
Bemidji Area Summary Trend Report for Diabetes and Diabetes Related Measures 2004-2008

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For additional copies, please contact:

Kristin Hill, Director
Great Lakes Inter-Tribal Epidemiology Center
Great Lakes Inter-Tribal Council, Inc.
PO Box 9
Lac du Flambeau WI 54538
(800) 472 – 7202
khill@glitc.org

**Great Lakes Inter-Tribal Epidemiology Center
Project Mission and Service Areas**

To support Tribal communities in their efforts to improve health and well-being by assisting with data needs through partnership development, community-based research, education, and technical assistance



Bois Forte Band	Prairie Island Sioux Tribe
Fond du Lac Tribe	Red Lake Nation
Grand Portage Band	Shakopee Mdewakanton Tribe
Greater Leech Lake Band of Ojibwe	Upper Sioux Community
Lower Sioux Indian Community	White Earth Tribe
Mille Lacs Band	



Bad River Tribe	Oneida Nation
Forest County Potawatomi	Red Cliff Tribe
Ho-Chunk Nation	Sokaogon Chippewa Tribe
Lac Courte Oreilles Tribe	St Croix Tribe
Lac du Flambeau Tribe	Stockbridge-Munsee Tribe
Menominee Nation	



Bay Mills Indian Community	Little River Band of Ottawa Indians
Grand Traverse Band of Ottawa/Chippewa	Little Traverse Bay Bands of Odawa Indians
Hannahville Indian Community	Match-e-be-nash-she-wish Band
Huron Potawatomi (Nottawaseppi)	Pokagon Band of Potawatomi Indians
Keweenaw Bay Indian Community	Saginaw Chippewa Indian Community
Lac Vieux Desert Tribe	Sault Ste Marie Tribe

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Introduction

The Bemidji Indian Health Service Area consists of Tribal clinics, urban programs, and Indian Health Service (IHS) hospitals in Michigan, Minnesota, and Wisconsin. As of fiscal year 2008, there are an **estimated 101,022 users** (American Indian or Alaska Native people who have had a face-to-face appointment with a provider during the last 3-year period) in the service area. This represents a 5% increase from fiscal year 2004.

The 2000 Census shows that, compared to the other 11 IHS service areas, the Bemidji Area has the **third highest graduation rate for High School** for people ages 25 and above, and the **seventh highest graduation rate for Bachelor's programs** for people ages 25 and above. **14.9% of males and 12.6% of females ages 16 and older are unemployed.** Although these rates are close to the national Indian Health Service average, Bemidji Area (BA) American Indians and Alaska Natives have the **third highest median household income** (only lower than that for California and Phoenix) and the **fourth lowest rate for percent of population living below poverty.**

Despite some of the positive measures of social determinants of health described above, Bemidji Area American Indians and Alaska Natives experience a number of negative health outcomes. IHS information from 1999-2001 shows that, compared to the other 11 IHS service areas, **BA babies are born with the second highest rate of high birth weight, the third highest rate of mothers who drank alcohol during pregnancy, and the highest rate of mothers who smoked during pregnancy.** During the same period, American Indians and Alaska Natives living in the BA also had the **second highest age and misreporting adjusted all causes death rate.**

From 1999-2001, **diabetes mellitus accounted for 5.4% of total deaths** for American Indians and Alaska Natives in the Bemidji Area. This is the second highest rate documented for all IHS service areas and is only lower than Tucson's (7.2%). When comparing rates of death per 100,000 people, BA American Indians and Alaska Natives have the **third highest age-adjusted diabetes mortality** (112 people per 100,000 people).

Though diabetes remains an important focus area for health promotion and disease prevention, it also represents an opportunity to make systems changes that may improve health care quality in Indian country.

About this Report

The Bemidji Area Summary Trend Report for Diabetes and Diabetes Related Measures presents aggregated information from diabetes audits submitted by Indian Health Service hospitals, Tribal clinics, and urban health centers (ITUs) in Minnesota, Wisconsin, and Michigan. This information is specifically for diagnosed diabetic patients who have an active record in the diabetes registry. Therefore, it does not represent people who have not visited the ITU facility or people who have not been diagnosed with diabetes during the audit period.

From 2004 to 2008, there were a total of **1,696** (2004), **2,000** (2005), **4,395** (2006), **4,898** (2007), and **3,038** (2008) charts audited from facilities within the three-state area. Crude prevalence estimates for BA ITUs in 2006 range from as low as 2% to as high as 19%. The 2006 Bemidji Area diabetes prevalence for adults ages 20 years and above age adjusted to the US population is 18% using user population numbers and 14% using service population numbers. Although there is a significant difference between the two estimates for some IHS service areas, overall, the Bemidji Area remains in the top third for highest rates when compared to other IHS service areas.

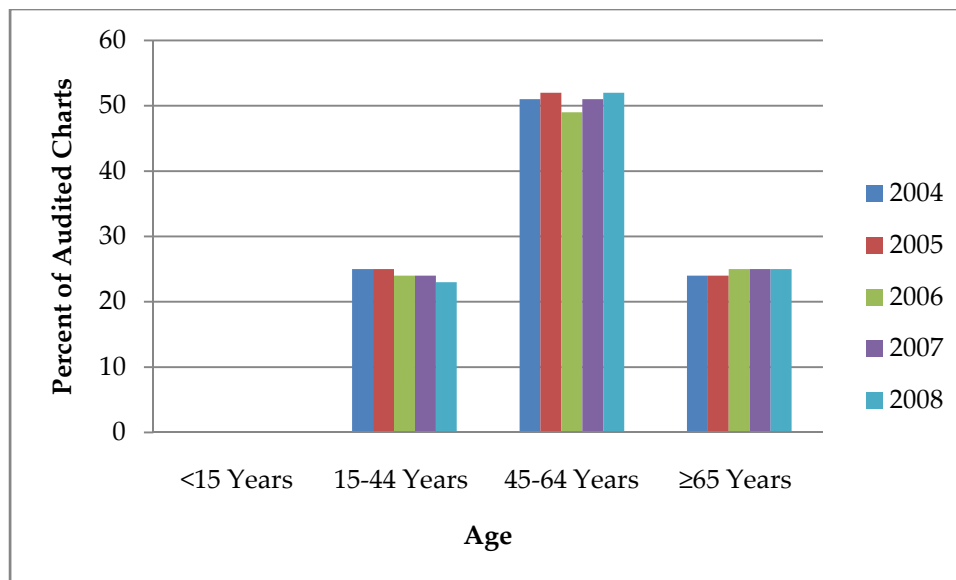
The Great Lakes Epidemiology Center produces this report to encourage ITUs to compare local population health and disease indicators related to diabetes to service area averages. The information has some limitations, the main one being not accounting for individuals with undiagnosed diabetes; however, as stated in all our reports, IHS service population estimates closely agree with estimates from other studies about diabetes among American Indians and Alaska Natives.

Bemidji Area Averages for Diabetes Related Health and Disease Indicators

Age and Duration of Diabetes

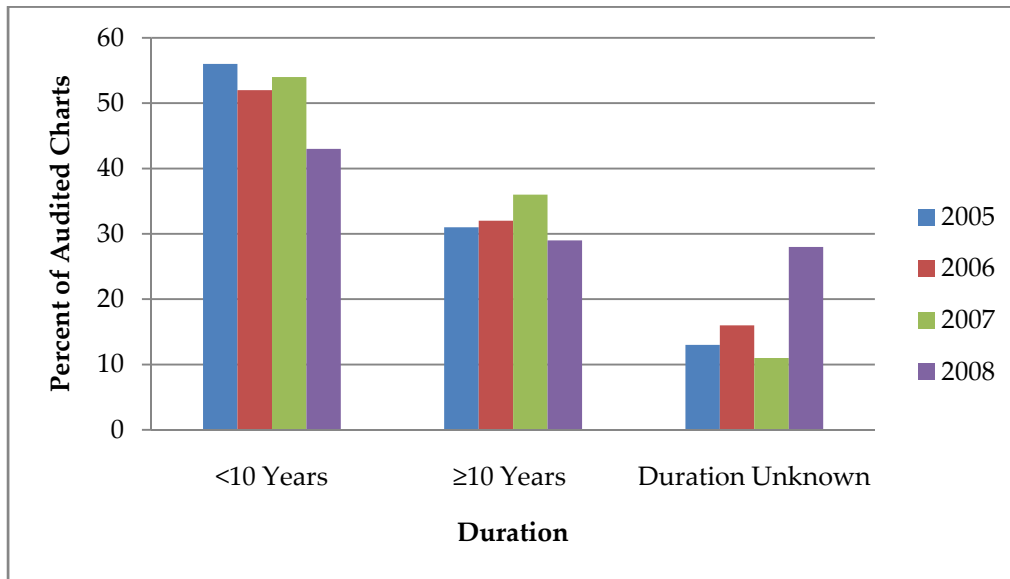
Of all audited charts, about 50% were for patients who were between the ages of 45 years to 64 years. This rate did not change much from 2004 through 2008. There are almost no charts for patients less than 15 years of age, and about 25% of charts were for patients between 15 years to 44 years, and 25% of charts were for patients 65 years and older.

Figure 1a. Age



In the Bemidji Area, audited charts show that more patients have had diabetes for less than 10 years compared to 10 years or more. From 2005 through 2008, the amount of charts for patients with diabetes for less than 10 years decreased, but the amount of charts for patients with diabetes for 10 years or more stayed the same. This is due to the large amount of charts for patients who do not have a recorded duration. This number was around 12% from 2005 through 2007, but increased to almost 30% in 2008.

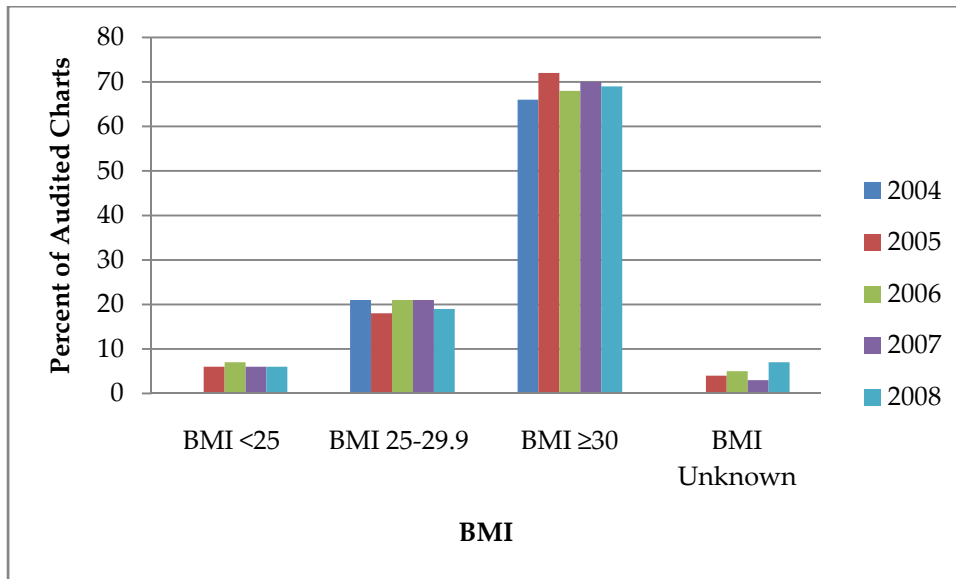
Figure 1b. Duration of Diabetes



Diabetes Care Measures: BMI, Blood Sugar, Blood Pressure, and Tobacco Use

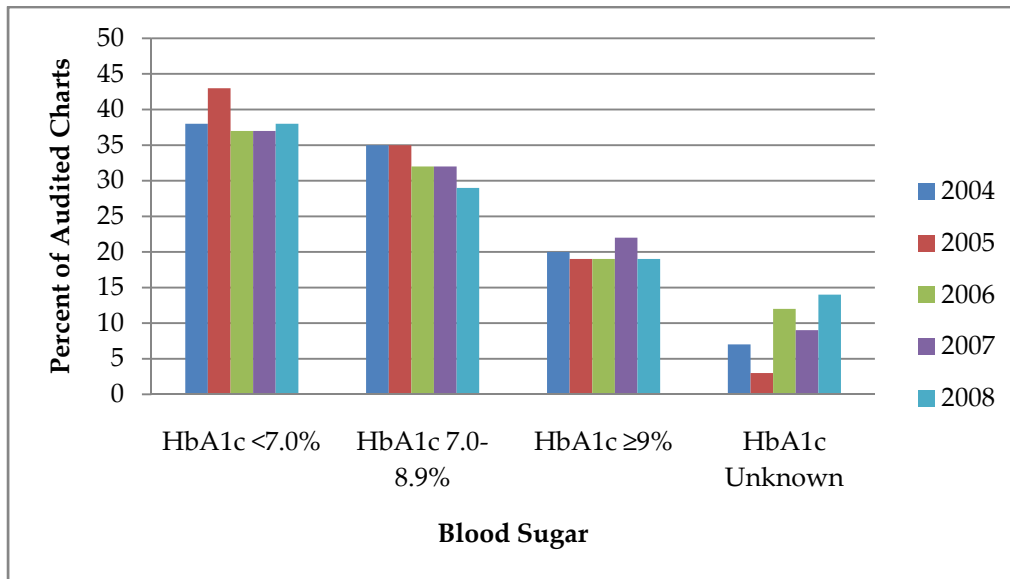
Based on BMI, nearly 70% of all patients with audited charts were obese. This rate is relatively stable, but it would be better if it decreased over time. From 2004 through 2008, around 20% of all patients with audited charts were overweight and only 5% had normal weight.

Figure 2a. BMI



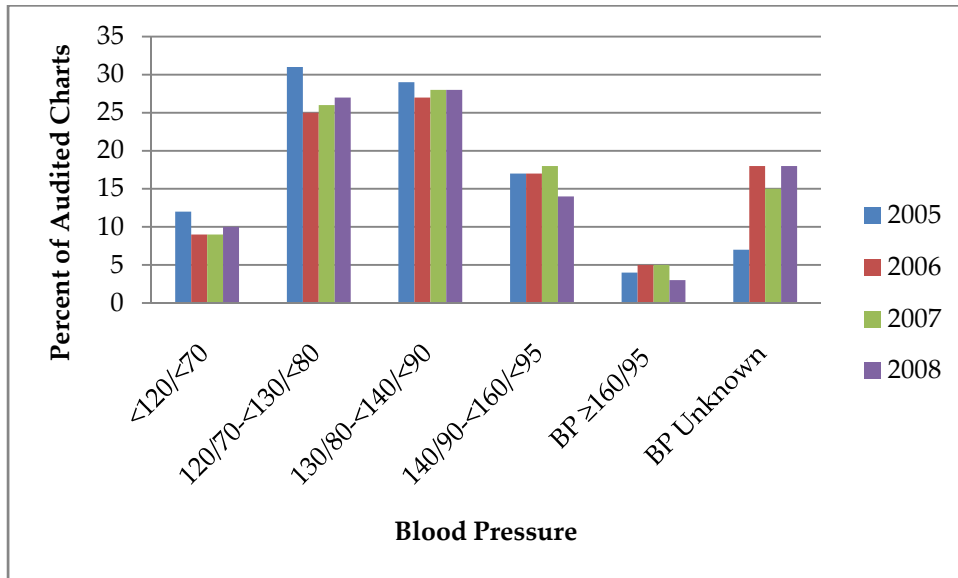
From 2004 through 2008, about 37% of patients with audited charts achieved target HbA1c levels of less than 7.0%. Though there was a small spike in 2005, that trend was not continued over time. About 50% of patients with audited charts have HbA1c levels of 7.0% or above. The rate of charts for patients with unknown HbA1c levels is also increasing. At its lowest, this rate was only 3%; however, in 2008, 14% of charts audited in Bemidji Area ITUs were for patients with unknown or undetermined HbA1c levels.

Figure 2b. Blood Sugar



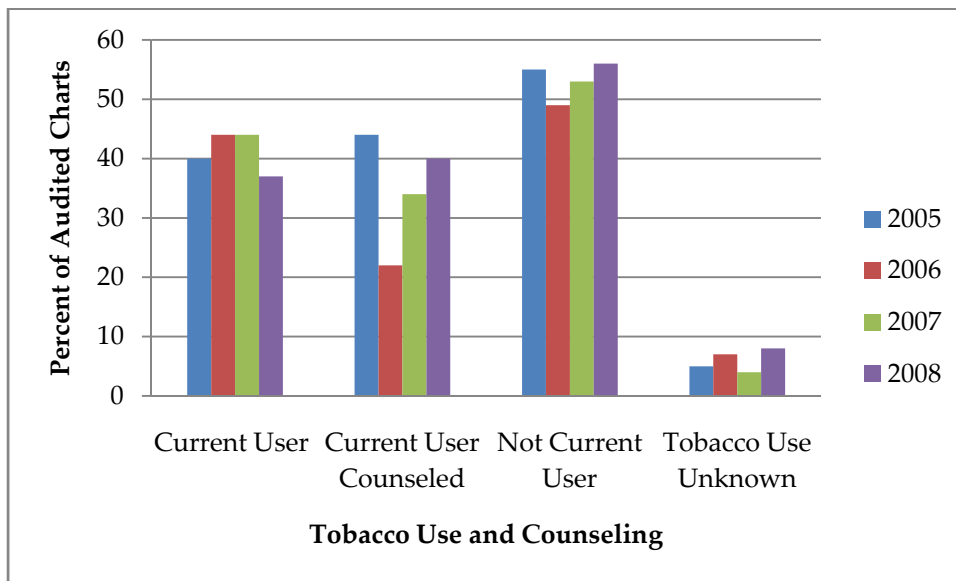
In 2005, 43% of patients with audited charts had blood pressure levels that met the IHS target of less than 130/80 mmHg. In the following years, through 2008, this rate decreased and stabilized at about 35%. Rates of patients with unknown or undetermined blood pressures increased from 7% in 2005 to 18% in 2008.

Figure 2c. Blood Pressure



From 2005 through 2008, tobacco use documentation rates were high but counseling rates for current users were low. Of all current users, who made up about 40% of patients with audited charts, only an average of 35% of them received counseling. Additionally, during the four year period, rates for current users increased.

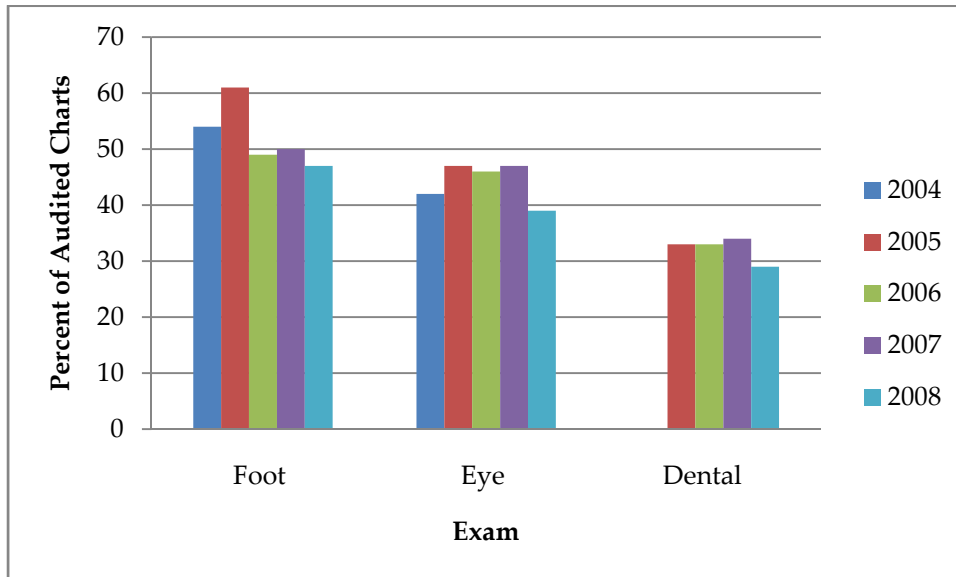
Figure 2d. Tobacco Use and Counseling



Preventive Exams and Vaccinations

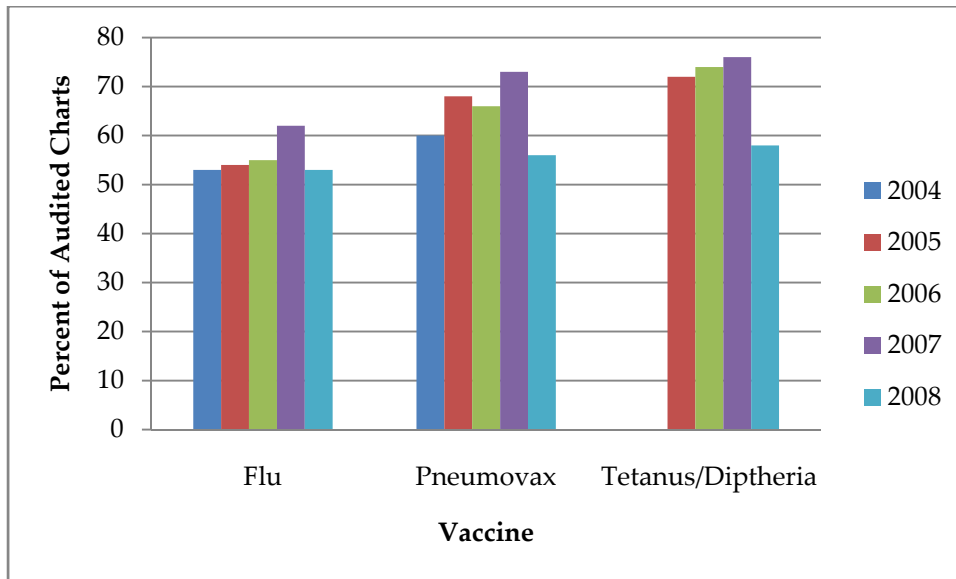
Though dental exam rates for patients with audited charts have remained relatively stable, foot and eye exam rates have not. On average, only 32% of patients are getting dental exams, 44% of patients are getting eye exams, and 52% of patients are getting foot exams. All patients with diagnosed diabetes should be getting these exams yearly and focused efforts to increase preventive exam rates are needed.

Figure 3a. Preventive Exams



Though dental exam rates for patients with audited charts have remained relatively stable, foot and eye exam rates have not. On average, only 32% of patients are getting dental exams, 44% of patients are getting eye exams, and 52% of patients are getting foot exams annually. All patients with diagnosed diabetes should be getting these exams yearly and focused efforts to increase preventive exam rates are needed.

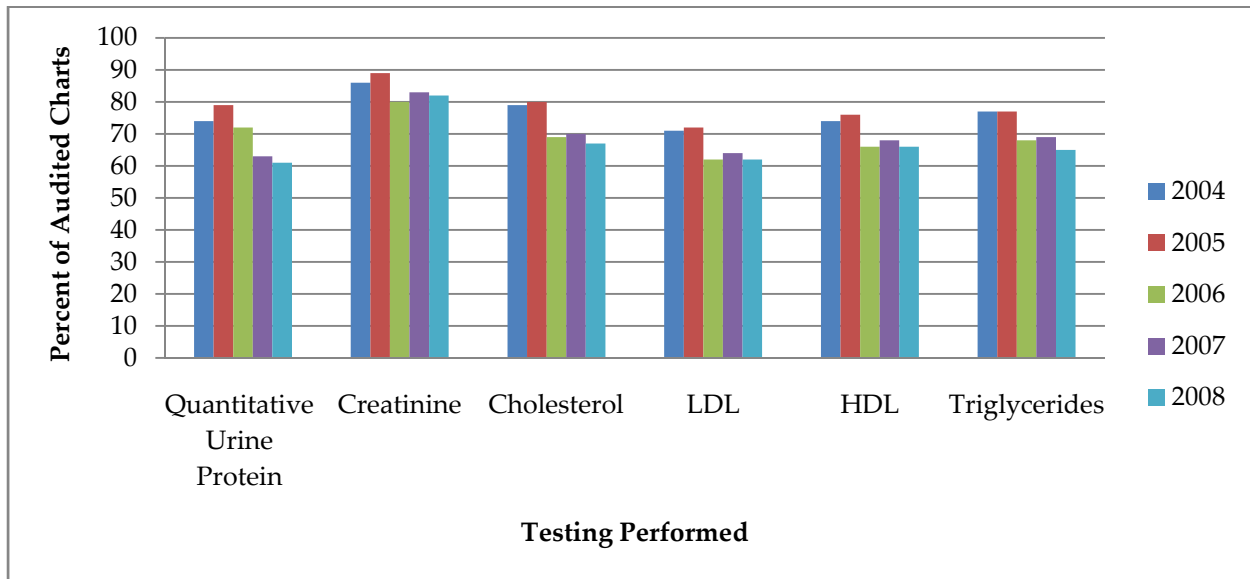
Figure 3b. Vaccinations



Laboratory Tests

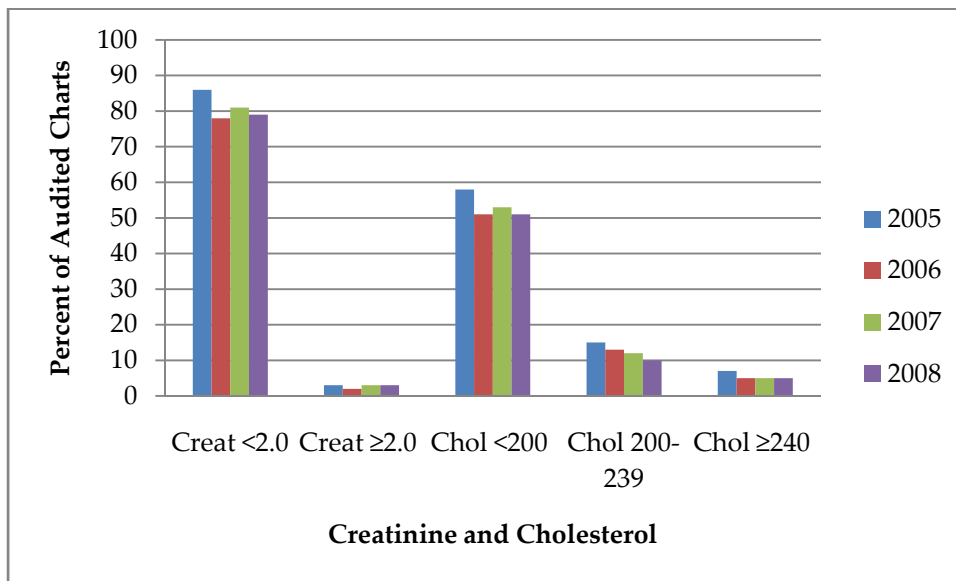
There is a drop in testing rates for all indicators presented below from 2005 to 2006. Average rates during the period from 2004 to 2008 going from left to right from quantitative urine protein testing to triglyceride testing are 70%, 84%, 73%, 66%, 70%, and 71%.

Figure 4a. Laboratory Tests Performed



Creatinine and cholesterol levels from patients with audited charts from the Bemidji Area are presented below. There have been no dramatic changes since 2005, though there are less people with higher cholesterol levels. On average, about 53% of audited charts were for patients with total cholesterol under 200 mg/dL.

Figure 4b. Creatinine and Cholesterol



On average, 39% of patients with audited charts have LDL cholesterol levels below 100 mg/dL. Like with total cholesterol, most patients have levels in optimal ranges and less of them are testing at borderline high and high levels.

Figure 4c. LDL Cholesterol

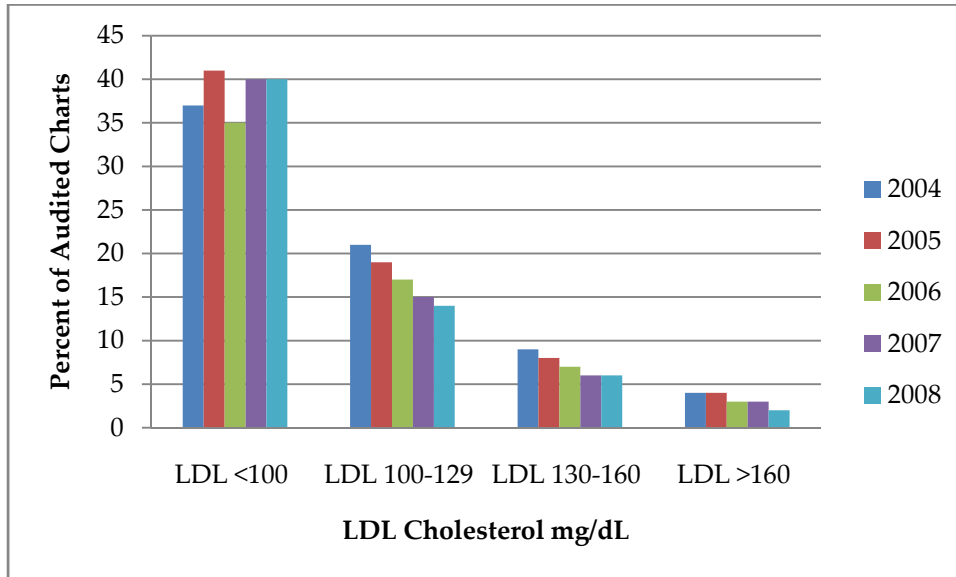
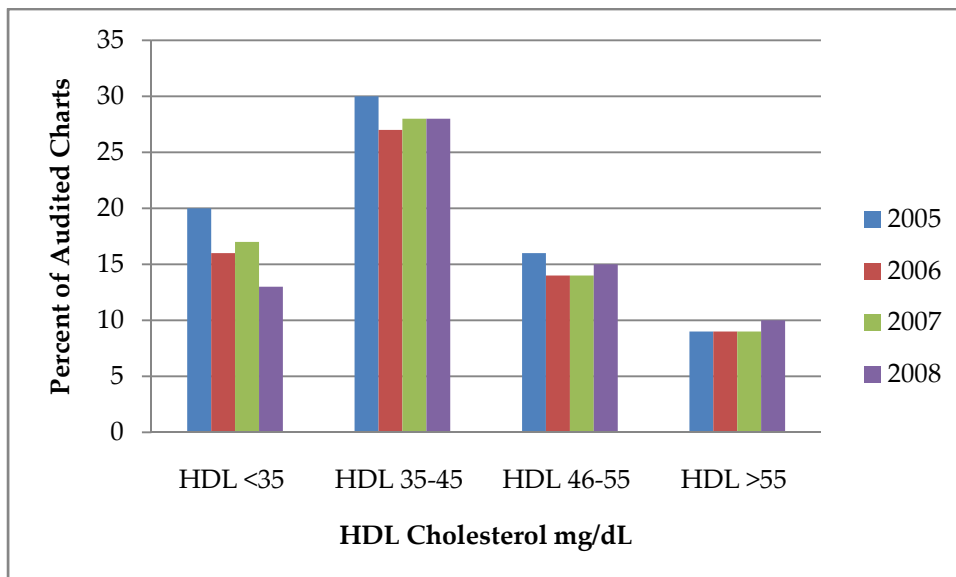
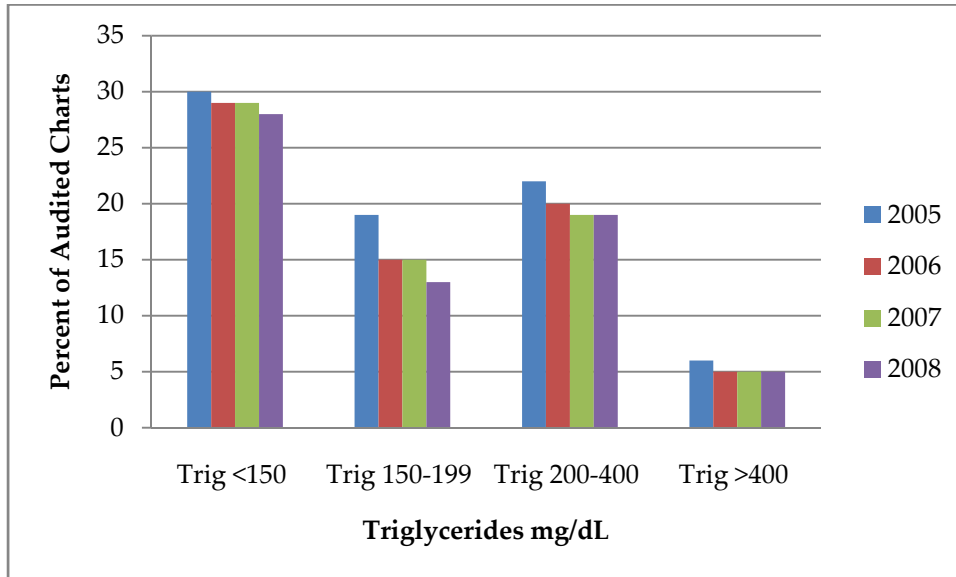


Figure 4d. HDL Cholesterol



A little less than a third of Bemidji Area patients with audited charts have optimal triglyceride levels under 150 mg/dL. Rates of charts for people with higher levels (greater than 150 mg/dL) are decreasing over time.

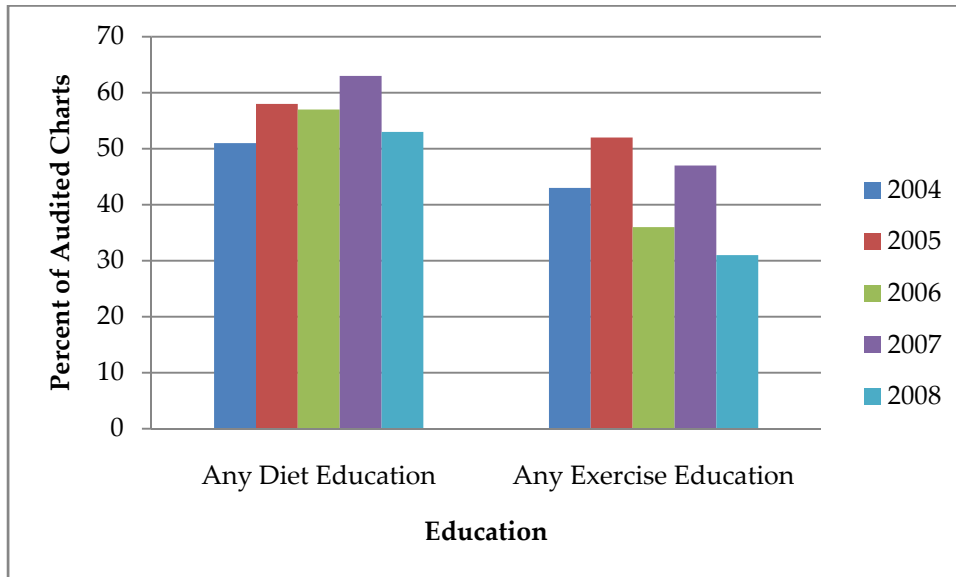
Figure 4e. Triglycerides



Education and Depression Screening

Approximately 56% of patients with audited charts get any diet education and 42% of them get any exercise education. Diet education rates are more stable over time when compared to exercise education rates.

Figure 5a. Education



An average of 29% of patients with diabetes also have active depression. Depression status was known for all patients with audited charts, and of those without depression, and average of 26% were rescreened.

Figure 5b. Depression Screening

