

Indian Health Service

2008 National Summary



Performance Measurement:

***Improving Healthcare for
American Indians
and
Alaska Natives***

Government Performance and Results Act (GPRA)

February 2009

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Acknowledgments



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Introduction



The Indian Health Service (IHS), an agency within the Department of Health and Human Services, carries out the federal government's trust responsibility to provide health care services to eligible American Indian and Alaska Native (AI/AN) people. The AI/AN population is fast growing and suffers disproportionately from a number of health problems. For example, the 2002-2004 death rate from alcohol abuse was 6.5 times higher among AI/ANs than all races in 2003. During the same years, the AI/AN death rate from diabetes was almost three times higher than all races, and the suicide rate was 1.7 times higher. Despite these challenges, IHS has succeeded in substantially improving the health status of the AI/AN population, primarily by focusing on preventive and primary care services and developing a community-based public health system. As a result, the average death rate from all causes for the AI/AN population dropped a significant 28.4 percent between 1972-1974 and 2002-2004.

The Government Performance and Results Act (GPRA) requires each agency to develop a Strategic Plan outlining long-term goals and objectives, and to submit Annual Performance Plans and Annual Performance Reports showing progress toward meeting these long-term goals. Specific performance measures demonstrate an agency's effectiveness in meeting its mission. GPRA performance measures for the Indian Health Service assess the Agency's progress toward improving quality and access to health care and reducing health disparities for the more than 1.4 million AI/AN people receiving care through the IHS network.

In Fiscal Year (FY) 2008, IHS had 33 annual GPRA clinical and non-clinical Measures. Results for thirty-two measures have been reported; one measure calculates unintentional mortality rates and cannot be reported in the current year. IHS met 27 (84%) of 32 reported measures. In addition, IHS has long-term and annual performance measures developed in conjunction with the Office of Management and Budget Program Assessment Rating Tool (PART) reviews of individual IHS programs. Some of these PART measures are unique and distinct from GPRA measures, such as the measure to increase the number of hospitals and clinics using the Electronic Health Record. Other PART measures are based on GPRA measures. For example, the Tribal PART tracks performance on 17 GPRA clinical measures at Tribal clinics. The PART of the Health Care Facilities Construction Program tracks performance on 8 clinical GPRA measures at new facilities.



This report provides a summary of results for the 22 clinical GPRA measures for FY 2008. These represent the performance of IHS and Tribally-operated health facilities in the 12 IHS Areas, based on aggregated data that the Clinical Reporting System (CRS) software extracted from individual patient health records at 189 participating sites. A dashboard display of the eleven non-clinical measures results appears in Appendix A. Performance measures and results relating to PART reviews of individual programs are available at www.ExpectMore.gov.

Overall, the Agency performed very well on clinical GPRA measures in FY 2008. Nineteen of twenty-two measures, or 86%, met their pre-determined targets, and fourteen of these exceeded their targets. Of particular note are the following three measures, which all achieved significant increases over FY 2007 performance:

- Nephropathy assessment rates for patients with diabetes increased by an impressive ten percentage points from 40% in FY 2007 to 50% in FY 2008. The increase is significant as new, more stringent Standards of Care guidelines were incorporated into the requirements for this measure in FY 2007. The new guidelines will improve the ability to identify and monitor patients and help prevent or delay the need for dialysis or renal transplant. The increase indicates that the new guidelines continue to be implemented successfully.
- Topical fluoride treatments were provided to 120,754 patients in FY 2008, an increase of twelve percent over FY 2007. Topical fluoride treatments are a preventive measure that can reduce tooth decay, which may lead to abscesses, infections, tooth loss, and other health problems.
- Depression screening rates increased from 24% in FY 2007 to 35% in FY 2008. Depression may affect heart rhythms, increase blood pressure, may lead to elevated insulin and cholesterol levels, and could result in chronically elevated levels of stress hormones. Depression also frequently increases the risk of suicidal behavior. For the period 2002-2004, the AI/AN suicide rate was 70% higher than the 2003 rate for all races. Screening is a first step in identifying patients who need intervention, treatment, and follow up.

Introduction



The six GPRA measures that IHS uses to assess the quality of care for patients with diabetes are: Poor Glycemic Control, Ideal Glycemic Control, Blood Pressure Control, LDL Assessment, Nephropathy Assessment, and Retinopathy Assessment. Studies show that adequate control of blood glucose levels and blood pressure can prevent the onset or progression of complications associated with diabetes. Retinopathy and LDL Assessments help to identify diabetic patients who are at higher risk for developing blindness and heart disease. Nephropathy Assessments help to identify patients who are at risk for kidney disease.

Of these six measures, four – Ideal Glycemic Control, LDL Assessment, Nephropathy Assessment, and Retinopathy Assessment – met and exceeded their targets. This increase was achieved despite a one percentage point overall increase in the percentage of patients diagnosed with diabetes (12% of patients in FY 2008 vs. 11% in FY 2007). The Poor Glycemic Control and Blood Pressure Control measures each missed their targets by 1 percentage point. Both of these measures rely on patient compliance and expensive medications.

Improvement on diabetes measures is particularly important given the continuing epidemic of diabetes among the AI/AN populations. In 2002, AI/AN people were 2.2 times more likely to have diagnosed diabetes than non-Hispanic whites, and the death rate from diabetes in the AI/AN community increased by almost 57 percent between 1972-1974 and 2002-2004. Between 1997 and 2003, the prevalence of diabetes increased by 41 percent in the population served by the IHS.

Two of the three dental measures met their FY 2008 targets. The Topical Fluoride measure, discussed above, exceeded its target by 12,820 applications. The Dental Access measure maintained the FY 2007 rate of 25%. IHS and Tribal programs applied 241,207 sealants in FY 2008, or 98% of the Dental Sealant measure target of 245,449. This was 4,242 fewer sealants in FY 2008 than in FY 2007. The dental program has reported that many sites are “sealed out” with few new patients eligible for sealants each year. As a result, targets based on previous performance may be difficult to achieve for this measure.

All three immunization measures met their targets for FY 2008, and the Adult Pneumovax and Adult Influenza Immunization measures each exceeded their targets by 3 percentage points, reflecting a continuing emphasis on preventive care for elders.

Introduction



All three cancer screening GPRA measures (Pap Screening, Mammography Screening, and Colorectal Cancer Screening) also met or exceeded their targets. Mammography screening rates increased to 45%, the highest rate of mammography screening since the Agency began reporting GPRA results. Pap screening rates were unchanged from the FY 2007 rate of 59%. Colorectal Cancer screening rates improved by 3 percentage points from 26% in FY 2007 to 29%. Tobacco Cessation measure rates also improved in FY 2008, increasing by 5 percentage points from 16% in FY 2007 to 21%.

All Behavioral Health screening measures also improved over FY 2007 rates. Alcohol Screening and Domestic/Intimate Partner Violence Screening rates each improved by 6 percentage points over FY 2007. As mentioned above, Depression Screening rates improved by 11 percentage points over FY 2007, which reflects an increased emphasis on these critical behavioral health screenings in the primary care setting.

The escalating cost of healthcare, combined with a growing population and increasing prevalence of diabetes and obesity in AI/AN populations represent ongoing challenges. FY 2008 GPRA measure results demonstrate that IHS continues to improve care for all users of the Indian healthcare system and to increase access to care throughout Indian Country. These improvements support our long-term mission to decrease health inequities among AI/AN peoples.

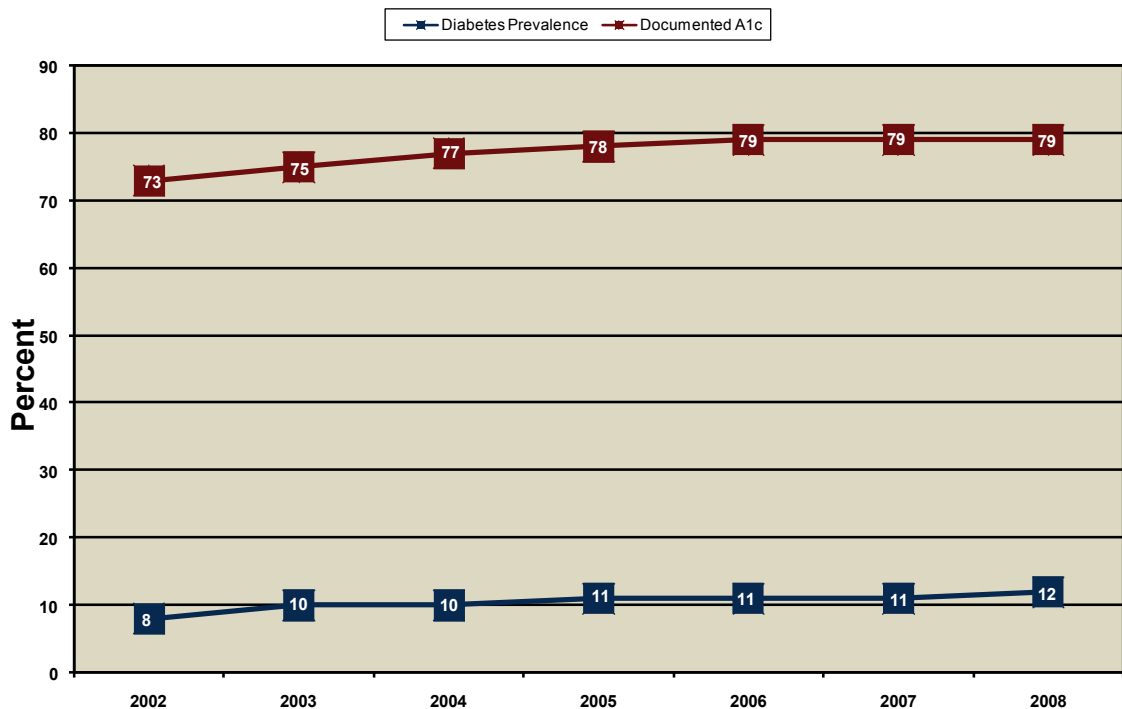
Diabetes: Prevalence and Documented A1c

Measures: Prevalence: Proportion of patients with diagnosed diabetes prior to the end of the report period. Documented A1c: Proportion of patients with hemoglobin A1c documented during the Report Period, regardless of result.

Importance: *Diabetes is a major cofactor in morbidity as well as one of the leading causes of mortality among AI/AN people. Diabetes is a major risk factor for cardiovascular disease, and CVD is the leading cause of death for American Indians. “Documented A1c” refers to a blood test called the Hemoglobin A1c, which determines blood sugar levels in patients with diabetes. This test can be used to determine a patient’s level of “glycemic control,” or how well blood sugars are controlled. These levels of control are divided into “Ideal” (<7 percent); “Good” (7.0-7.9 percent); “Fair” (8.0-<9.5 percent); and “Poor” (>9.5 percent), based on national diabetes care standards.*

2008 Target: N/A. Diabetes Prevalence and Documented A1c are not GPRA measures but are tracked by CRS and provided for context.

Diabetes: Prevalence and Documented A1c



Data source: CRS 8.0 electronic examination of 1,256,963 patient records for Diabetes prevalence and 97,423 patient records for Documented A1c.

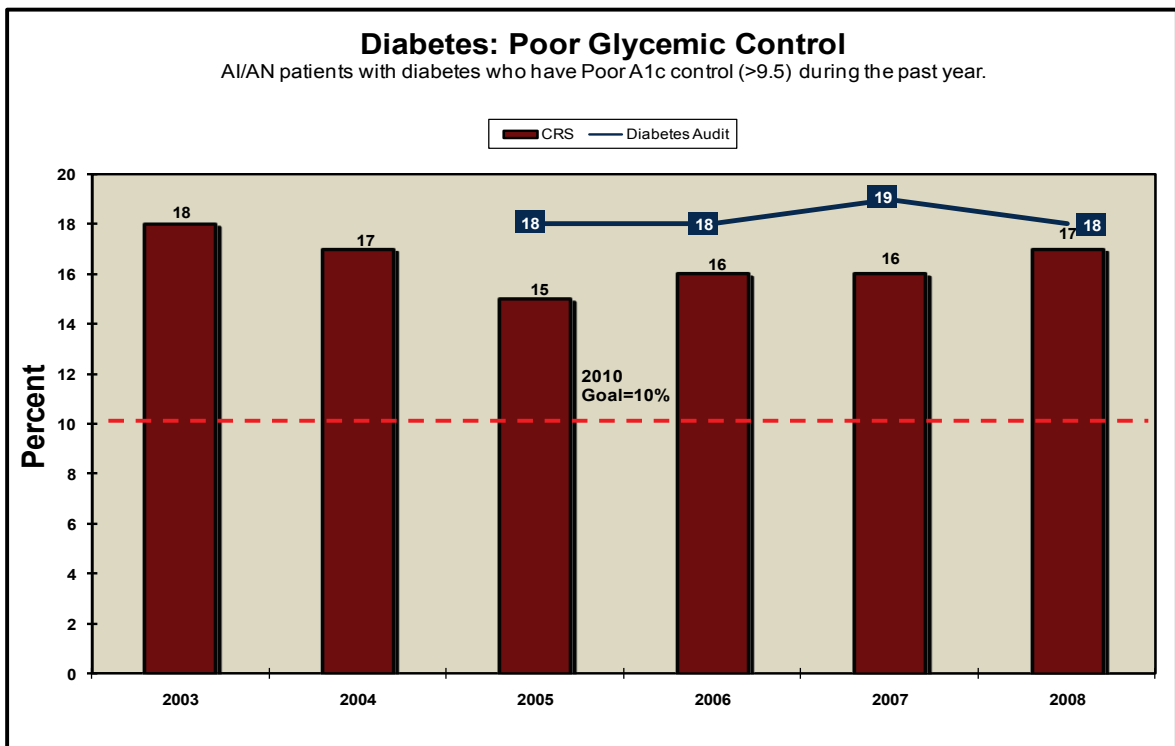
Results and Analysis: In FY 2008, the unadjusted diabetes prevalence rate among the IHS active patient population was 12% as measured by CRS. This is well above the national average of 8% for all races. The Documented A1c rate for patients diagnosed with diabetes was 79%, which far exceeds the Healthy People 2010 goal of 50%.

Diabetes: Poor Glycemic Control

Measure: Proportion of patients with diagnosed diabetes that have poor glycemic control (A1c>9.5).

Importance: Reducing the number of patients with diabetes with poor glycemic control will reduce the prevalence of diabetes complications. Clinical studies have shown that a 1% decrease in the absolute A1c level translates into a: 14% decrease in total mortality, 21% decrease in diabetes-related deaths, 14% decrease in myocardial infarctions, 40% decrease in eye diseases, 12% decrease in strokes, 43% decrease in amputations, and a 24% decrease in kidney failures.

2008 Target: Maintain the proportion of patients diagnosed with diabetes with poor glycemic control at the FY 2007 level of 16%.



Data source: CRS 8.0 electronic examination of 97,423 patient records. Diabetes audit data comes from the IHS Diabetes program. Audit data is based on different collection methods and exclusion criteria, but Audit data trends generally mirror CRS data trends.

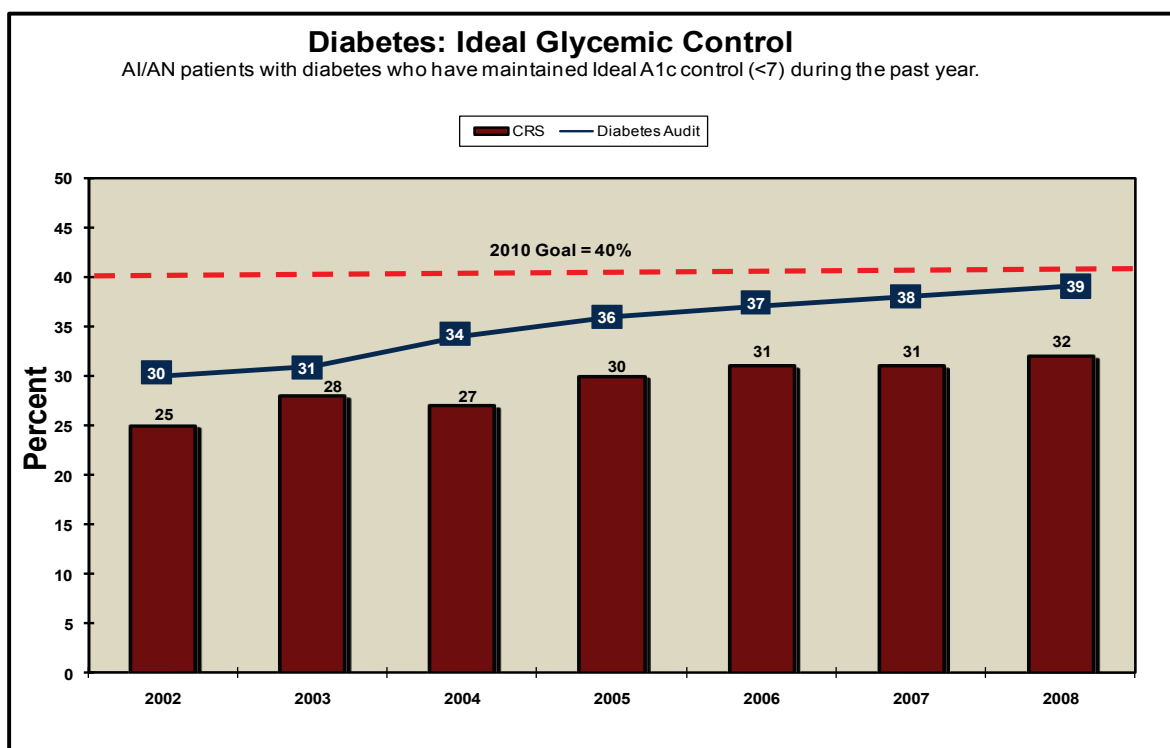
Results and Analysis: IHS did not meet the target for this measure. The proportion of patients with diabetes with poor glycemic control increased from 16% in FY 2007 to 17% in FY 2008. IHS met and exceeded the diabetes audit target to maintain the number of patients with poor control at 19%. The diabetes audit result showed a decrease from 19% to 18%. This is a high cost measure due to the necessity of frequent medical visits, medications, and laboratory testing for blood sugar control.

Diabetes: Ideal Glycemic Control

Measure: Proportion of patients with diagnosed diabetes with ideal glycemic control (A1c<7).

Importance: *Keeping blood sugar levels below 7 can slow or prevent the onset and progression of eye, kidney, and nerve disease caused by diabetes. Clinical studies have shown that intensive blood glucose control results in a 76% reduced risk of eye disease, a 50% reduced risk of kidney disease, a 60% reduced risk of nerve disease, a 42% reduced risk of any cardiovascular event, and a 57% reduced risk of heart attack or stroke.*

2008 Target: Maintain the proportion of patients with diabetes with ideal glycemic control at the FY 2007 level of 31%.



Data source: CRS 8.0 electronic examination of 97,423 patient records. Diabetes audit data comes from the IHS Diabetes program. Audit data is based on different collection methods and exclusion criteria, but Audit data trends generally mirror CRS data trends.

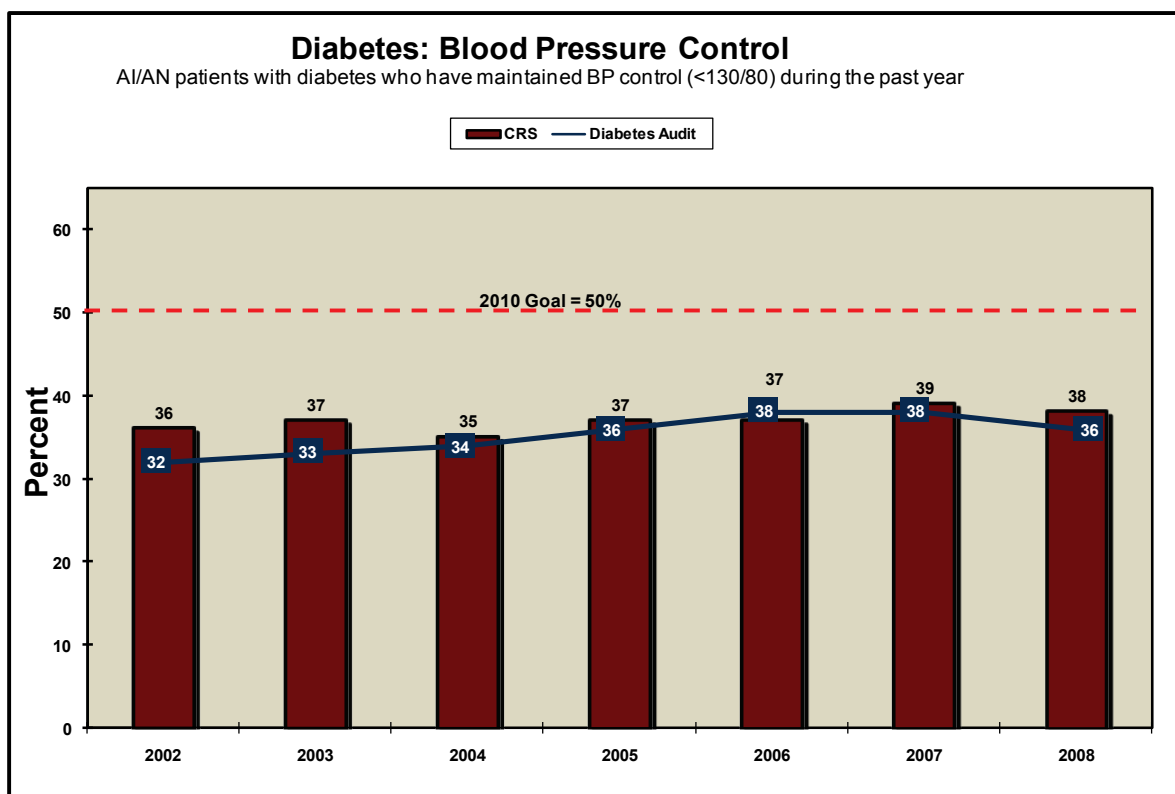
Results and Analysis: IHS met and exceeded the target for this measure. The proportion of patients with diabetes with ideal glycemic control increased from 31% in FY 2007 to 32% in FY 2008. IHS met and exceeded the diabetes audit target to maintain the number of patients with ideal control at 38%. The diabetes audit result showed an increase from 38% to 39%. This is a high cost measure due to the necessity of frequent medical visits, medications, and laboratory testing for blood sugar control.

Diabetes: Blood Pressure Control

Measure: Proportion of patients with diagnosed diabetes that have achieved blood pressure control (<130/80).

Importance: *Good blood pressure control can reduce the risk of complications from diabetes. A large clinical study in the United Kingdom found that diabetics with tightly controlled blood pressure had a 32% reduction in death related to diabetes, a 21% reduction in heart attacks, and a 44% reduction in strokes.*

2008 Target: Maintain the proportion of patients with diagnosed diabetes that have achieved blood pressure control at the FY 2007 level of 39%.



Data source: CRS 8.0 electronic examination of 97,423 patient records. Diabetes audit data comes from the IHS Diabetes program. Audit data is based on different collection methods and exclusion criteria, but Audit data trends generally mirror CRS data trends.

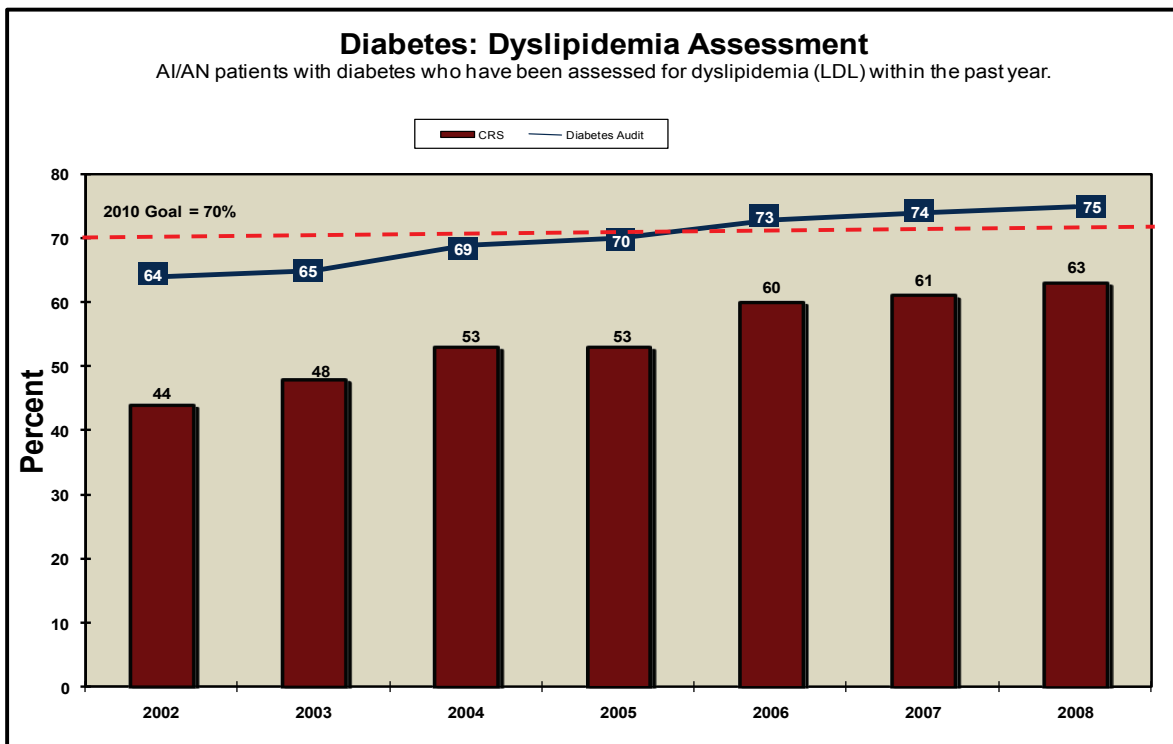
Results and Analysis: IHS did not meet the target for this measure. The proportion of patients with diabetes with controlled blood pressure decreased from 39% in FY 2007 to 38% in FY 2008. IHS also did not meet the diabetes audit target to maintain the number of patients with blood pressure control at 38%. The diabetes audit result showed a decrease from 38% to 36%.

Diabetes: Dyslipidemia Assessment

Measure: Proportion of patients with diagnosed diabetes assessed for dyslipidemia (LDL cholesterol).

Importance: *Dyslipidemia refers to disorders in the lipoprotein metabolism, including hypercholesterolemia (high LDL cholesterol), and low HDL (good) cholesterol. Low LDL and total cholesterol levels help to protect diabetic patients from developing heart disease. Improved control of cholesterol levels reduces the risk of cardiovascular complications by 20-50%. National standards recommend that people with diabetes keep their total cholesterol levels below 200 mg/dl, and their LDL cholesterol levels below 130 mg/dl and ideally below 100 mg/dl. Diabetic patients are especially prone to develop heart disease; therefore identification and treatment of elevated lipids in diabetic patients is extremely important.*

2008 Target: Maintain the proportion of patients with diagnosed diabetes assessed for dyslipidemia at the FY 2007 rate of 61%.



Data source: CRS 8.0 electronic examination of 97,423 patient records. Diabetes audit data comes from the IHS Diabetes program. Audit data is based on different collection methods and exclusion criteria, but Audit data trends generally mirror CRS data trends.

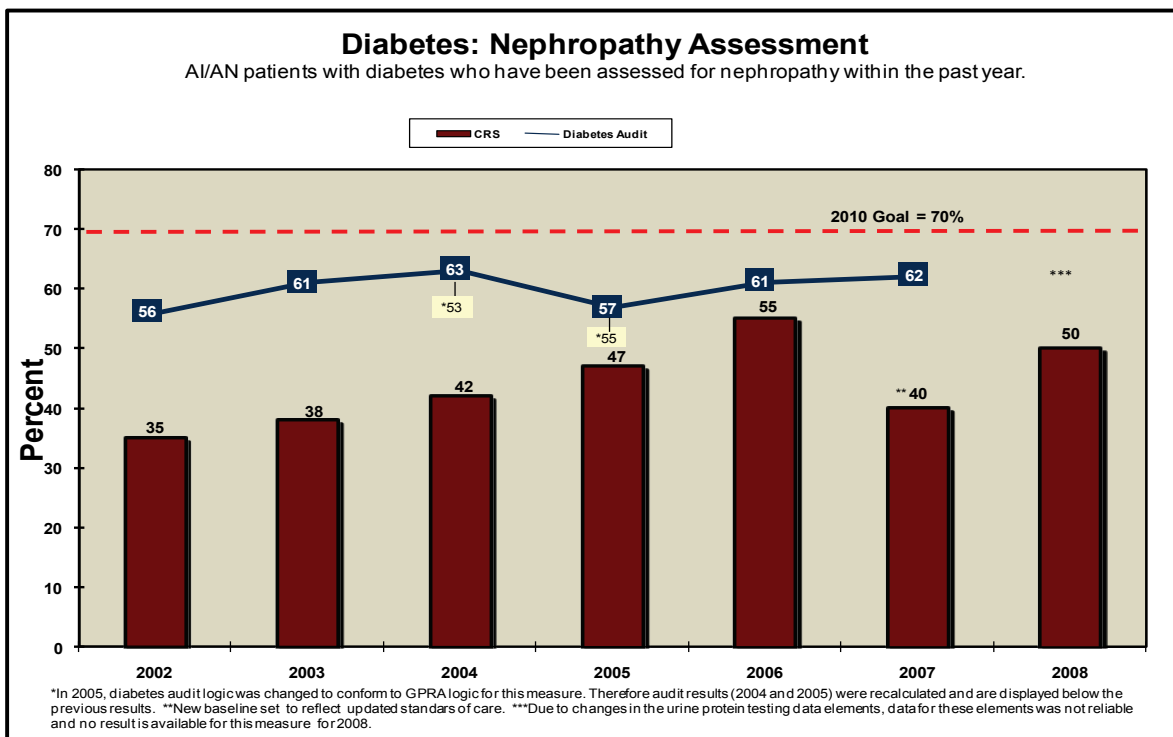
Results and Analysis: IHS met and exceeded the target for this measure. The proportion of patients with diabetes assessed for dyslipidemia increased from 61% in FY 2007 to 63% in FY 2008. IHS met and exceeded the diabetes audit target to maintain the number of patients assessed for dyslipidemia at 74%. The diabetes audit result showed an increase from 74% to 75%. Continued improvement in the LDL assessment rate is notable given that this is a high cost measure requiring frequent medical visits and laboratory testing.

Diabetes: Nephropathy Assessment

Measure: Proportion of patients with diagnosed diabetes assessed for nephropathy.

Importance: *Diabetes can cause kidney disease by damaging the parts of the kidneys that filter out wastes. Diabetic nephropathy, or kidney disease, can eventually lead to kidney failure. Diabetes is the leading cause of end stage renal disease (ESRD), which is a significant and growing problem in American Indian communities. Early identification of at-risk patients may help prevent or delay the need for costly care such as dialysis or renal transplant. New Diabetes Standards of Care guidelines were incorporated into this measure in FY 2007; these standards require both an estimated GFR and a quantitative urinary protein assessment.*

2008 Target: Maintain the proportion of patients with diagnosed diabetes assessed for nephropathy at the FY 2007 level of 40%.



Data source: CRS 8.0 electronic examination of 97,423 patient records. Diabetes audit data comes from the IHS Diabetes program. Audit data is based on different collection methods and exclusion criteria, but Audit data trends generally mirror CRS data trends.

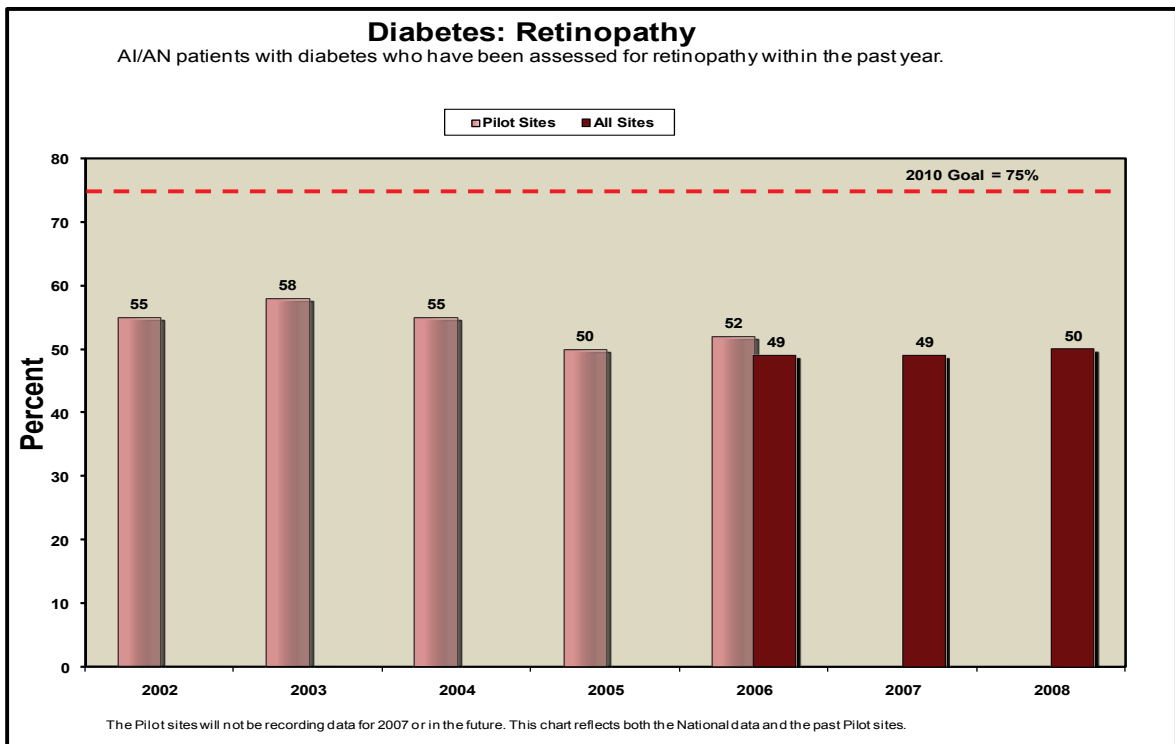
Results and Analysis: IHS met and exceeded the target for this measure. The proportion of patients with diabetes assessed for nephropathy increased by 10 percentage points, from 40% in FY 2007 to 50% in FY 2008. This increase shows that the Standards of Care guidelines for nephropathy assessment adopted in FY 2007 are being implemented successfully at Tribal and Federal sites. Data from the diabetes audit was not available for this measure for FY 2008 due to changes in the urine protein testing data elements.

Diabetes: Retinopathy

Measure: Proportion of patients with diagnosed diabetes who receive an annual retinal examination.

Importance: *Diabetes can affect sight by damaging the blood vessels inside the eye, a condition known as “diabetic retinopathy.” Diabetic eye disease is a leading cause of blindness in the United States. Early detection of diabetic retinopathy (DR) is a fundamental part of the effort to reduce visual disability in diabetic patients. Clinical trials demonstrated that effective laser photocoagulation treatment of DR could reduce vision loss by 90%. These studies also underscore the need for early identification of DR at a time when laser photocoagulation is most effective.*

2008 Target: Maintain the proportion of patients with diagnosed diabetes who receive an annual retinal examination at the FY 2007 level of 49%.



Data source: CRS 8.0 electronic examination of 97,423 patient records.

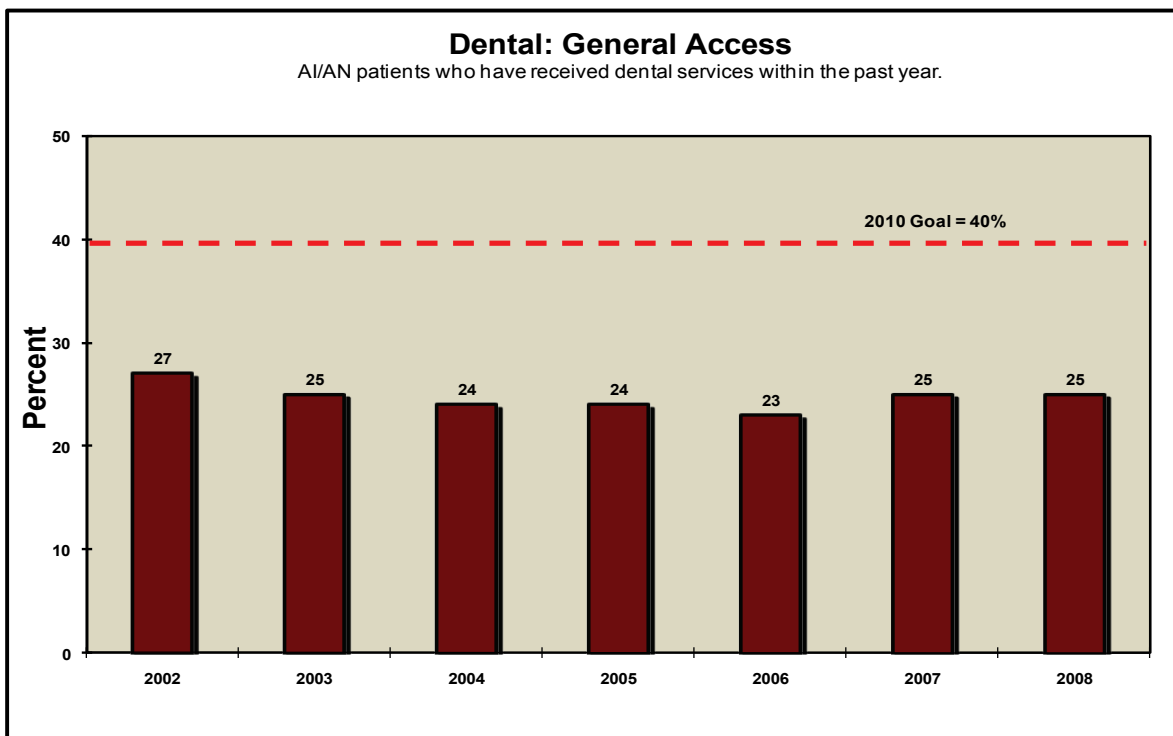
Results and Analysis: IHS met and exceeded the target for this measure. The proportion of patients with diabetes who received an annual diabetic retinal exam increased from 49% in FY 2007 to 50% in FY 2008. Prior to 2006, this measure tracked performance only at designated sites with Telemedicine Systems, but beginning in 2007, results represent all sites. IHS has improved performance on this measure through heightened attention to DR and by disseminating best practices of high performing sites.

Dental: General Access

Measure: Proportion of patients who receive dental services.

Importance: *This measure is directed at improving the oral health status of the American Indian and Alaska Native populations. American Indians and Alaska Natives report greater unmet dental health needs compared to non-Hispanic whites. Untreated tooth decay can cause abscesses and infections, pain, dysfunction and weight loss. Dental problems result in the loss of almost 2.5 million workdays each year. Access to dental care improves oral health as well as the overall health of AI/AN people.*

2008 Target: Maintain the proportion of patients who receive dental services at the FY 2007 level of 25%.



Data source: CRS 8.0 electronic examination of 1,256,963 patient records.

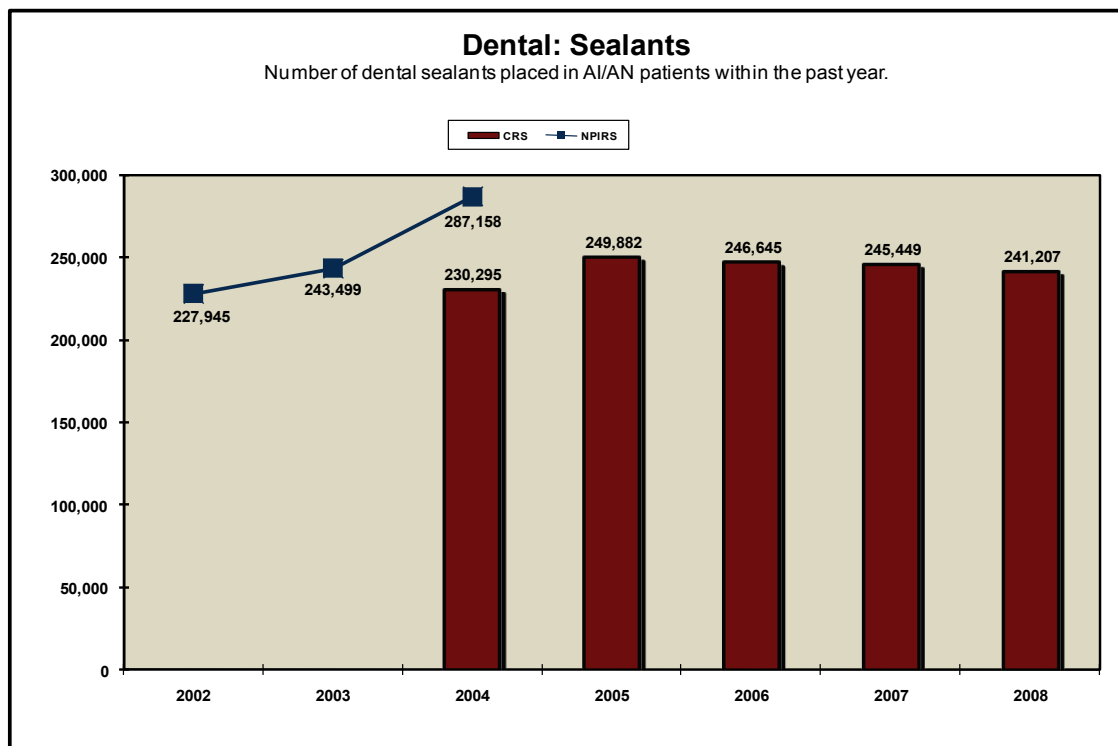
Results and Analysis: IHS met the target for this measure. In FY 2008, the proportion of patients that obtained access to dental services was maintained at the FY 2007 level of 25%. Although the target was met, the proportion of patients receiving dental care remains low, primarily because of a high vacancy rate in the dental program.

Dental: Sealants

Measure: Number of sealants placed per year in American Indian and Alaska Native patients.

Importance: *Surveys of American Indian and Alaska Native children have consistently identified them as having significantly higher dental decay rates than the general U.S. population. Dental sealants, a recognized standard in preventive dental care, are an effective measure for reducing dental decay rates and can be effectively applied by dental auxiliaries at relatively low cost. By reducing the incidence of dental decay, sealants improve oral health and represent a cost-effective preventive dental treatment.*

2008 Target: Maintain the number of sealants placed in American Indian and Alaska Native patients at the FY 2007 level of 245,449 sealants.



Data source: CRS 8.0 electronic examination of 1,256,963 patient records.

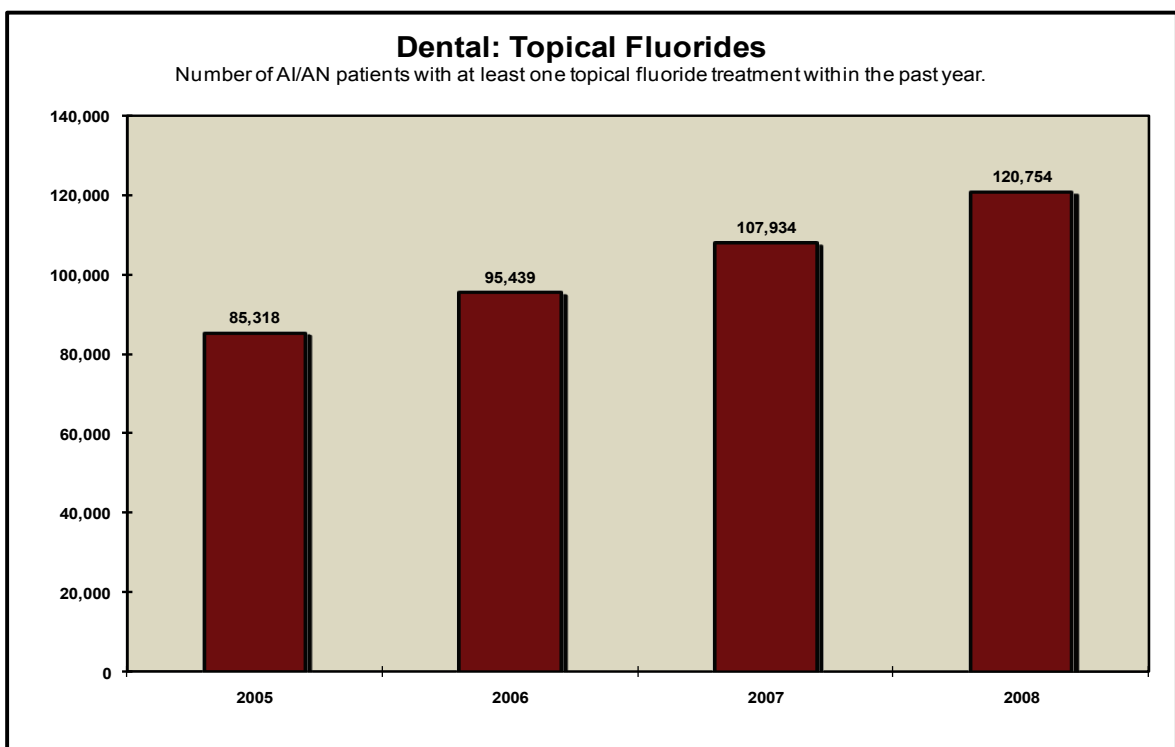
Results and Analysis: IHS did not meet the target for this measure. The number of sealants placed in AI/AN patients dropped by 4,242 (2%) from 245,449 in FY 2007 to 241,207 in FY 2008. This reflects both high dental vacancy rates, and the fact that many programs report they have few new patients eligible for sealants. Targets based on prior year performance levels are difficult to achieve for this measure for these reasons.

Dental: Topical Fluorides

Measure: Number of patients with one or more topical fluoride treatments.

Importance: *The professional topical application of fluoride is an accepted caries-preventive procedure that is appropriate for children, adolescents, and adults. Topical fluorides are also useful when applied to exposed root surfaces. This is especially beneficial for older patients, who are vulnerable to root caries and root sensitivity as a result of the loss of periodontal attachment and/or xerostomia (dry mouth). As a public health measure, targeting those at higher risk for caries is a cost-effective procedure. Criteria for moderate-risk to high-risk children, adolescents, and adults might include the following: more than one active smooth-surface carious lesion; white spot lesions; poor oral hygiene; and/or past history of caries.*

2008 Target: Maintain the number of patients who received one or more topical fluoride treatments at the FY 2007 level of 107,934.



Data source: CRS 8.0 electronic examination of 1,256,963 patient records.

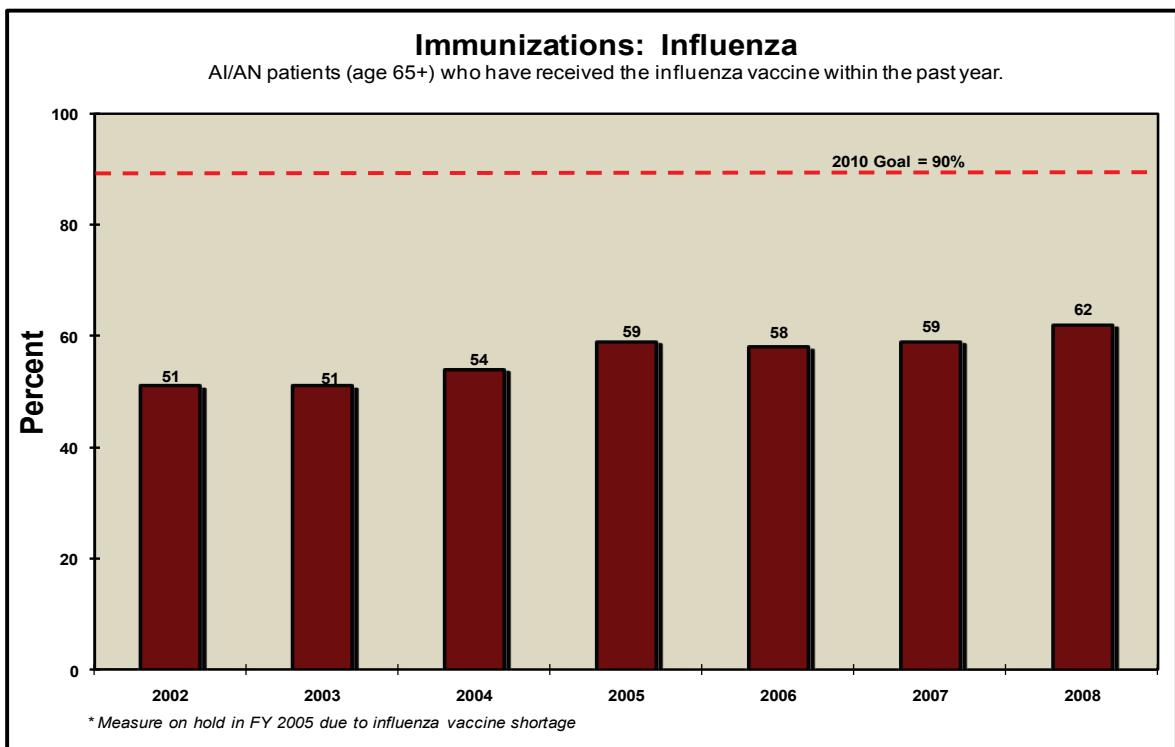
Results and Analysis: IHS met and exceeded the target for this measure. The number of patients who received one or more topical fluoride treatments increased by 12,820 (12%) from 107,934 in FY 2007 to 120,754 in FY 2008. Patients who receive at least one fluoride application have fewer new caries, reducing the cost of subsequent dental care and improving oral health.

Immunizations: Influenza

Measure: Influenza vaccination rates among adult patients age 65 years and older.

Importance: *Influenza is a highly contagious respiratory disease that can cause potentially life-threatening secondary infections. Elders who get influenza are also at increased risk of hospitalization and death from heart disease and stroke, but vaccination reduces that risk. In one observational study comparing vaccinated to non-vaccinated persons aged 65 and older in a managed care setting over two influenza seasons, researchers found a 19% and 16-23% reduction in hospitalization for cardiovascular and cerebrovascular events, respectively. In addition they found a 29-32% reduction in hospitalization for influenza or pneumonia and a 48-50% reduction in risk of death from all causes.*

2008 Target: Maintain the proportion of eligible patients with an influenza vaccination in the past year at the FY 2007 level of 59%.



Data source: CRS 8.0 electronic examination of 58,806 patient records.

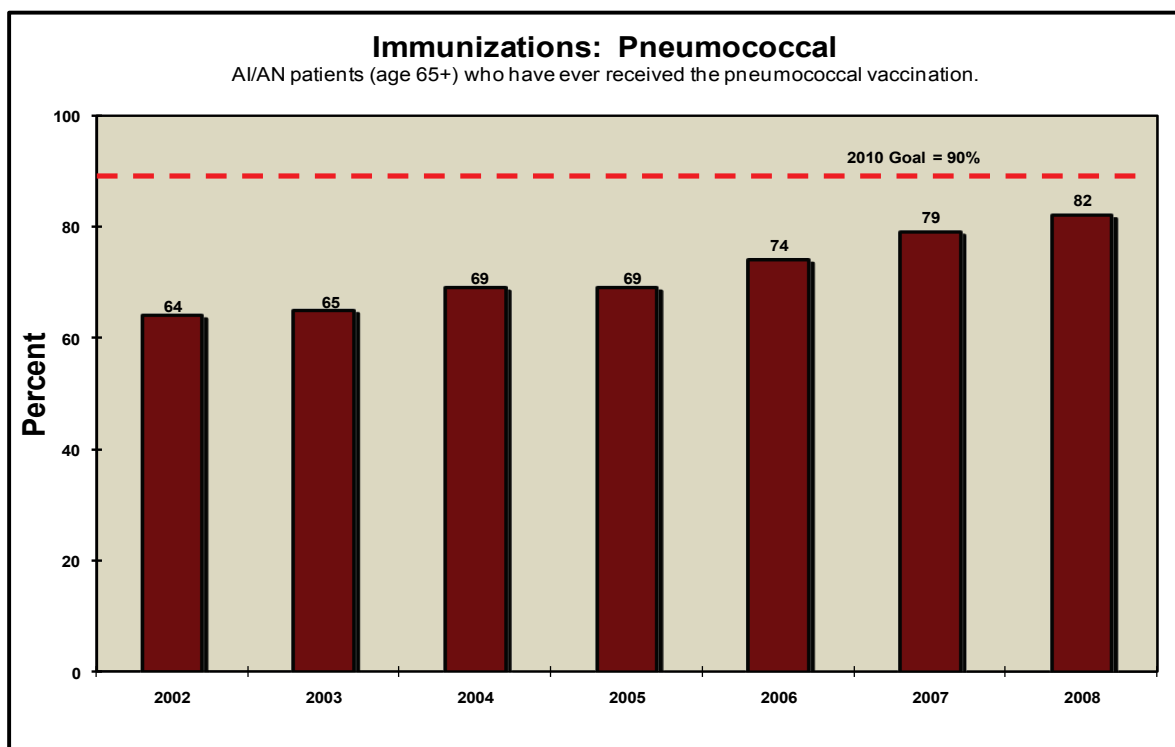
Results and Analysis: IHS met and exceeded the target for this measure. The proportion of eligible patients receiving an influenza vaccination increased from 59% in FY 2007 to 62% in FY 2008. By increasing the rate of influenza immunization among adults over age 65, the agency has helped protect more elders from complications associated with the flu.

Immunizations: Pneumococcal

Measure: Pneumococcal vaccination rates among adult patients age 65 years and older.

Importance: *Pneumococcal vaccination can reduce morbidity and mortality due to pneumococcal disease among older adults. Elder health is an increasingly important issue as more of the population survives beyond the age of 65. Pneumococcal disease includes pneumonia, bacteremia, and meningitis. Pneumococcal disease has the highest death toll from a vaccine-preventable bacterial disease; patients over the age of 65 account for more than 51% of the deaths from these diseases. Pneumococcal vaccination is a low-cost medical intervention that has been shown to prevent serious health complications among the elderly.*

2008 Target: Maintain the proportion of eligible patients with a pneumococcal vaccination ever at the FY 2007 level of 79%.



Data source: CRS 8.0 electronic examination of 58,806 patient records.

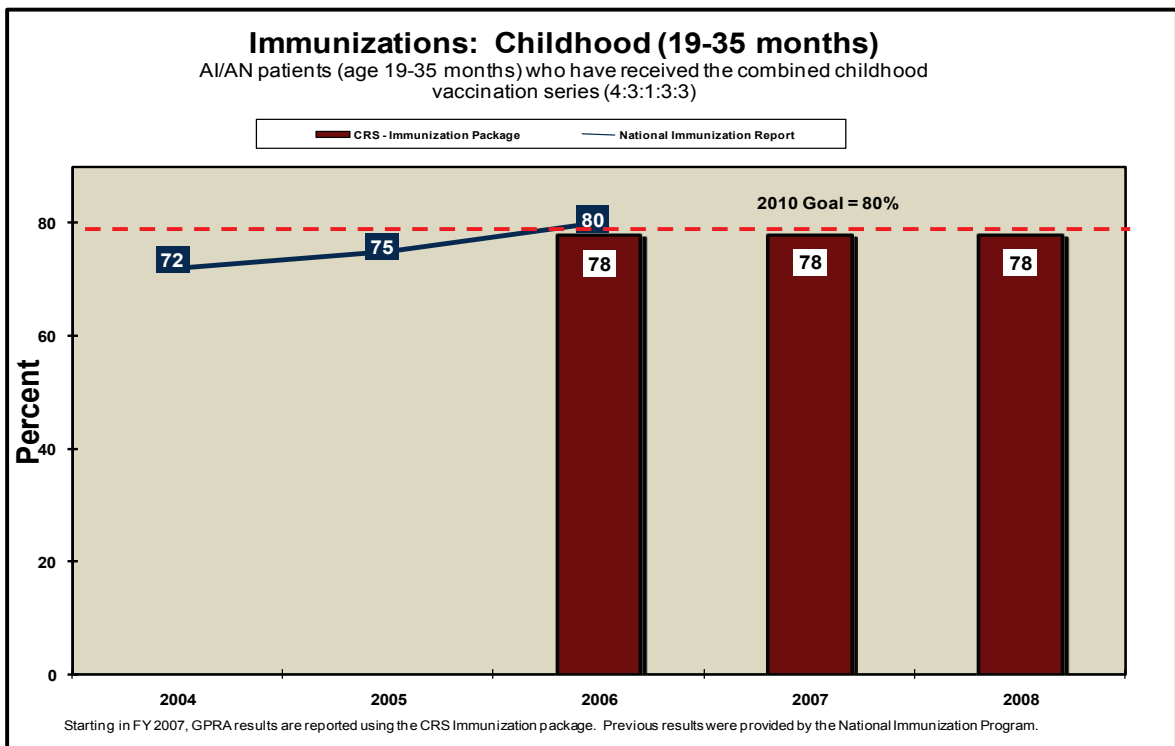
Results and Analysis: IHS met and exceeded the target for this measure. The number of patients aged 65 and over that ever received pneumococcal vaccination increased by 3 percentage points from 79% in FY 2007 to 82% in FY 2008. The increase is due to increased provider awareness of the measure, improved documentation, and targeted prevention campaigns.

Immunizations: Childhood (19-35 months)

Measure: Combined (4:3:1:3:3) immunization rates for AI/AN patients aged 19-35 months.

Importance: Routine immunizations represent a cost-effective public health measure that significantly improves the health of children. The Healthy People 2010 goal is 90% coverage for all routine immunizations for children aged 19-35 months and 80% coverage for the combined (4:3:1:3:3) series of vaccinations. The combined series includes coverage with 4 doses of DTaP, 3 doses of IPV, 1 dose of MMR, 3 doses of Hep B and 3 doses of Hib.

2008 Target: Maintain the proportion of American Indian and Alaska Native children aged 19-35 months who have received the combined series of recommended immunizations at the FY 2007 level of 78%.



Data source: CRS 8.0 electronic examination of 24,354 patient records in the RPMS Immunization Package. Prior to 2007, results were based on data provided by the National Immunization Program based on patient care records and public health nursing records of children who received immunizations at an IHS or tribal facility.

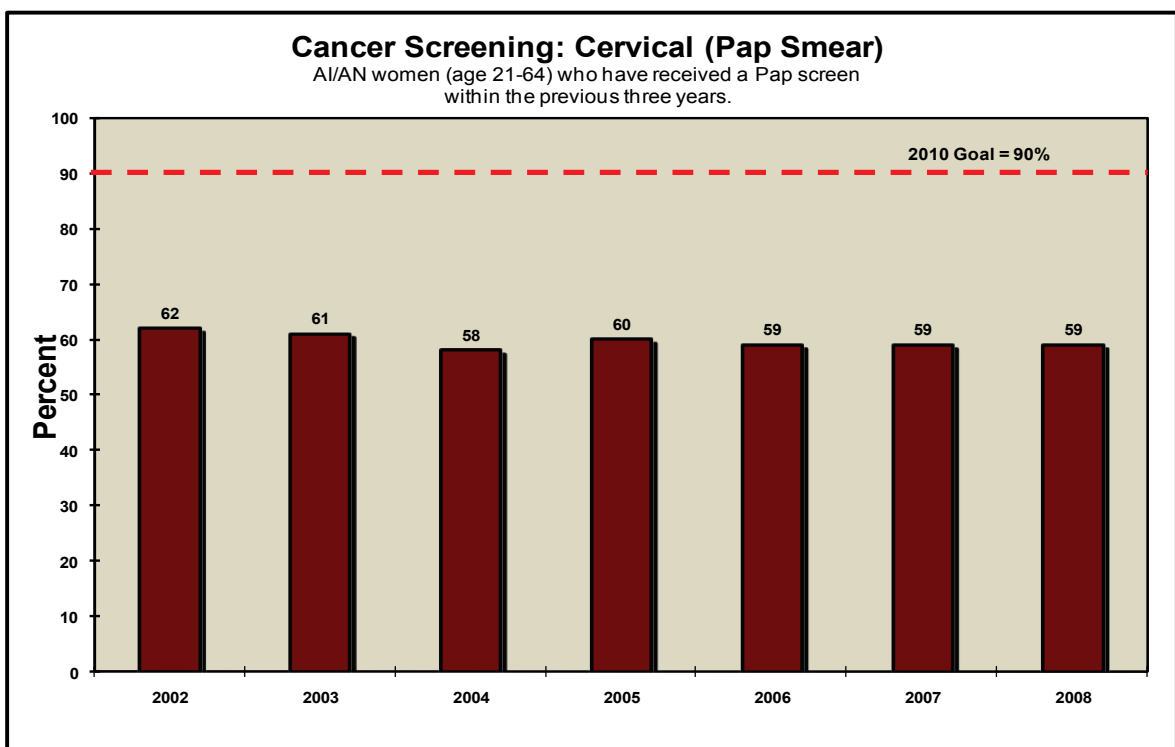
Results and Analysis: IHS met the target for this measure. The proportion of children ages 19-35 months receiving the combined series of recommended vaccines was maintained at 78% in FY 2008. Although IHS has been within reach of the Healthy People and Agency 2010 goals of an 80% immunization rate for the combined series of immunizations for the past three years, there has been no change in the overall rate in this period.

Cancer Screening: Cervical (Pap Smear)

Measure: Proportion of eligible women who have had a Pap screen within the previous three years.

Importance: *More American Indian women report having never had a Pap screen than any other racial or ethnic group. Regular screening with a pap smear lowers the risk of developing invasive cervical cancer by detecting pre-cancerous cervical lesions that can be treated. If cervical cancer is detected early, the likelihood of survival is almost 100 percent with appropriate treatment and follow-up. Cervical cancer was once the leading cause of cancer death among women, but it has dropped to thirteenth (among US All Races), thanks to the use of Pap screens.*

2008 Target: Maintain the proportion of eligible women aged 21-64 who have had a Pap screen within the previous three years at the FY 2007 level of 59%.



Data source: CRS 8.0 electronic examination of 255,431 patient records.

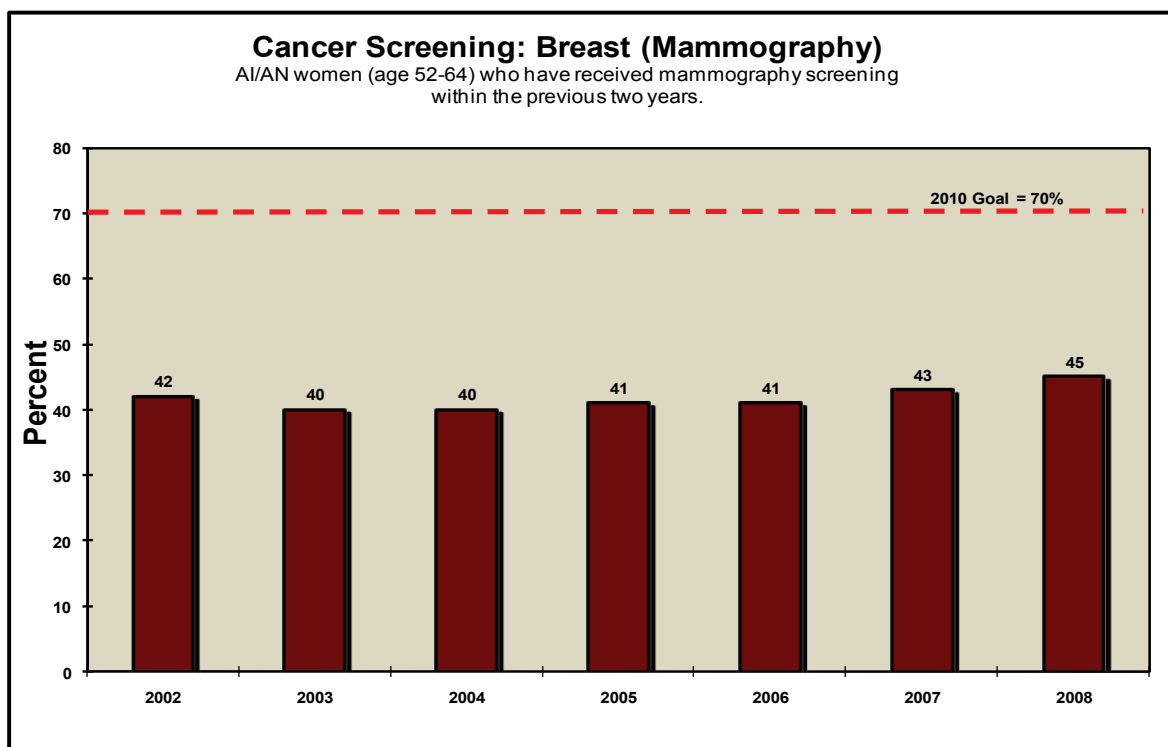
Results and Analysis: IHS met the target for this measure. In FY 2008, the proportion of eligible female patients (age 21-64) with a Pap screen within the previous three years was maintained at 59%. These results illustrate the difficulty of raising the Pap screening rate over time without increased resources; since the Agency began reporting this measure in 2002, there has been no significant change in the percentage of patients meeting this measure.

Cancer Screening: Breast (Mammography)

Measure: Proportion of eligible women who have had mammography screening within the previous two years.

Importance: *Biennial screening of women between the ages of 50 and 69 has been shown to be a cost-effective way to decrease the breast cancer mortality rate. Breast cancer is the second leading cause of cancer death among U.S. women (lung cancer is first). Although there has been overall improvement in breast cancer mortality rates since 1990, AI/AN women have not shared these gains. Between 1992 and 2002, breast cancer mortality rates declined for all racial and ethnic groups except American Indian/Alaska Native women, who experienced no decline in mortality rates. Regular mammography screening can reduce breast cancer mortality by 20-25%. AI/AN women diagnosed with breast cancer have lower 5-year survival rates in comparison to whites, mainly because their cancers are less likely to be found in earlier stages.*

2008 Target: Maintain the proportion of eligible women aged 52-64 who have had mammography screening within the previous two years at the FY 2007 level of 43%.



Data source: CRS 8.0 electronic examination of 50,928 patient records.

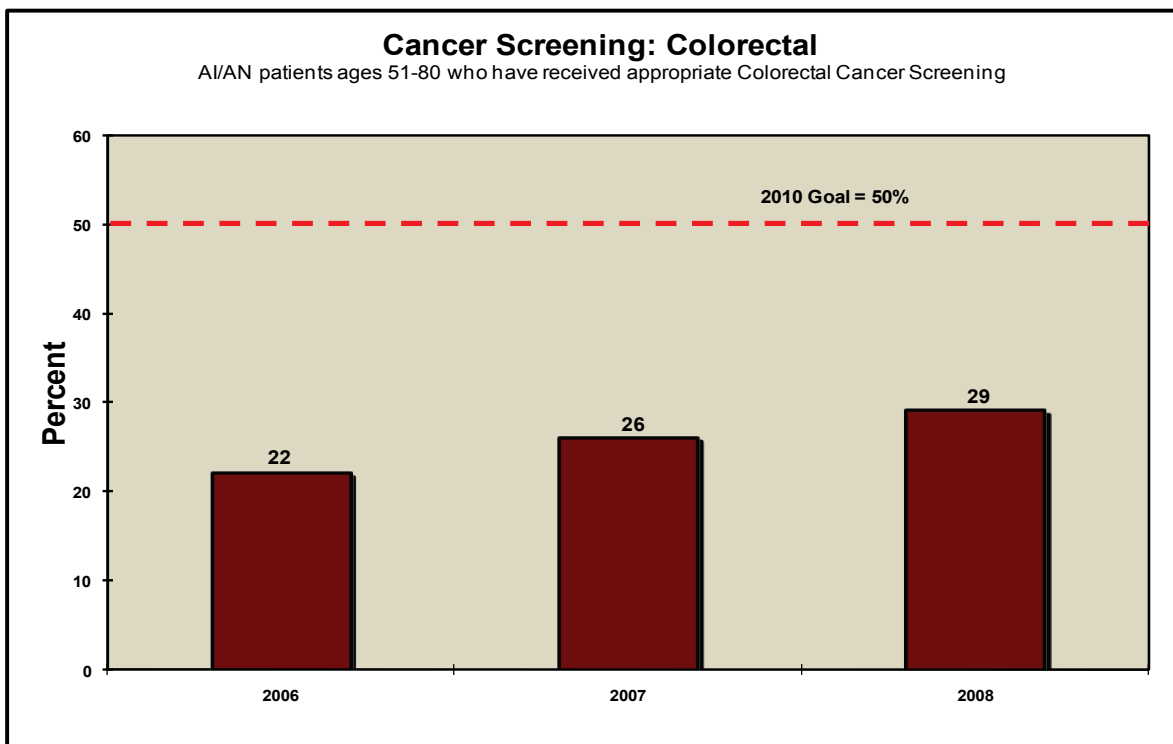
Results and Analysis: IHS met and exceeded the target for this measure. In FY 2008, the proportion of eligible patients (aged 52-64) who have had mammography screening increased from 43% in FY 2007 to 45%. While this is the highest mammography screening rate reported by the agency since 2002, as with the pap screening measure, there has been no significant change in the overall measure result in this time.

Cancer Screening: Colorectal

Measure: Proportion of eligible patients who have had appropriate colorectal cancer screening.

Importance: *Colorectal cancer incidence and mortality rates among the Alaska Native and Northern Plains American Indian population are well above the national average. Studies have found rates of 88.9 to 98.5 per 100,000 among these two groups compared to 61.3 to 61.4 for non-Hispanic whites in these areas. Screening can prevent many cases of colorectal cancer by detecting polyps; removing them can prevent cancer from occurring. Screening at the recommended frequency improves the chance that colorectal cancer will be detected at an earlier stage, when it is more likely to be cured by surgery alone. Patients diagnosed at the local stage have a five-year relative survival rate of about 90%, those diagnosed at the regional stage have a 67% five-year relative survival rate, and those diagnosed at the distant stage have a 10% five-year relative survival rate.*

2008 Target: Maintain the proportion of eligible patients who have received appropriate colorectal cancer screening at the FY 2007 rate of 26%.



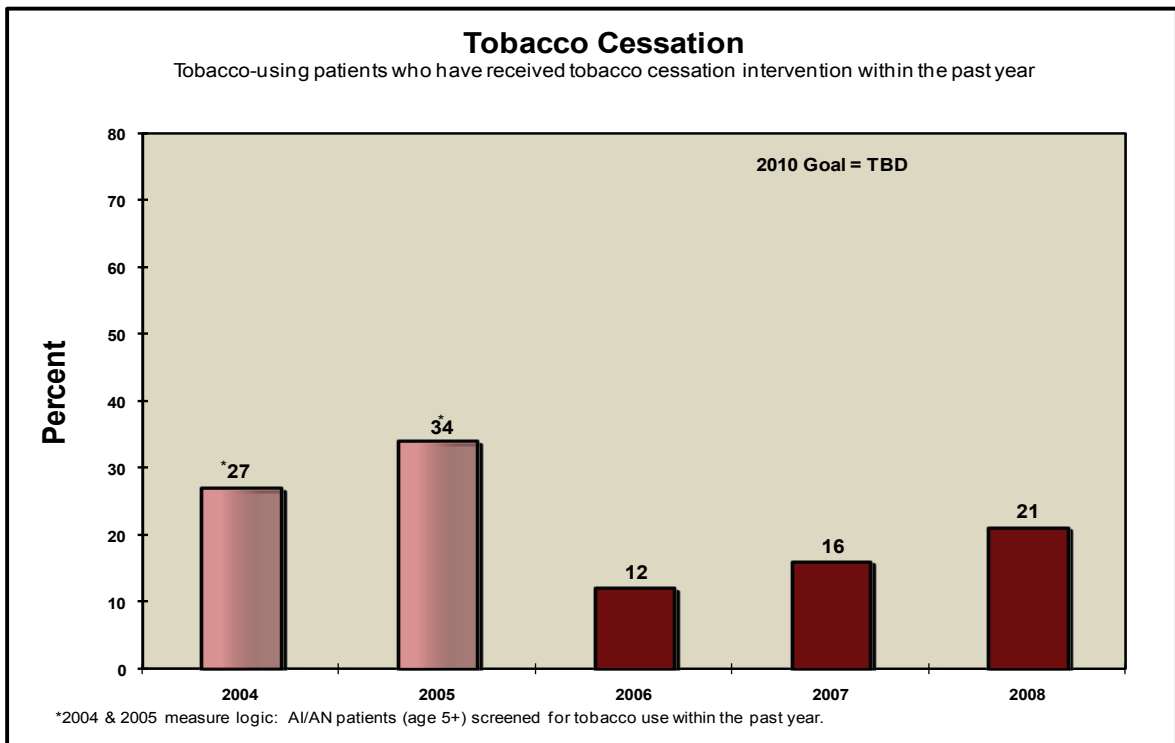
Data source: CRS 8.0 electronic examination of 150,788 patient records.

Results and Analysis: IHS met and exceeded the target for this measure. In FY 2008, the proportion of eligible patients who have had appropriate colorectal cancer screening increased by 3 percentage points from 26% in FY 2007 to 29%. The increase reflects increased provider and patient awareness of the value of regular screening.

Measure: Proportion of tobacco-using patients that receive tobacco cessation intervention.

Importance: *Cigarette smoking is the leading preventable cause of death in the United States, accounting for approximately 1 of every 5 deaths each year. American Indians and Alaska Natives had the highest prevalence of cigarette smoking (32.4%) of any group in the U.S in 2006. Tobacco users who quit enjoy longer and healthier lives, on average, than those who do not. Even long-time smokers can significantly reduce their risk of heart disease and other complications by quitting. Advice from a health care provider and group and individual cessation counseling can help smokers quit. Smoking cessation treatments have been found to be safe and effective. Moreover, tobacco cessation programs are more cost-effective than other common prevention interventions.*

2008 Target: Maintain the proportion of tobacco-using patients receiving tobacco cessation intervention in the past year at the FY 2007 rate of 16%.



Data source: CRS 8.0 electronic examination of 210,960 patient records.

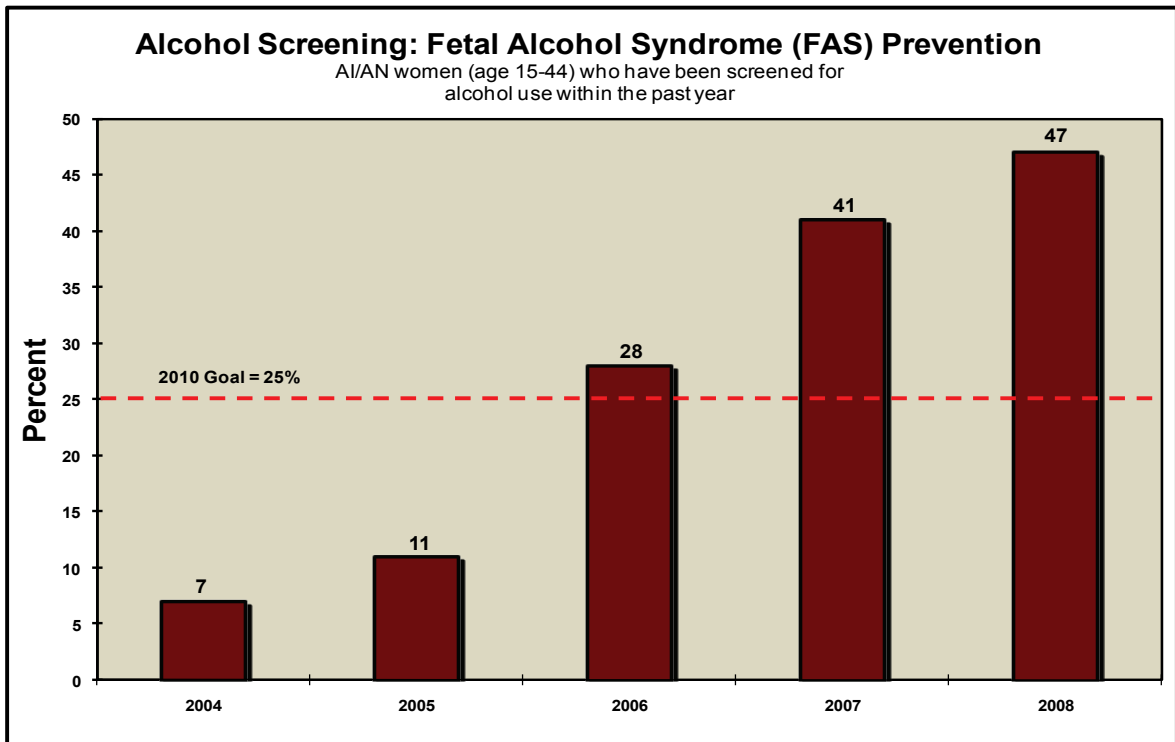
Results and Analysis: IHS met and exceeded the target for this measure. In FY 2008, 21% percent of tobacco-using patients received tobacco cessation intervention, an increase of 5 percentage points over the FY 2007 rate of 16%. The increase is due to growing provider awareness of the measure, and improved data entry for patient education and counseling. Prior to FY 2006, this measure tracked the number of patients screened for tobacco use.

Alcohol Screening (FAS Prevention)

Measure: Alcohol use screening (to prevent Fetal Alcohol Syndrome) in appropriate female patients.

Importance: *Heavy drinking during pregnancy can cause significant birth defects, including Fetal Alcohol Syndrome (FAS). FAS is the leading known, and preventable, cause of mental retardation. Rates of FAS are higher among American Indians and Alaska Natives than the general population. FAS cases have been reported at a rate of 9.8 per 1000 live births among southwestern Indians, 5.6 per 1000 in Alaska, and 2.5 per 1000 in Arizona, well above that of any other race or ethnicity. Studies have found alcohol consumption rates among AI/AN women to be higher than national averages.*

2008 Target: Maintain the proportion of women aged 15-44 screened for alcohol use in the past year at the FY 2007 level of 41%.



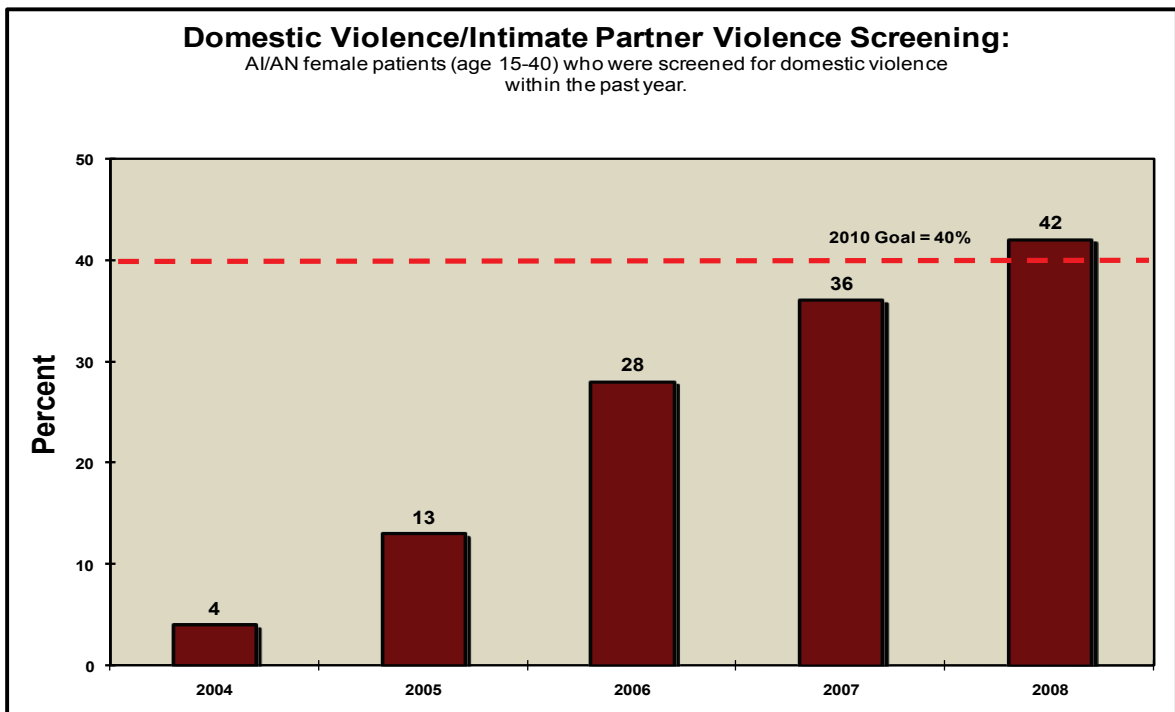
Data source: CRS 8.0 electronic examination of 232,482 records.

Results and Analysis: IHS met and exceeded the target for this measure. In FY 2008 the proportion of women screened for alcohol to prevent Fetal Alcohol Syndrome (FAS) increased by 6 percentage points, from 41% in FY 2007 to 47%. Alcohol Screening rates increased dramatically since the FY 2004 baseline year, due to increased provider awareness and an agency emphasis on behavioral health screening in the primary care setting.

Measure: Proportion of women who are screened for domestic violence at health care facilities.

Importance: *Thirty percent of women in the United States experience domestic violence at some time in their lives, and studies have found that AI/AN women experience domestic violence at rates higher than the national average. A survey of Navajo women seeking routine care at an IHS facility revealed that 14% had experienced physical abuse in the past year, and 42% had experienced physical abuse from a male partner at least once in their lives. The health consequences of intimate partner violence are numerous. Women who experience domestic violence are more often victims of nonconsensual sex and have higher rates of smoking, chronic pain syndromes, depression, generalized anxiety, substance abuse, and Post-Traumatic Stress Disorder*

2008 Target: Maintain the proportion of women aged 15-40 screened for domestic and intimate partner violence in the past year at the FY 2007 level of 36%.



Data source: CRS 8.0 electronic examination of 205,684 patient records.

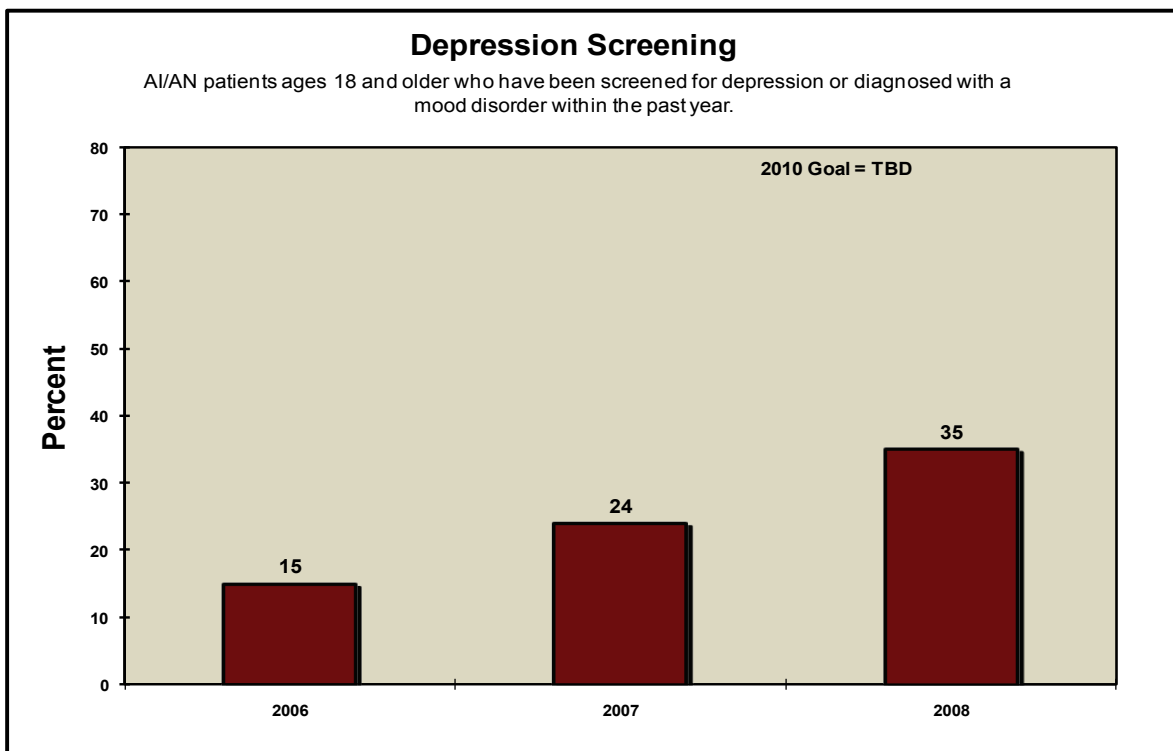
Results and Analysis: IHS met and exceeded the target for this measure. In FY 2008, the proportion of women screened for Domestic and Intimate Partner Violence (DV/IPV) was 42%, an increase of 6 percentage points above the FY 2007 rate of 36%. As with Alcohol Screening rates, DV/IPV Screening rates have improved dramatically since the FY 2004 baseline year. The increase can be attributed to increasing provider awareness of the importance of screening, improved documentation, and an agency emphasis on behavioral health screening in the primary care setting.

Depression Screening

Measure: Proportion of adults ages 18 and older who are screened for depression.

Importance: *About 1 in 20 adults experience major depression in a given year. Depression and anxiety disorders may affect heart rhythms, increase blood pressure, and alter blood clotting. Depression can also lead to elevated insulin and cholesterol levels. Depression or anxiety may result in chronically elevated levels of stress hormones such as cortisol and adrenaline. Depression also frequently increases the risk of suicidal behavior. The specific risk for suicide associated with depressive disorders is elevated 12- to 20-fold compared to the general population. Screening for depression is the first step toward identifying patients who need intervention, treatment, and follow up.*

2008 Target: Maintain the proportion of patients ages 18 and older that receive depression screening in the past year at the FY 2007 level of 24%.



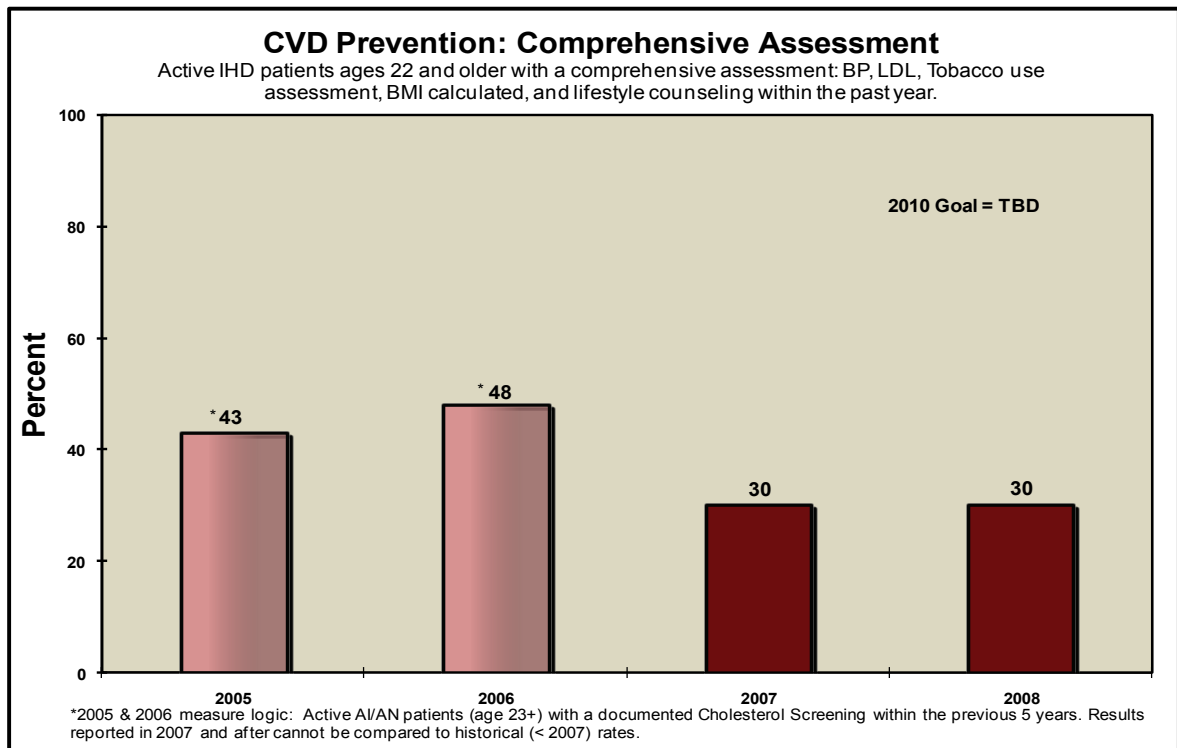
Data source: CRS 8.0 electronic examination of 573,860 patient records.

Results and Analysis: IHS met and exceeded the target for this measure. In FY 2008, 35% of patients age 18 and older were screened for depression, an increase of 11 percentage points over the FY 2007 rate of 24%. This measure has shown significant increases from the baseline result of 15% in FY 2006. Higher screening rates reflect increasing provider awareness of the importance of universal screening for depression among adults.

Measure: Proportion of IHD patients who have a comprehensive assessment for five CVD-related risk factors.

Importance: *Cardiovascular disease (CVD) causes more deaths in Americans of both genders and all racial and ethnic groups than any other disease. Minority and low-income populations have a disproportionate burden of death and disability from CVD. Cardiovascular disease represents the leading cause of death for American Indian and Alaska Native people above 45 years of age. Unlike other racial and ethnic groups, American Indians appear to have an increasing incidence of cardiovascular disease, likely due to the high prevalence of diabetes. Modifying risk factors offers the greatest potential for reducing CVD morbidity, disability, and mortality: high blood pressure, high cholesterol, smoking tobacco, excessive body weight, and physical inactivity.*

2008 Target: Maintain the proportion of active patients with Ischemic Heart Disease (IHD) aged 22 and older that receive a comprehensive CVD assessment at the FY 2007 level.



Data source: CRS 8.0 electronic examination of 33,105 patient records.

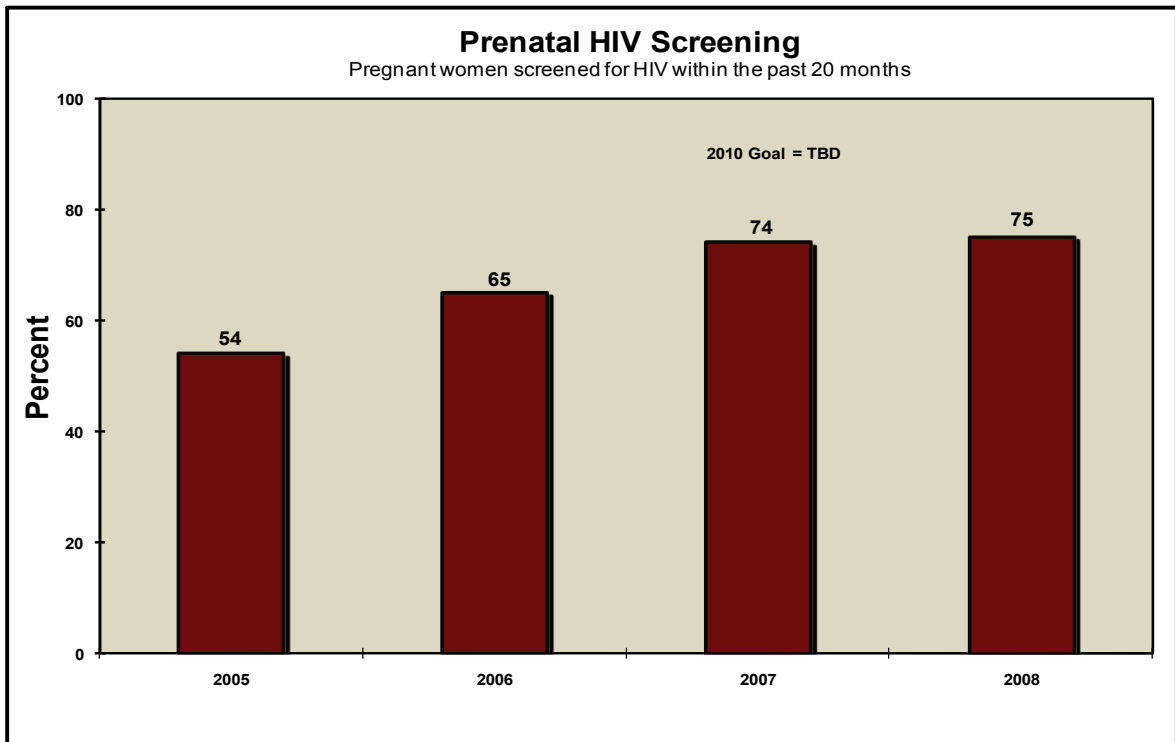
Results and Analysis: IHS met the target for this measure. In FY 2008, 30% of eligible patients receiving a comprehensive assessment for five CVD-related risk factors, maintaining the FY 2007 rate. Comprehensive assessment of risk factors and patient education are important standards of care for patients at risk of cardiovascular disease in the AI/AN population.

Prenatal HIV Screening

Measure: Proportion of pregnant women screened for HIV.

Importance: *The HIV/AIDS epidemic represents a growing threat to AI/AN women of childbearing age. From 2001 through 2004 the number of HIV/AIDS diagnoses for women aged 15-39, decreased for white, black, and Hispanic women, while the number of diagnoses for AI/AN women increased. An increase in HIV infections in newborn children is a potential consequence of higher HIV infection rates among women of childbearing age. Perinatal transmission accounts for 91% of all AIDS cases among children in the United States. Antiretroviral therapy during pregnancy can reduce the transmission rate to 2% or less. The transmission rate is 25% without treatment. Routine prenatal HIV testing of all pregnant women is the best way to avoid transmission of HIV from mother to infant.*

2008 Target: Maintain the proportion of pregnant women screened for HIV in the previous 20 months at the FY 2007 level of 74%.



Data source: CRS 8.0 electronic examination of 26,796 patient records.

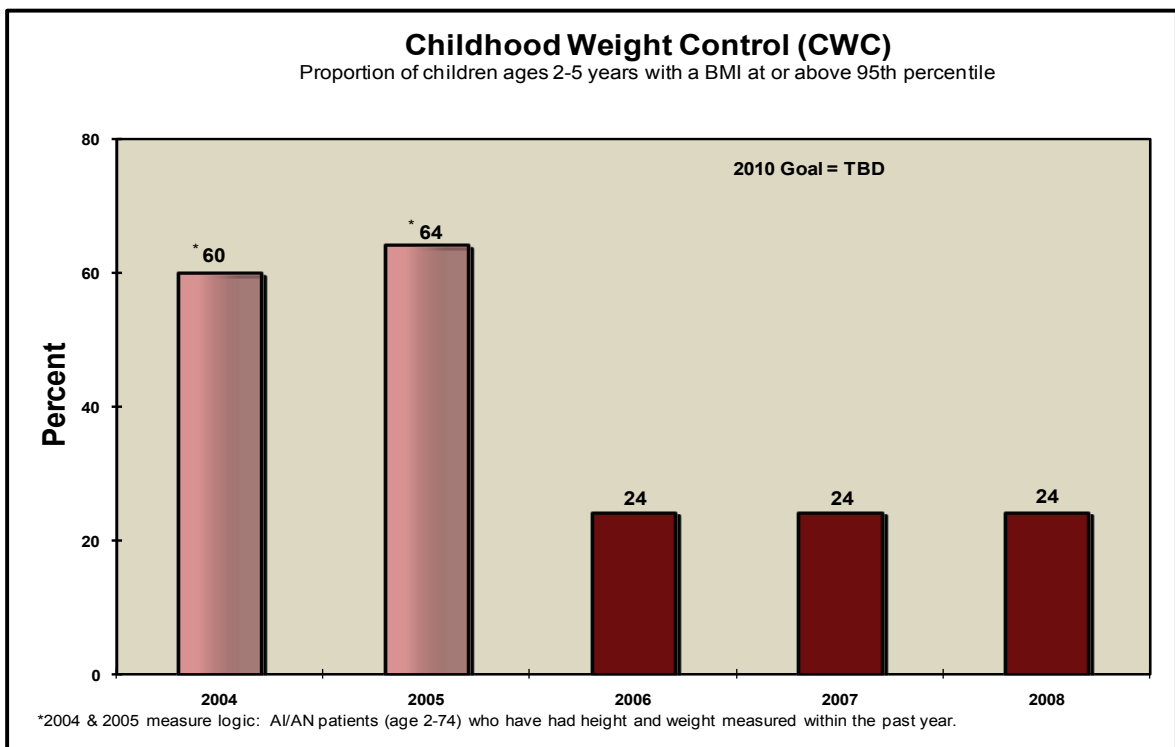
Results and Analysis: IHS met and exceeded the target for this measure. In FY 2008, 75% of prenatal patients were screened for HIV, an increase of 1 percentage point above the FY 2007 rate of 74%. Since it introduced this measure in FY 2005, the Agency has increased prenatal screening rates by 21 percentage points, though rates have leveled off within the past two years.

Childhood Weight Control

Measure: Proportion of children ages 2-5 years with a BMI at or above the 95th percentile.

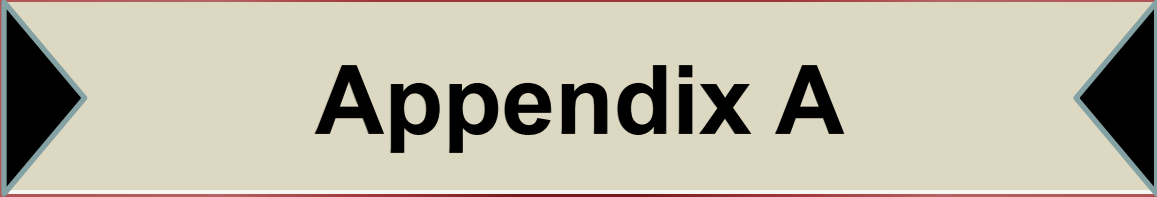
Importance: Rates of overweight among American Indian and Alaska Native children exceed the national averages. Overweight among children is defined as a Body Mass Index (BMI) at the 95th percentile or above. Children who are overweight tend to show related signs of morbidity, including elevated blood pressure, cholesterol, triglyceride, and insulin levels. Overweight children also are at risk for psychosocial difficulties arising from being obese, including shame, self-blame, and low self-esteem, all of which may impair academic and social functioning and carry into adulthood. One major effect of rising childhood overweight rates is the growing prevalence of type 2 diabetes among children.

2008 Target: Maintain the proportion of children ages 2-5 years with a BMI at the 95th percentile or higher at the FY 2007 level of 24%.



Data source: CRS 8.0 electronic examination of 37,814 patient records.

Results and Analysis: IHS met the target for this measure. In FY 2008, the proportion of children ages 2-5 with a BMI at the 95th percentile or higher was maintained at 24%. However, this rate far exceeds obesity rates among the general pediatric population, and represents a significant health risk factor for AI/AN children. IHS will move Childhood Weight Control to a long-term measure as of FY 2009.

A horizontal banner with a light yellow background and a thin blue border. The banner is centered on a dark red background. It features the text "Appendix A" in a bold, black, sans-serif font. On the left and right ends of the banner, there are black triangular shapes pointing inward, creating a double-headed arrow effect.

Appendix A

Summary of Key Findings

2008 CRS Clinical Measure Results Dashboard

Measure	2008 Results	2007 Results	2008 Target	Measure Status
Diabetes: Poor Glycemic Control	17%	16%	16%	Not Met
Diabetes: Ideal Glycemic Control	32%	31%	31%	Met
Diabetes: Blood Pressure Control	38%	39%	39%	Not Met
Diabetes: Dyslipidemia Assessment	63%	61%	61%	Met
Diabetes: Nephropathy Assessment	50%	40%	40%	Met
Diabetes: Retinopathy Assessment	50%	49%	49%	Met
Dental: General Access	25%	25%	25%	Met
Dental: Sealants	241,207	245,449	245,449	Not Met
Dental: Topical Fluorides	120,754	107,934	107,934	Met
Immunizations: Influenza (65+)	62%	59%	59%	Met
Immunizations: Pneumococcal (65+)	82%	79%	79%	Met
Immunizations: Childhood (19-35mo)	78%	78%	78%	Met
Cancer Screening: Cervical (Pap)	59%	59%	59%	Met
Cancer Screening: Breast (Mammography)	45%	43%	43%	Met
Cancer Screening: Colorectal	29%	26%	26%	Met
Tobacco Cessation	21%	16%	16%	Met
Alcohol Screening (FAS Prevention)	47%	41%	41%	Met
Domestic (Intimate Partner) Violence Screening	42%	36%	36%	Met
Depression Screening	35%	24%	24%	Met
CVD Comprehensive Assessment	30%	30%	30%	Met
Prenatal HIV Screening	75%	74%	74%	Met
Childhood Weight Control	24%	24%	24%	Met

Summary of Key Findings

2008 Non-CRS Measure Results Dashboard

Measure	2008 Result	2007 Result	2008 Target	Measure Status
YRTC Accreditation <i>Accreditation rate for Youth Regional Treatment Centers (in operation 18 months or more).</i>	91%	91%	100%	Not Met
IHS Direct Accreditation <i>Percent of IHS hospitals and outpatient clinics accredited.</i>	100%	100%	100%	Met
Patient Safety <i>Number of sites with a patient safety measurement system.</i>	94 sites	64 sites	74 sites	Met
Scholarships <i>Proportion of Health Professional Scholarship recipients placed in Indian health settings within 90 days of graduation.</i>	61%	47%	52%	Met
Public Health Nursing <i>GPRA-related activities (extracted from PHN database)</i>	415,945	427,700	449,085	Not Met
Injury Intervention <i>2008 measure was to administer an occupant protection survey in 11 Areas (Previous measure was projects reported in a web-based system).</i>	11 Areas	3 projects completed/ entered in 12 areas	11 Areas	Met
Unintentional Injury Rates <i>Unintentional injury mortality rate in AI/AN people (three-year rates centered on mid-year).</i>	Results available 12/2012	Results available 12/2011	94.8/100,000	Pending
Suicide Surveillance <i>Incidence of suicidal behavior reporting by health care (or mental health) providers</i>	1598 forms	1674 forms	1758 forms	Not Met
Environmental Surveillance <i>2008 measure: baseline of common environmental risk factors in communities in 11 Areas (prior measure was number of programs using a web-based automated system to report priorities.)</i>	12 Areas	32 programs	11 Areas	Met
Sanitation Improvement <i>Number of new or like-new AI/AN homes and existing homes provided with sanitation facilities. •Number of homes / percent of existing homes at Deficiency Level 4 or above</i>	21,811 •42%	21,819 •45%	21,800 •35%	Met
Health Care Facility Construction <i>Number of Health Care Facilities Construction projects completed. See specific Facility Construction report for status</i>	0 projects completed	2 projects completed	Complete 0 projects	Met

Indian Health Service Mortality Disparities Table

American Indian and Alaska Natives (AI/AN) in the IHS Service Area 2002-2004, US All Races 2003

	Rate AI/AN 2002-2004	Rate U.S. All Races 2003	Ratio: AI/AN: U.S. All Races
ALL CAUSES	1027.1	832.7	1.2
ALCOHOL INDUCED ¹	43.6	6.7	6.5
BREAST CANCER	21.0	25.3	0.8
CEREBROVASCULAR DISEASE	50.9	53.5	1.0
CERVICAL CANCER	4.7	2.5	1.9
DIABETES	74.2	25.3	2.9
DISEASES OF THE HEART	231.1	232.3	1.0
HIV INFECTION ²	3.1	4.7	0.7
HOMICIDE (assault)	12.2	6.0	2.0
INFANT DEATHS ³	11.7	6.9	1.7
MALIGNANT NEOPLASMS (ALL)	180.7	190.1	1.0
MATERNAL DEATHS ⁴	11.1	12.1	0.9
MOTOR VEHICLE CRASHES	51.2	15.3	3.3
PNEUMONIA & INFLUENZA	32.3	22.0	1.5
SUICIDE (Intentional self-harm)	17.9	10.8	1.7
TUBERCULOSIS	1.7	0.2	8.5
UNINTENTIONAL INJURIES	94.8	37.3	2.5

Source: Unpublished data: OPHS/Division of Program Statistics (2002-2004 AI/AN rates based on 2000 census with bridged – race categories).

1. Rate of alcohol-induced deaths is for the 1979-1981 three year period. The US all races rate is for 1980.

2. HIV was first classified in 1987. Rate of HIV is for the 1987-1989 three year period. The US all races rate is for 1988.

3. Per 1,000 live births.

4. Rate per 100,000 live births. Rate does not meet the standards of reliability due to small numbers. The break in comparability for maternal mortality has not been quantified by NCHS.

1. American Cancer Society, *Breast Cancer Facts and Figures 2007-2008*
2. American Cancer Society, *Colorectal Cancer Facts and Figures, 2008-2010*
3. American Cancer Society *Cancer Facts and Figures 2007*
4. American Dental Association. 2001 “Access to Care”
5. American Diabetes Association (ADA) 2005. “Diabetes Statistics for Native Americans”
6. Athas, W. Colon and Rectum Cancer. *Cancer in New Mexico: Changing Patterns and Emerging Trends, 1970-1996*. New Mexico Tumor Registry, New Mexico Department of Health, 1997.
7. Barrier PA. Domestic violence. *Mayo Clinic Proceedings*. 1998 Mar;73(3):271-4.
8. Bernard, V. B., N.C. Lee, M. Piper, L. Richardson. 2001. Race-specific results of Papanicolaou testing and the rate of cervical neoplasia in the National Breast and Cervical Cancer Early Detection Program, 1991-1998 (United States). *Cancer Causes and Control*, 12: 61-68.
9. Centers for Disease Control and Prevention. Cigarette Smoking Among Adults- United States, 2006. *Morbidity and Mortality Weekly Report* [serial online]. 2007;56(44):1157–1161 [cited 2007 Nov 8].
10. Centers for Disease Control and Prevention. 2007. National Diabetes Fact Sheet: National estimates and general information on diabetes in the United States. Atlanta, GA.
11. Centers for Disease Control and Prevention. 2008. CDC Fact Sheet: *HIV/AIDS Among Women*
12. Centers for Disease Control and Prevention. Office of Minority Health and Health Disparities Fact Sheet: Eliminate Disparities in Cardiovascular Disease (CVD).
13. Dietz WH. Health consequences of obesity in youth: childhood predictors of adult disease. *Pediatrics*. 1998;101:518-525
14. Early Treatment Diabetic Retinopathy Study Research Group. Early photocoagulation for Diabetic Retinopathy. ETDRS Report 9. *Ophthalmology*. 1991;98:766-785. Abstract
15. Fagot-Campagna A, Pettitt DJ, Engelgau MM, Burrows NR, Geiss LS, Valdez R, Beckles GL, Saaddine J, Gregg EW, Williamson DF, Narayan KM. 2000. Type 2 diabetes among North American children and adolescents: an epidemiologic review and a public health perspective. *J Pediatr* 136(5):664–672.
16. Fairchild D, Fairchild M, Stoner S. Prevalence of adult domestic violence among women seeking routine care in a Native American health care facility. *American Journal of Public Health*. 1998;88:1515-7.
17. Fetal alcohol syndrome: Alaska, Arizona, Colorado, and New York, 1995-1997: *MMWR. Morbidity and Mortality Weekly Report*. 2002 May 24;51(20) 433-5.

18. Flanders, S. 2003. Pneumococcal vaccination prior to hospital discharge. *Making Health Care Safer*. 12 pp.
19. Flegal KM, Carroll MD, Ogden CL, Johnson CL. Prevalence and trends in obesity among US adults, 1999-2000. *Journal of the American Medical Association*. 2002 Oct 9;288(14):1723-7.
20. Ganley A, Warshaw C, eds. *Improving the Health Care Response to Domestic Violence: A resource manual for health care providers*. Family Violence Prevention Fund. 1995.
21. Hamby S, Skupien M. Domestic violence on the San Carlos Apache reservation: Rates, associated psychological symptoms, and current beliefs. *IHS Provider* 1998, August.
22. Hankin, JR. Fetal Alcohol Syndrome Prevention Research. *Alcohol research & health : the journal of the National Institute on Alcohol Abuse and Alcoholism*. 2002;26(1):58-65
23. Harris EC, Barraclough B. Suicide as an outcome for mental disorders. A meta-analysis *Br J Psychiatry*. 1997. 170: 205-228
24. Jarrett RJ, Keen H. Hyperglycemia and diabetes mellitus. *Lancet*. 1976;2:1009-12
25. Laakso, M. Benefits of Strict Glucose and Blood Pressure Control in Type 2 Diabetes. *Circulation*, 1999; 99:461-462.
26. Lesperance F, Frasura-Smith N, Talajic M. Major depression before and after myocardial infarction: its nature and consequences. *Psychosomatic Medicine*, 1996; 58(2): 99-110.
27. Lieu TA, Cochi SL, Black SB, Halloran ME, Shinefield HR, Holmes SJ, Wharton M, Washington AE. Cost-effectiveness of a routine varicella vaccination program for US children. *Journal of the American Medical Association*; 1994 Feb 2;271(5):375-81.
28. May PA, Hymbaugh KJ, Aase JM, Samet JM Epidemiology of fetal alcohol syndrome among American Indians of the Southwest. *Social Biology*. 1983 Winter;30(4):374-87.
29. McFarlane J, Gondolf E. Preventing abuse during pregnancy: a clinical protocol. *MCN American Journal of Maternal Child Nursing* 1998 Jan-Feb;23(1):22-6.
30. Miller BA, Kolonel LN, Bernstein L, Young, Jr. JL, Swanson GM, West D, Key CR, Liff JM, Glover CS, Alexander GA, et. al. (eds). *Racial/Ethnic Patterns of Cancer in the United States, 1988-1992*, National Cancer Institute. NIH Pub. No. 96-4103. (SEER Program) Bethesda, MD , 1996.
31. Muelleman RL, Lenaghan PA, Pakieser RA. Battered women: injury locations and types. *Annals of Emergency Medicine* 1996;28(5):486-92.
32. National Cancer Institute (NCI). State Cancer Profiles, mortality rates by race/ethnicity (2002).
33. National Diabetes Information Clearinghouse. 2008. *DCCT and EDIC: The Diabetes Control and Complications Trial and Follow-up Study*.
34. National Immunization Survey 2003 tables.

35. National Institute of Diabetes and Digestive and Kidney Diseases. 1995. *The Pima Indians: Pathfinders for Health*. NIH Publication No. 95-3821. Washington, DC: U.S. Government Printing Office.
36. National Institute of Diabetes and Digestive and Kidney Diseases. National Diabetes Statistics fact sheet: general information and national estimates on diabetes in the United States, 2005. Bethesda, MD: U.S. Department of Health and Human Services, National Institute of Health, 2005.
37. National Institute of Mental Health. "Depression and Heart Disease"
38. National, State, and Urban Area Vaccination Coverage Among Children Aged 19-35 Months—United States, 2003. *MMWR: Morbidity and Mortality Weekly Report* 2004; July 30;53(29):658-661.
39. Nichol, et al. Influenza Vaccination and Reduction in Hospitalizations for Cardiac Disease and Stroke among the Elderly. *New England Journal of Medicine* 2003;348:1322-32.
40. Photocoagulation treatment of proliferative diabetic retinopathy: The Second Report of Diabetic Retinopathy Study Findings. *Ophthalmology*. 1978; 85: 82-106. Abstract
41. Pi-Sunyer FX. Health implications of obesity. *Am J Clin Nutr*. 1991;53(6 Suppl):1595S-1603S
42. Plichta S. The effects of women abuse on health care utilization and health status: A literature review. *Women's Health Issues*, 2 (3), 54-164.
43. Prevalence and characteristics of alcohol consumption and fetal alcohol syndrome awareness--Alaska, 1991 and 1993. *MMWR. Morbidity and Mortality Weekly Report*. 1994 Jan 14;43(1):3-6.
44. Regier DA, Narrow WE, Rae DS, et al. The de facto mental and addictive disorders service system. Epidemiologic Catchment Area prospective 1-year prevalence rates of disorders and services. *Archives of General Psychiatry*, 1993; 50(2): 85-94.
47. Robinson K, Baughman W, Rothrock G, et al. Epidemiology of invasive Streptococcus Pneumonia infection in the United States, 1995-1998. *Journal of the American Medical Association* 2001;285:1729-35.
48. Saslow, D., C.D. Runowicz, D. Solomon, A. Moscicki, R. A. Smith, H. J. Eyre, C. Cohen. 2002. American Cancer Society Guideline for the early detection of cervical neoplasia and cancer. *CA, A Cancer Journal for Clinicians*, 52: 342-362.
49. Schwartz MB, Puhl R. 2003. Childhood obesity: A societal problem to solve. *Obes Rev* 4(1):57-71.
50. Sisk, J. E. 2000. The best and worst of times: Use of adult immunizations. *American Journal of Preventive Medicine*, 19: 26-27.

Bibliography

51. Smith RA, Saslow D, Sawyer KA, Burke W, Costanza ME, Evans WP, Foster RS, Hendrik E, Eyre HJ, and Sener S. 2003 American Cancer Society Guidelines for breast cancer screening: Update 2004. *CA, A Cancer Journal for Clinicians*, 53:131-169.
52. Story M, Evans M, Fabsitz RR, Clay TE, Holy Rock B, Broussard B. The epidemic of obesity in American Indian communities and the need for childhood obesity-prevention programs. *American Journal of Clinical Nutrition*. 1999 Apr;69(4 Suppl):747S-754S.
53. U.S. Department of Health and Human Services (DHHS). Indian Health Service. *Trends in Indian Health, 2000-2001*
54. U.S. Department of Health and Human Services. 1998. *Tobacco Use Among U.S. Racial/Ethnic Minority Groups —African Americans, American Indians and Alaska Natives, Asian Americans and Pacific Islanders, and Hispanics: A Report of the Surgeon General*. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention.
55. U.S. Preventive Services Task Force. *Screening for Breast Cancer: Recommendations and Rationale*. February 2002. Agency for Healthcare Research and Quality, Rockville, MD.
56. US Preventative Services Task Force. Screening and Behavioral Counseling Interventions in Primary Care to Reduce Alcohol Misuse, April 2004.
57. US Public Health Service recommendations for human immunodeficiency virus counseling and voluntary testing for pregnant women. *MMWR: Recommendations and Reports*. 1995 Jul 7;44(RR-7):1-15.
58. Wagner, E. H., C. Davis, C. Homer, S. Hagedorn, B. Austin, A. Kaplan. 2002. Curing the system: Stories of change in chronic illness care. *Accelerating Change Today*: 9.
59. Warner KE, Smith RJ, Smith DG, Fries BE. Health and economic implications of a work-site smoking-cessation program: a simulation analysis. *Journal of Occupational and Environmental Medicine* 1996;38(10):981–92.
60. Charles Wiggins, David Espey, Phyllis. Wingo, Judith Kaur, Robin Taylor Wilson, Judith Swan, Barry Miller, Melissa Jim, Janet Kelly, Anne Lanier, Cancer Among American Indians and Alaska Natives in the United States, 1999–2004, *Cancer Supplement* September 1, 2008; 113 (5): 1142-52.
61. Wilt S, Olson S. Prevalence of domestic violence in the United States. *Journal of the American Medical Women's Association* 1996; 51(3):77-82.
62. Zuckerman et al. Health Service Access, Use, and Insurance Coverage Among American Indians/Alaska Natives and Whites: What role does the Indian Health Service Play? *American Journal of Public Health*: Jan 2004:94:1