% of all AI/AN hospitalizations and 15% of all non-Hispanic White (NHW) hospitalizations during this time period.

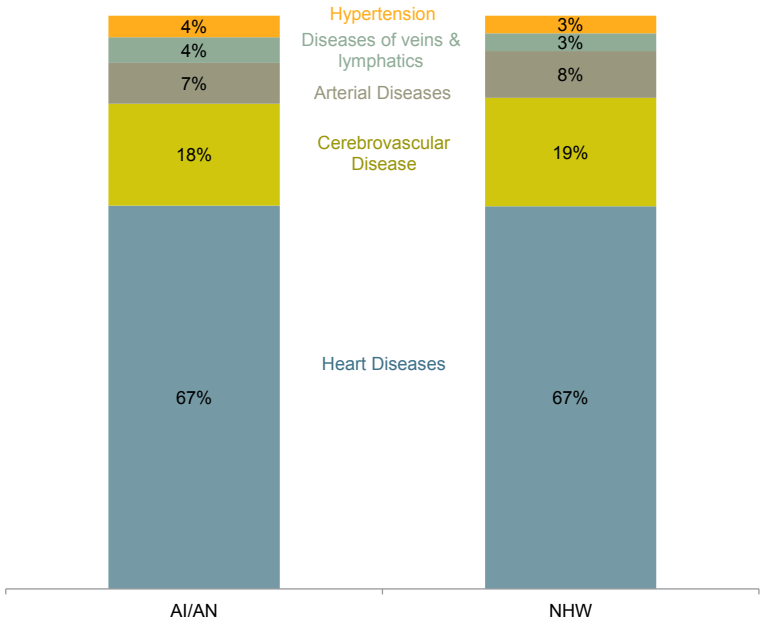
The age-adjusted CVD hospitalization rate for AI/AN in Washington was 18% higher than the rate for NHW. The hospitalization rate for AI/AN men was 8% higher than the rate for NHW men, while the rate for AI/AN women was 30% higher compared to NHW women. These differences were statistically significant.





The median age of AI/AN who were hospitalized for CVDs was 62, which was 9 years younger than the median age of NHW hospitalized for CVDs. Almost 70% of AI/AN CVD hospitalizations occurred before the age of 70, compared to 45% of NHW CVD hospitalizations. These differences were statistically significant.

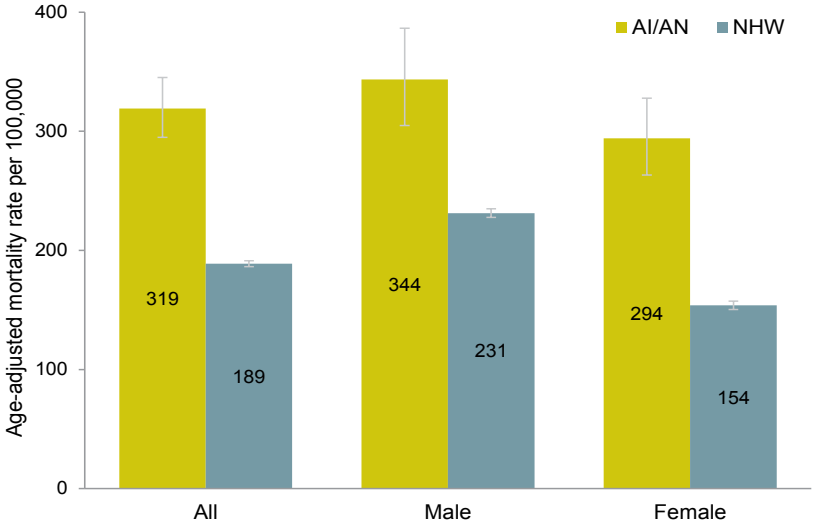
Heart diseases accounted for the majority (67%) of CVD hospitalizations for AI/AN and NHW in Washington. Cerebrovascular diseases were the second leading cause of CVD hospitalizations for both groups, followed by arterial diseases, diseases of the veins and lymphatic system, and hypertension.

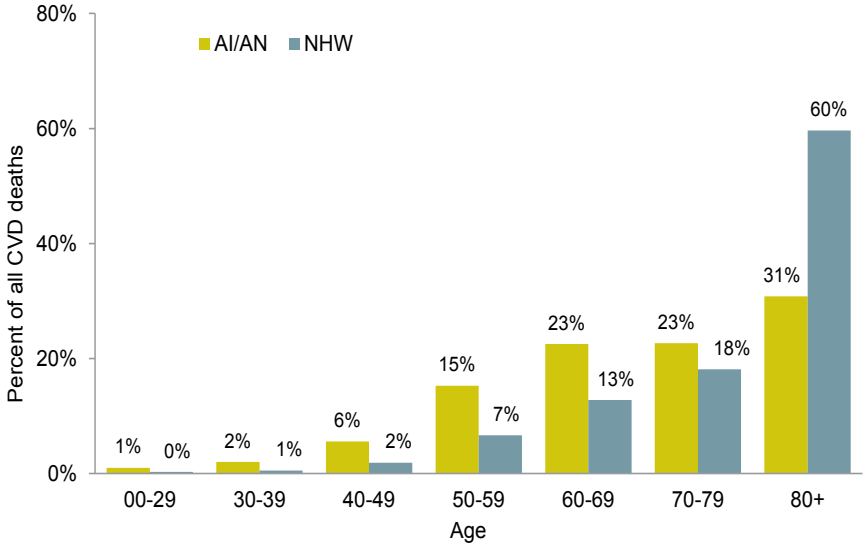


Mortality

CVDs were the leading cause of death for both AI/AN and NHW in Washington from 2013-2015. CVDs accounted for 785 of 3,406 (23%) deaths among Washington AI/AN and 38,505 of 138,218 (28%) deaths among Washington NHW.

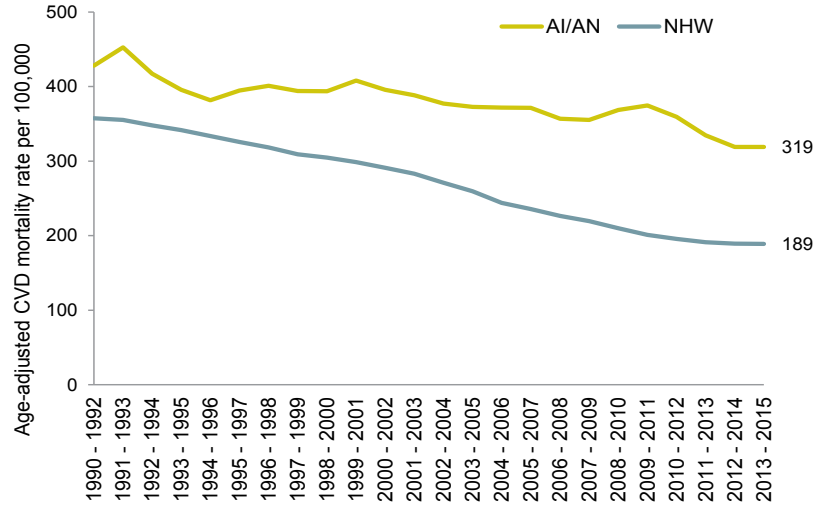
The age-adjusted CVD mortality rate for AI/AN in Washington was 70% higher compared to NHW in the state. The disparity was larger for females. AI/AN women's CVD mortality rate was 90% higher than the rate for NHW women, while the rate for AI/AN men was 50% higher. These differences were statistically significant.





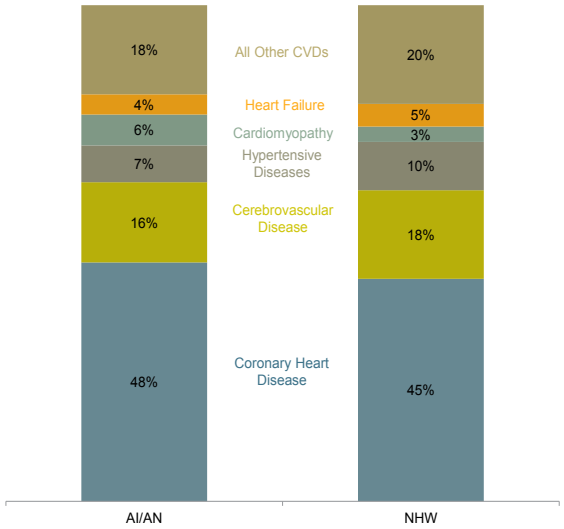
From 2013-2015, the median age of AI/AN who died from CVDs was 71, which was was 12 years younger than the median age of NHW who died from these diseases. Over 46% of all CVD deaths occurred among AI/AN less than 70 years of age, compared to 22% of NHW deaths. A relatively small proportion of AI/AN CVD were among elders over the age of 80 (31%, compared to 60% for NHW). The difference in age distributions was statistically significant.

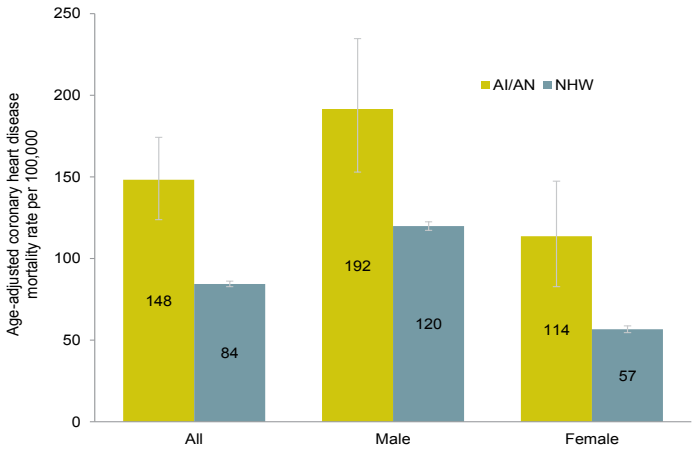
CVD mortality rates have decreased over time for both AI/AN and NHW in Washington. However, the AI/AN mortality rate has decreased more slowly then the NHW rate. This has resulted in a growing disparity between the two groups in recent years. In the early 1990s, the AI/AN CVD mortality rate was about 20% higher than the NHW rate. Since 2011, the AI/AN rate has been about 70% higher than the NHW rate.



Mortality

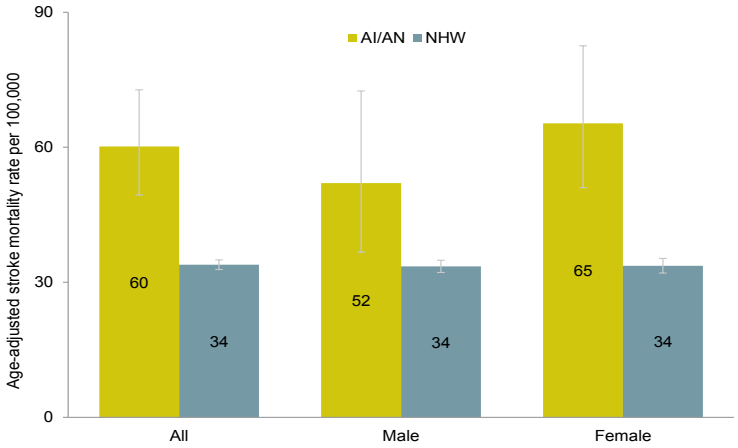
From 2013-2015, coronary heart disease was the most common cause of CVD mortality among AI/AN and NHW in Washington, and accounted for a higher proportion of deaths among AI/AN (48% vs. 45% for NHW). AI/AN had relatively lower proportions of deaths from cerebrovascular diseases, hypertensive diseases, and heart failure, and a higher proportion of deaths from cardiomyopathy compared to NHW.

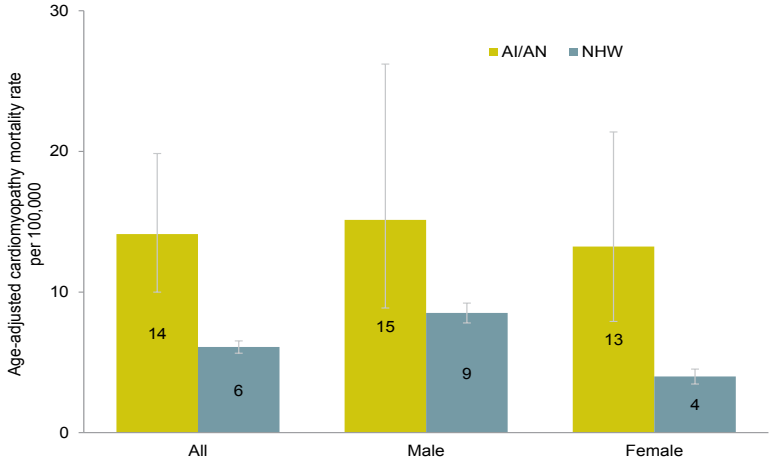




The coronary heart disease mortality rate for AI/AN was 80% higher than the NHW rate. Men of both races had higher mortality rates than women. Compared to NHW of the same sex, the AI/AN mortality rate was 60% higher for men and 2.0 times higher for women. These differences were statistically significant.

The cerebrovascular disease mortality rate for AI/AN was 80% higher compared to NHW in the state. The rate for AI/AN women was 26% higher than AI/AN men. Compared to NHW of the same sex, the AI/AN mortality rate was 60% higher for men and 90% higher for women. These differences were statistically significant.





The cardiomyopathy mortality rate for AI/AN was 2.3 times higher compared to NHW. Men of both races had higher cardiomyopathy death rates than their female counterparts. However, there was a larger racial disparity among women – AI/AN women were 3.3 times more likely to die from cardiomyopathy than NHW women. These differences were statistically significant.

Patient Management

The table below shows 2015 data for IHS and tribal clinics in Washington and the national IHS. In 2015, 46% of hypertension patients seen in Washington clinics had good blood pressure control, and 46% of coronary heart disease patients received a comprehensive CVD assessment. Over 48% of tobacco-using patients received a cessation intervention.

Measure	Washington Clinics	National IHS	2015 IHS Goal
Percent of hypertension patients with controlled high blood pressure (<140/90 mm Hg)	46%	59%	60%
Percent of coronary heart disease patients who received a comprehensive CVD assessment	46%	55%	47%
Percent of tobacco-using patients who received a tobacco cessation intervention	48%	52%	46%

Prevention

STEPS FOR YOU and YOUR COMMUNITY TO INCREASE HEALTHY HABITS

Physical Activity

Personal Steps

- Aim for 30 minutes a day of physical activity
- Start small. Walk to the mail box or the end of your driveway and then slowly increase your steps over time
- Take a walk with a pet or friend/family member

Community Actions

- Keep community walking paths and trails well lit and clear of debris
- Use tribal policies to keep loose dogs away from areas where community members might walk and play

Healthy Food

Personal Steps

- Aim to make ¾ of your plate fresh fruits and vegetables
- Choose whole grains
- Choose foods low in saturated and trans fat
- Decrease salt intake, or use an alternative if you like the salty flavor
- Choose lean proteins such as beans, lentils, chicken, fish, venison and elk

Community Actions

- Repurpose open land in the community to grow a community garden

Stress Management

Personal Steps

- Take at least 15 minutes of free time for you
- Sit in a park or garden
- Practice deep breathing exercises
- Surround yourself with healthy relationships

Community Actions

- Be involved with the community by attending events and volunteering
- Create opportunities within the community to revive culture and bring generations together

Policy, systems, and environmental changes can make healthier choices a more realistic option for every tribal member. Contact WEAVE-NW (weave@npaihb.org) for examples of successful changes by Northwest Tribes.

WEAVE-NW

Wellness for Every American Indian to Achieve and View Health Equity

Living Tobacco Free: Support & Policies

The WEAVE-NW Tobacco program is working with Northwest tribes to develop and implement commercial tobacco-free policies.

Some examples of effective policies are:

- Implementing policies within tribal health and dental clinics to screen for tobacco and provide patient referrals for counseling or nicotine replacement therapy
- Providing treatment and individual follow-up to tribal members who use tobacco
- Increasing collaboration with tribal tobacco treatment programs
- Promoting community engagement and integrated tobacco screening across all tribal programs
- Implementing and updating tobacco-free policies in tribal facilities, events, parks, housing, and businesses
- Training youth on tobacco prevention and cessation strategies (e.g., 5As, Second Wind, Prescription for Change) and developing youth tobacco-free policy toolkits
- Posting tobacco-free signs in homes, tribal facilities, parks, businesses, and events
- Developing and making available tobacco prevention and cessation literature that resonates with your community
- Community tobacco readiness surveys

WEAVE-NW can help with information, trainings, environmental scans, and tool development.
Contact weave@npaihb.org for further information.

Definitions

Cardiovascular diseases (CVDs) refer to diseases that affect the heart and blood vessels.

Coronary heart (or artery) disease is the most common type of heart disease, and results from the buildup of plaque in arteries that supply blood to the heart. Over time, the plaque causes arteries to narrow and reduces the availability of blood and oxygen to the heart. This can lead to chest pain (angina), a heart attack (myocardial infarction), a weakened heart muscle (heart failure), and irregular heartbeat (arrhythmia). The risk of coronary heart disease is higher for men.

Cardiomyopathy refers to several diseases that cause the heart muscle to thicken, become rigid, thin out, or become replaced with scar tissue. These changes reduce the heart's ability to pump blood, and can result in heart failure or arrhythmia. Some types of cardiomyopathy are inherited, while other types are caused by coronary heart disease, diabetes, viral infections, long-term alcohol or drug use, or other diseases.

Cerebrovascular diseases affect the blood vessels in the brain. Strokes are the most common type of cerebrovascular disease, and occur when there is a blockage in the blood supply to the brain (ischemic stroke) or when a blood vessel bursts in the brain (hemorrhagic stroke). Strokes reduce the brain's oxygen supply and cause damage to brain tissue, which can ultimately result in disability or death. The risk for stroke is higher for women.

Hypertensive diseases result from damage from prolonged and uncontrolled high blood pressure (hypertension). High blood pressure occurs when blood pushes against the walls of arteries with greater than normal force. Uncontrolled hypertension can increase the risk for heart attack, stroke, heart failure, and aneurysms.

Technical Notes

Definitions and Abbreviations

AI/AN: American Indian or Alaska Native

Age-adjusted rate: A rate that controls for different age distributions in populations, which allows for accurate comparisons between populations

CVD: Cardiovascular Disease

Hospitalization rate: The number of inpatient hospital discharges that occurred in a population during a specified time period, expressed as visits per 100,000 population

Mortality rate: The number of deaths that occurred in a population during a specified time period, expressed as deaths per 100,000 population

IHS: Indian Health Service

NPAIHB: Northwest Portland Area Indian Health Board ("the Board"); established in 1972 as a non-profit tribal advisory organization serving the 43 federally recognized Tribes of Idaho, Oregon, Washington. NPAIHB is located in Portland, Oregon.

NHW: Non-Hispanic White

Prevalence: Number of people who have a disease, risk factor, or condition in a population; often presented as a percentage (e.g., percentage of current female smokers)

Principal diagnosis: In hospital discharge data, the primary reason a patient was admitted to the hospital

Statistically significant: In this publication, a statistically significant difference means there is less than a 5% chance that the difference is due to random fluctuations (i.e., there is at least a 95% chance that there is a true difference between populations).

Methods and Data Sources

1. Data Sources:
   - Mortality data are from death certificates from the Washington Department of Health's Center for Health Statistics (2013-2015), corrected for AI/AN misclassification.
   - Hospitalization data are from in-patient hospital discharge records from the Washington Comprehensive Hospital Abstract Reporting System (2012-2014), corrected for AI/AN misclassification.
   - Prevalence data are from the Washington State Department of Health.
   - Patient management data are from Portland Area IHS 2015 Government Performance and Results Act (GPRA) data. Data on Washington clinics include IHS and tribal clinics in Washington that report GPRA data to the IHS.
2. AI/AN data include hospitalizations or deaths among American Indian or Alaska Native (alone or in combination with another race) residents of Washington.
3. The following ICD-10 codes were used to identify deaths from specific causes: All CVDs (I10-I99); Cerebrovascular diseases (I60-I69); Coronary Heart Disease (I20-I25); Cardiomyopathy (I42).
4. Hospitalizations were categorized using the Healthcare Cost and Utilization Project's (HCUP) Clinical Classification Software (CCS). Hospitalizations for cardiovascular disease include records whose principal diagnosis was assigned a level 1 CCS code of '7' (Diseases of the circulatory system).
5. Rates are age-adjusted to the 2000 US Standard population, and are calculated using the National Center for Health Statistics' bridged race estimates (vintage 2015) for population denominators.
6. The data presented may not be comparable to information published by state or federal agencies due to differences in how we identify AI/AN individuals.

References:

1. Washington State Department of Health. 2017. American Indian/Alaska Native Chronic Disease Profile (DOH 345-334). http://www.doh.wa.gov/Portals/1/Documents/Pubs/345-334-AmericanIndianAlaskaNative.pdf. Accessed 7/18/2017. Data on youth are from the Washington State Healthy Youth Survey (2016) and data on adults are from the Washington Behavioral Risk Factor Surveillance System (2013-2015).

2. IHS performance measures https://www.ihs.gov/crs/gprareporting/

Racial Misclassification

AI/AN are often incorrectly classified as another race (usually White) in health data systems. Racial misclassification makes it difficult to accurately measure and report on outcomes like cardiovascular diseases for Tribes and AI/AN communities. The Improving Data and Enhancing Access - Northwest (IDEA-NW) Project works with state health departments to correct AI/AN misclassification through record linkages with the Northwest Tribal Registry. Without this correction, the data used in this publication would have under-counted AI/AN CVD hospitalizations by 864 visits and AI/AN CVD deaths by 92 records.

This publication was produced by NPAIHB's IDEA-NW Project.

You can find this and other data products at:
http://www.npaihb.org/idea-nw/

For more information about the IDEA-NW Project or to request health data, please contact:
ideanw@npaihb.org
503-416-3261

For more information about the WEAVE-NW Project, please visit:
http://www.npaihb.org/weave/
or contact us at:
weave@npaihb.org

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