4. Diabetes

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Diabetes (also called diabetes mellitus) is a chronic disease caused by high levels of blood glucose (or blood sugar). Blood glucose levels are controlled by the hormone insulin, which moves glucose from the blood into cells to be used as energy. In type 1 diabetes, the body does not make enough insulin to control blood sugar levels. In type 2 diabetes (the most common type), the body no longer uses insulin efficiently. Although the two forms are different in many ways, the end result of both is high blood sugar. If left untreated, diabetes can damage nearly every tissue in the body, and can cause heart attacks, stroke, blindness, kidney failure, and amputations of toes, feet, or legs.[1]

AI/AN adults have among the highest rates of diabetes in the U.S. From 2010-2012, the age-adjusted percentage of AI/AN adults with diabetes was 15.9%, compared to 7.6% for NHW, 12.8% for Hispanics, and 13.2% for African Americans.[2] AI/AN diabetes rates vary by region, from 6% for Alaska Natives to 24.1% for American Indians in Arizona.[2] Diabetes is the fourth leading cause of death for AI/AN nationwide.

Diabetes prevalence among Idaho AI/AN, both by self-report and Indian health facility medical records, was around 10-15%. Diabetic screening rates are similar to other AI/AN in the Portland Area and nationally, and close to the IHS goals. However, two-thirds of diabetic AI/AN seen at Idaho clinics did not have their blood sugar and blood pressure under control. Diabetes was a major cause of death with AI/AN mortality rates nearly three times higher than NHW.

While diabetes is a life-long disease, it can be managed by exercising regularly, eating a healthful diet, taking medications, and getting regular health check-ups. People with pre-diabetes can reduce their risk by getting regular physical activity, losing a moderate amount of weight, and eating a balanced diet. Since 1997, the Special Diabetes Program for Indians (SDPI) has funded initiatives to prevent and treat diabetes in AI/AN communities. These initiatives have resulted in improved access to treatment and prevention services and improved clinical outcomes for diabetes patients.[3]

1.National Diabetes Information Clearinghouse. Your guide to diabetes: Type 1 and Type 2. Available at: http://www.diabetes.niddk.nih.gov/dm/pubs/type1and2/index.aspx.

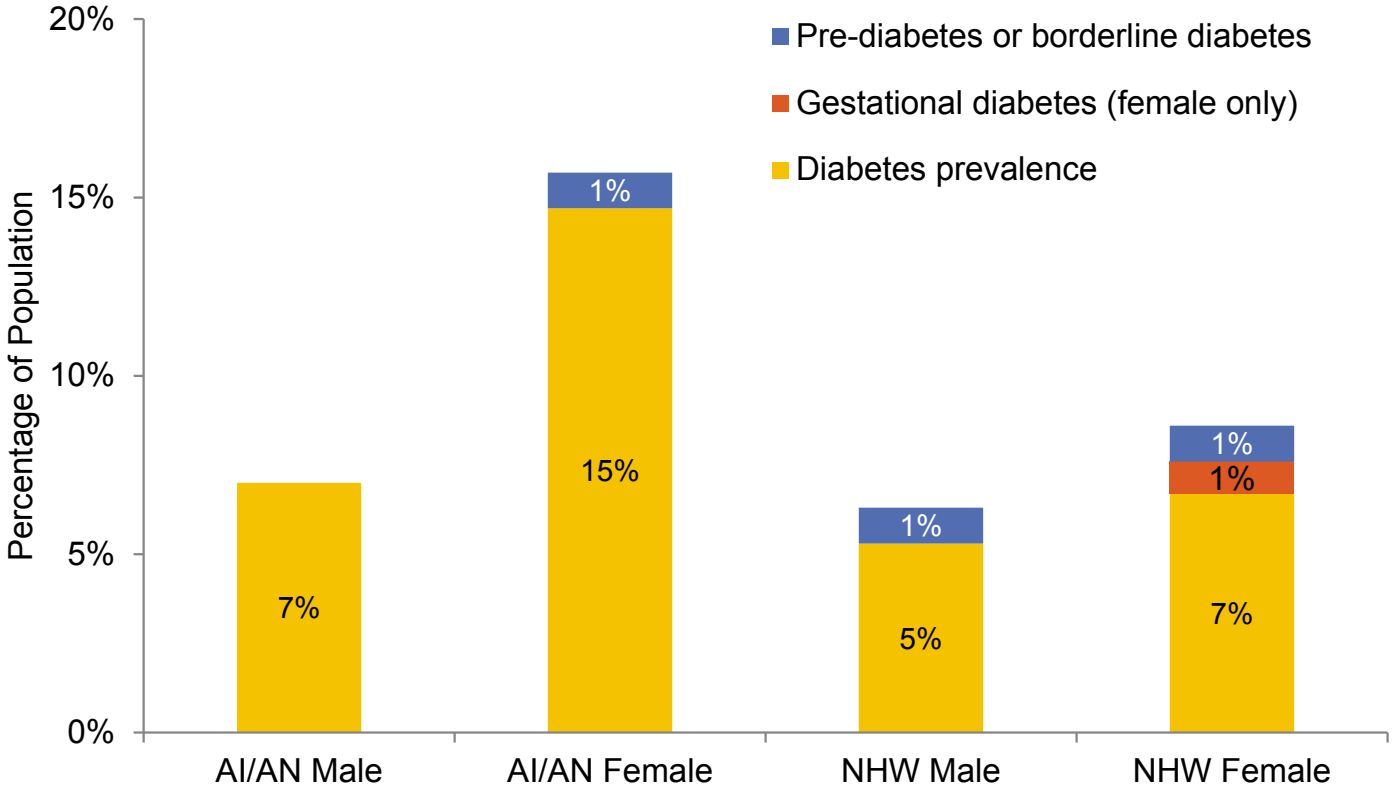
2.Centers for Disease Control and Prevention. *National Diabetes Statistics Report: Estimates of Diabetes and Its Burden in the United States, 2014*. Atlanta, GA: US Department of Health and Human Services; 2014.

3. Indian Health Service Division of Diabetes Treatment and Prevention. Special Diabetes Program for Indians: Successful Interventions and Sustained Achievements (2012). Available at: http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=resourcesFactSheets#2

Self-Reported Diabetes

Figure 4.1 shows the prevalence of self-reported diabetes among AI/AN and NHW adults in Idaho. From 2006-2012, AI/AN male diabetes prevalence was less than half that of AI/AN females (7% versus 15%). AI/AN female diabetes prevalence was also double that of NHW females (7%), while AI/AN males had rates similar to NHW males (7% versus 5%). Rates of pre-diabetes and gestational diabetes were very low for all groups.

Figure 4.1: Self-reported diabetes by race and sex, Idaho, 2006-2012.



Sample sizes (n): AI/AN males=185; AI/AN females=313; NHW males=13,751; NHW females=20,911.

Data Source: 2006 – 2012 CDC BRFSS

Data Notes: The BRFSS prevalence estimates (shown as a percentage) are weighted to make the survey responses representative of the Idaho population. The sample sizes presented below the figures are the unweighted number of people who answered this question for the indicated years.

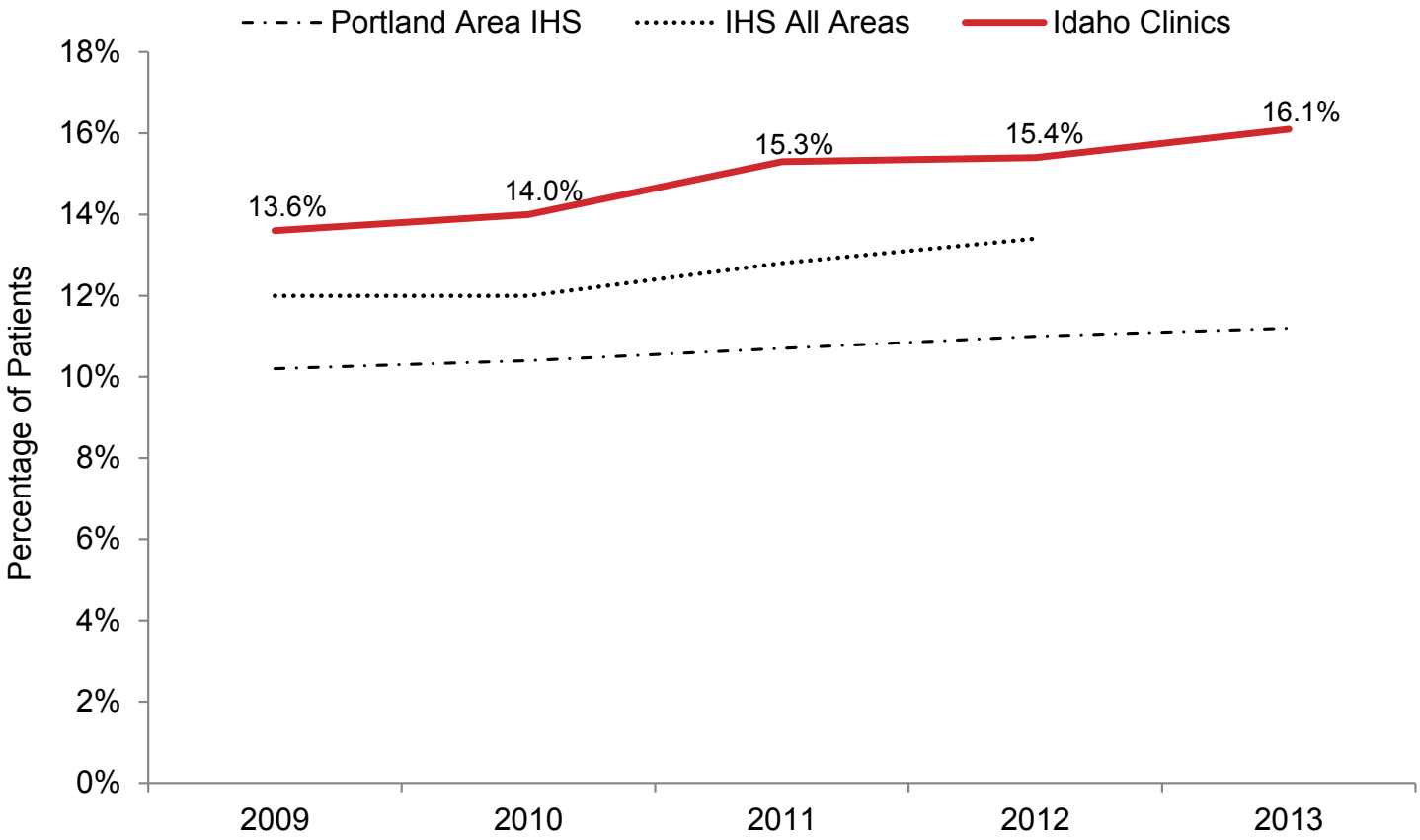
Diabetes Prevalence

From 2009-2013, AI/AN patients who received care at Indian health facilities in Idaho had a higher prevalence of diabetes compared to all Portland Area IHS patients and IHS patients nationwide (Figure 4.2). The diabetes prevalence in the Idaho patient population rose slightly during this time period, from 13.6% in 2009 to 16.1% in 2013.

Data Source: Portland Area Indian Health Service.

Data Notes: Data labels only shown for Idaho clinics. 2013 data not available for IHS All Areas. Idaho clinics include non-urban federal and tribal Indian health facilities in Idaho. Portland Area IHS clinics include non-urban federal and tribal Indian health facilities in Idaho, Oregon, and Washington.

Figure 4.2: Diabetes prevalence among IHS patients, 2009-2013.



Diabetes Control and Management

Blood Sugar Control

Blood sugar control, as measured by the Hemoglobin A1c, is an important indicator of how well diabetes patients are managing their disease. The U.S. goal is for 58.9% of adults with diabetes to have a hemoglobin A1c level below 7% (Healthy People 2020). Until 2012, IHS defined ideal blood sugar control as having a hemoglobin A1c level below 7%. This treatment goal was relaxed in 2013 to a hemoglobin A1c result below 8%.

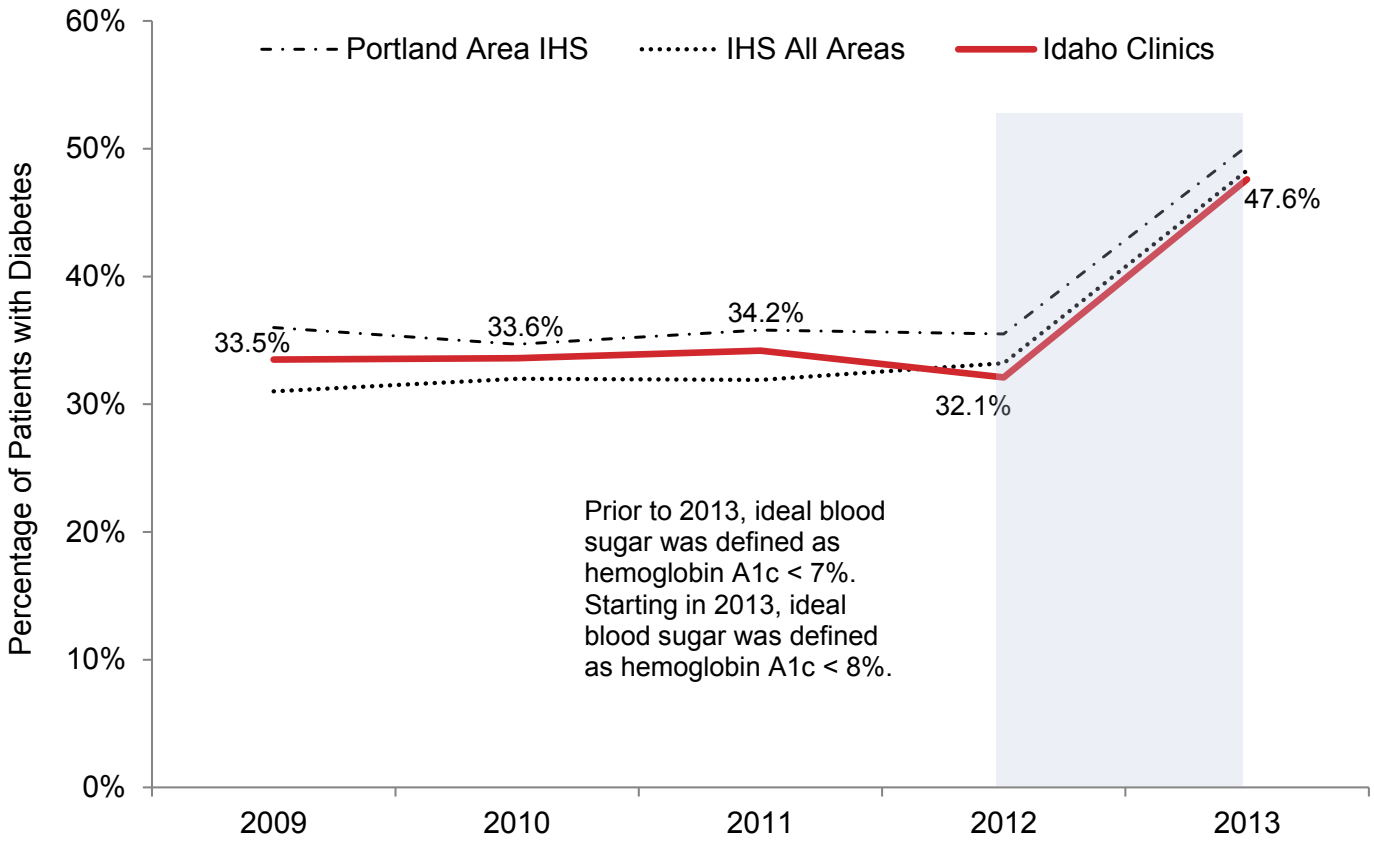
From 2009 to 2012, between 32-34% of AI/AN diabetes patients seen in Idaho clinics had ideal blood sugar levels. In 2013, this increased to 47.6% as a result of the definition change. Idaho clinics have a slightly lower percentage of patients with controlled blood sugar compared to the Portland Area IHS overall, but exceed the national IHS average.

Data Source: *Portland Area Indian Health Service.*

Data Notes: Data labels only shown for Idaho clinics. The shaded area shows the year when the definition for ideal blood control changed.

Idaho clinics include non-urban federal and tribal Indian health facilities in Idaho. Portland Area IHS clinics include non-urban federal and tribal Indian health facilities in Idaho, Oregon, and Washington.

Figure 4.3: Percentage of IHS diabetes patients with ideal blood sugar control, 2009-2013.



Blood Pressure Control

Diabetes patients have increased risks for heart disease, and can reduce these risks by managing their blood pressure. The U.S. goal is for 57% of adults with diabetes to have their blood pressure under control (Healthy People 2020). Until 2012, IHS defined ideal blood pressure control for diabetes patients as having a blood pressure level below 130/80 mm Hg. This treatment goal was relaxed in 2013 to a blood pressure level below 140/90 mm Hg.

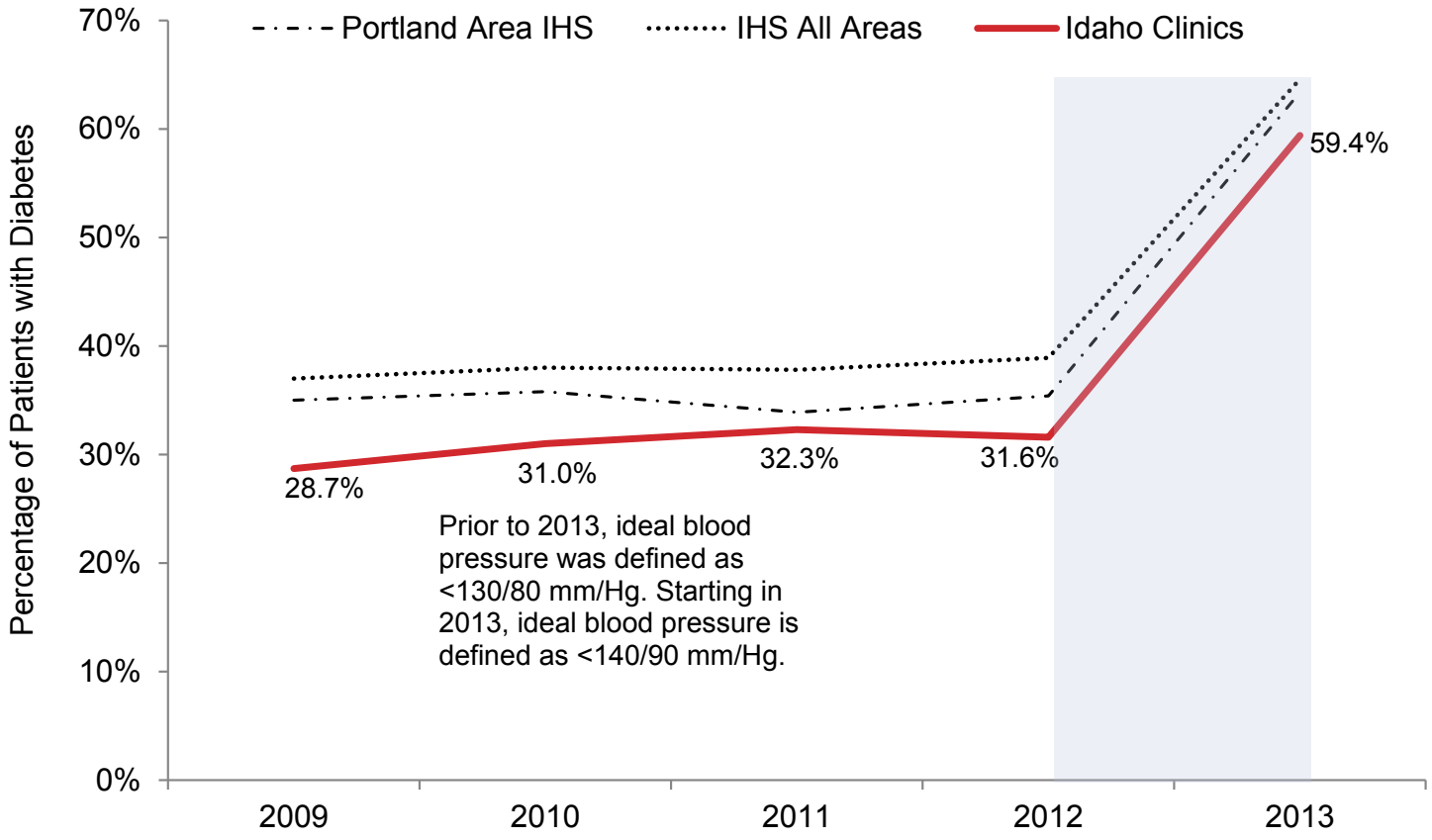
From 2009 to 2012, approximately 30% of AI/AN diabetes patients seen in Idaho clinics had ideal blood pressure levels. In 2013, this increased to 59.4% as a result of the definition change. Idaho clinics have a lower percentage of patients with controlled blood sugar compared to the Portland Area IHS average.

Data Source: Portland Area Indian Health Service.

Data Notes: Data labels only shown for Idaho clinics. The shaded area shows the year when the definition for ideal blood control changed.

Idaho clinics include non-urban federal and tribal Indian health facilities in Idaho. Portland Area IHS clinics include non-urban federal and tribal Indian health facilities in Idaho, Oregon, and Washington.

Figure 4.4: Percentage of IHS diabetes patients with ideal blood pressure, 2009-2013.



Recommended Screenings - LDL Assessment

Diabetes patients are at increased risk for heart disease, kidney disease, eye problems, and other health issues. Diabetes patients can reduce their risk for these complications by receiving regular screening and monitoring. Routine physical examinations and test can help patients and their healthcare providers to manage diabetes and related health issues. IHS has performance goals to measure how many diabetes patients are examined yearly for LDL (low density lipoprotein) cholesterol (related to heart disease risk), nephropathy (related to kidney disease risk), and diabetic retinopathy (or diabetic eye disease).

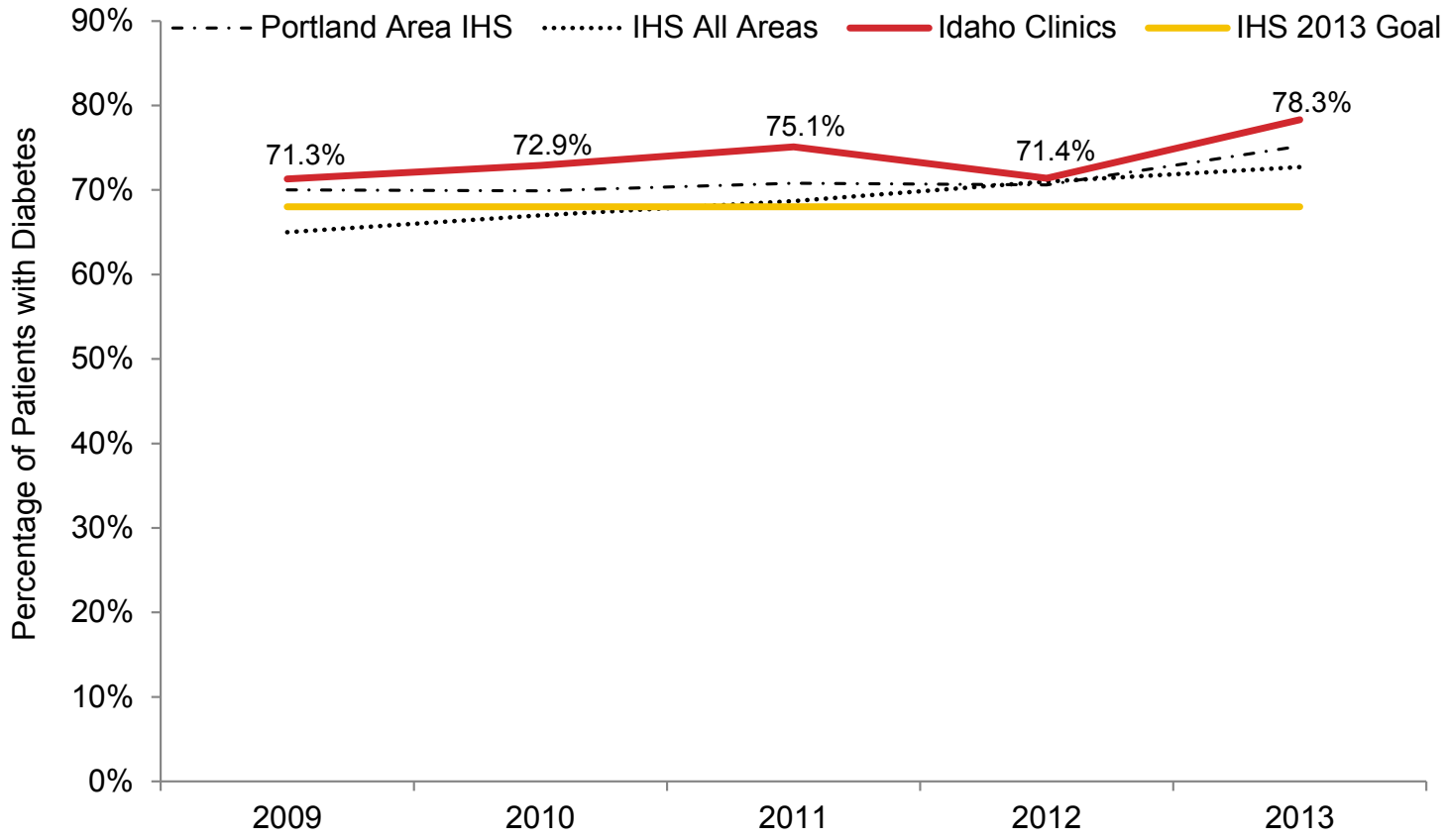
Data Source: Portland Area Indian Health Service.

Data Notes: Data labels only shown for Idaho clinics.

Idaho clinics include non-urban federal and tribal Indian health facilities in Idaho. Portland Area IHS clinics include non-urban federal and tribal Indian health facilities in Idaho, Oregon, and Washington.

LDL Cholesterol Assessment: From 2009-2012, approximately 72% of AI/AN diabetes patients seen in Idaho clinics had their LDL cholesterol levels assessed. This increased to 78.3% in 2013, which exceeded the IHS goal of 68% (Figure 4.5). Since 2009, Idaho clinics have slightly exceeded both the Portland Area IHS and the IHS national average on this measure.

Figure 4.5: Percentage of IHS diabetes patients who received an LDL assessment, 2009-2013.



Recommended Screenings - Nephropathy Assessment

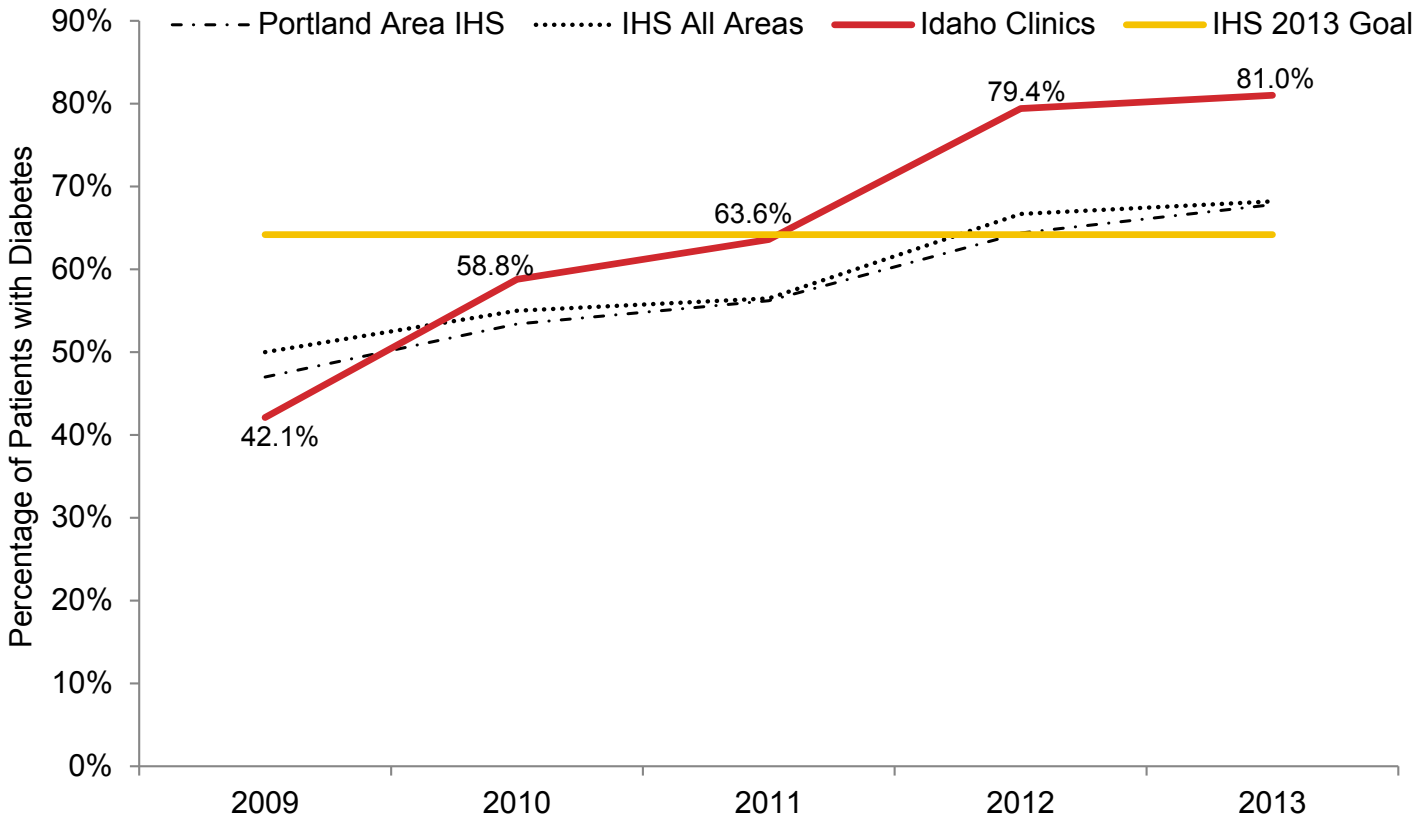
Diabetic Nephropathy: The percentage of Idaho AI/AN diabetes patients who had a diabetic nephropathy assessment has increased from 42.1% in 2009 to 81.0% in 2013. Idaho clinics exceeded the IHS goal of 64.2% in 2013. From 2010 on, Idaho clinics have had a higher percentage of patients who received this recommended screening compared to the Portland Area IHS and national IHS. Both the Portland Area and national IHS exceeded the 2013 goal for this measure.

Data Source: Portland Area Indian Health Service.

Data Notes: Data labels only shown for Idaho clinics.

Idaho clinics include non-urban federal and tribal Indian health facilities in Idaho. Portland Area IHS clinics include non-urban federal and tribal Indian health facilities in Idaho, Oregon, and Washington.

Figure 4.6: Percentage of IHS diabetes patients who received a nephropathy assessment, 2009-2013.



Recommended Screenings - Retinopathy Assessment

Diabetic Retinopathy: The U.S goal is for 58.7% of adults with diabetes to have had a dilated eye exam in the past year, (Healthy People 2020), and the IHS goal for 2013 was for 56.8% to have received this recommended screening.

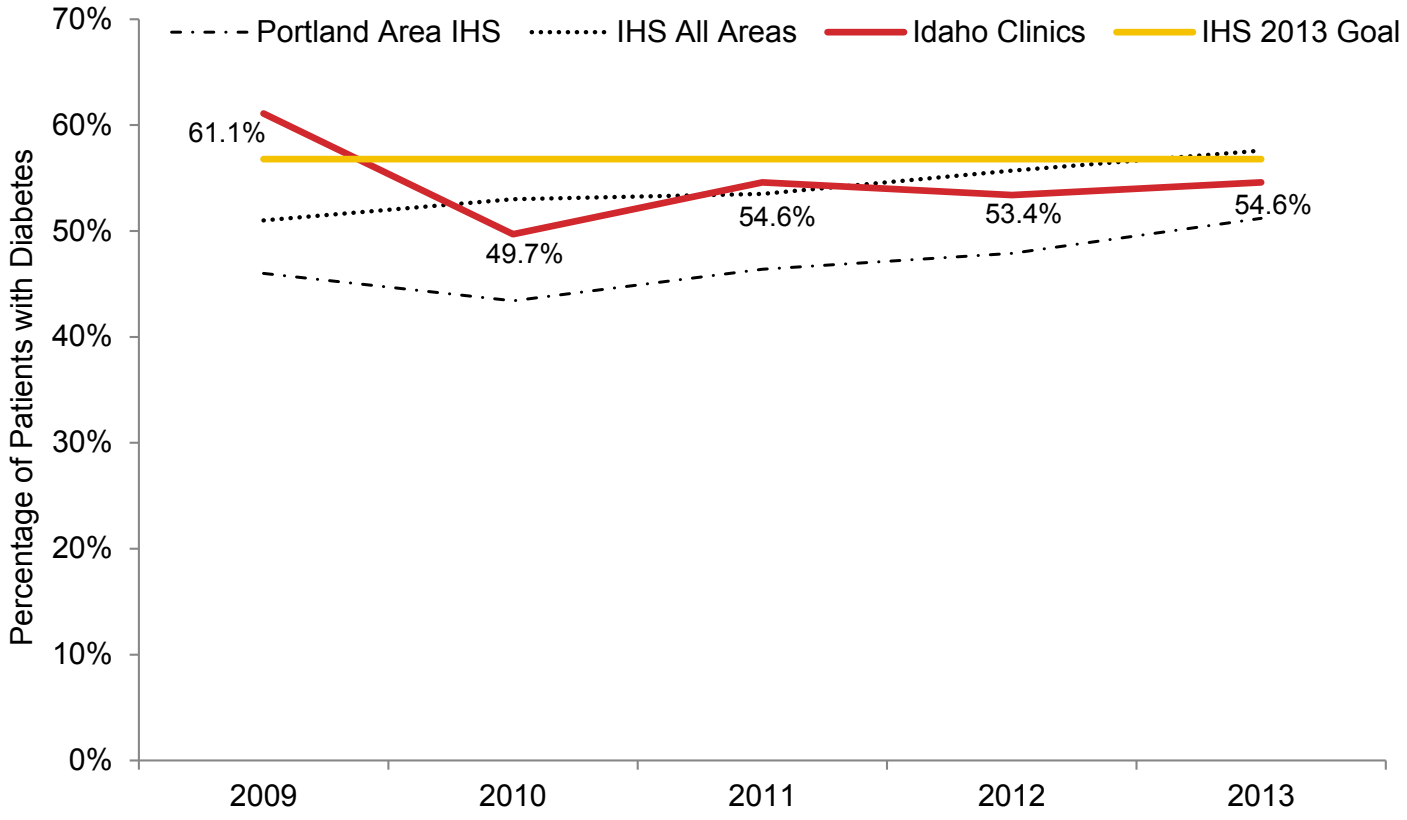
The percentage of Idaho AI/AN diabetes patients who had a diabetic retinopathy exam has decreased from 61.1% in 2009 to 54.6% in 2013. Idaho clinics have had a higher percentage of patients who received this recommended screening compared to the Portland Area IHS and exceeded the national IHS percentage in 2009 and 2011 (Figure 4.7). Idaho clinics and the Portland Area IHS did not meet the IHS goal in 2013. The national IHS average has increased over time and met the 2013 goal for this measure.

Data Source: Portland Area Indian Health Service.

Data Notes: Data labels only shown for Idaho clinics.

Idaho clinics include non-urban federal and tribal Indian health facilities in Idaho. Portland Area IHS clinics include non-urban federal and tribal Indian health facilities in Idaho, Oregon, and Washington.

Figure 4.7: Percentage of IHS diabetes patients who received a retinopathy assessment, 2009-2013.



Diabetes Mortality

Diabetes is the fifth leading cause of death among Idaho AI/AN. Figure 4.8 shows the age-adjusted death rates for diabetes among AI/AN and NHW in Idaho. Female AI/AN are about 14% more likely to die of the disease than males. Compared to NHW, AI/AN diabetes death rates are 2.8 times higher. Throughout the Northwest, AI/AN in all three states have very similar diabetes death rates.

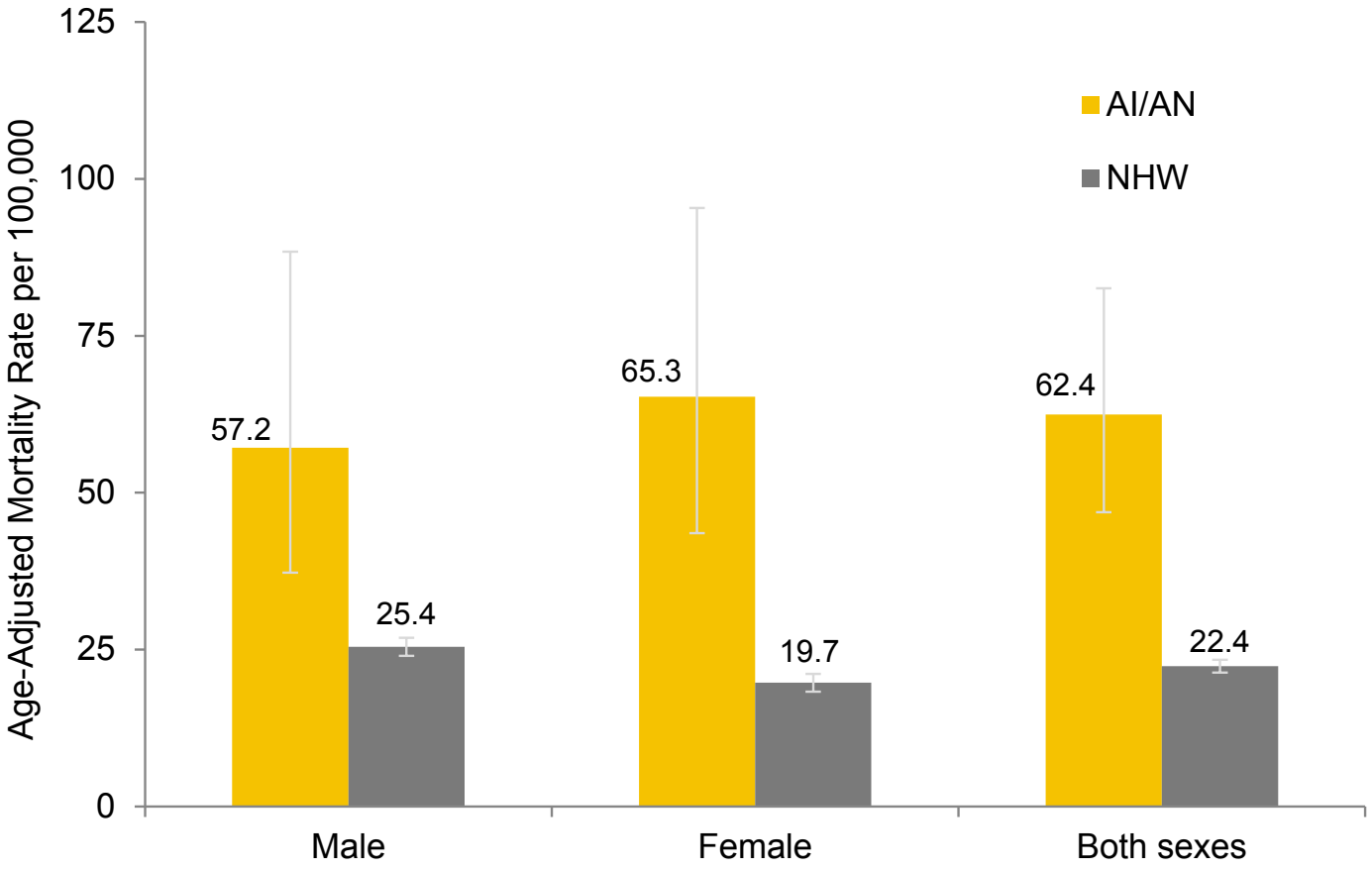
Table 4.1: Diabetes mortality rates by race and sex, Idaho, 2006-2012.

Sex	AI/AN Rate (95% CI)	NHW Rate (95% CI)	AI/AN vs. NHW Rate Ratio (95% CI)
Male	57.2 (37.3, 88.4)	25.5 (24.0, 26.9)	2.25 (1.59, 3.18)‡
Female	65.3 (43.5, 95.4)	19.72 (18.3, 21.1)	3.31 (2.34, 4.68)‡
Both Sexes	62.5 (46.9, 82.6)	22.4 (21.3, 23.4)	2.79 (2.19, 3.57)‡

CI = confidence interval
‡ Indicates a statistically significant difference (p<.05).

Data Source: Idaho Death Certificate File (Idaho Dept. of Health and Welfare), 2006-2012, corrected for misclassified AI/AN race

Figure 4.8: Age-adjusted diabetes mortality rates by race and sex, Idaho, 2006-2012.



Program Spotlight: Western Tribal Diabetes Project

The WTDP assists tribal programs in tracking, reporting, and utilizing accurate data on patients with diabetes. This information is used to improve the quality of patient care, gain additional resources, and plan effective intervention programs to reduce the burden of diabetes at the local level. WTDP provides tribes with training, technical assistance, and tools so they can:

Build a foundation to provide complete and accurate information about patients with diabetes

Estimate the burden of disease and impact of diabetes by using an electronic diabetes register

Improve health outcomes by using an electronic diabetes register to make informed decisions about clinical diabetes care

Prevent diabetes in high-risk individuals.

WTDP holds regular trainings on the Diabetes Management System, provides technical assistance with completing the Annual IHS Diabetes Audit and maintaining local diabetes registers, prepares tribe and area-level reports on patient care and outcomes, and provides information on best practices to prevent and manage diabetes. WTDP also partners with the Portland Area IHS and Nike to host Nike Native Fitness workshops at the Nike World Headquarters in Beaverton, OR. WTDP is funded by an annual 5% set-aside from the Portland Area's allocation for the Special Diabetes Program for Indians.

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