

BEMIDJI AREA DIABETES CARE SUMMARY REPORT



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Executive Summary

The Bemidji Area Office (BAO) of the Indian Health Service (IHS) is located in Bemidji, Minnesota. It provides health care and funding to support health services to American Indians and Alaska Natives (AI/AN) residing in four states, Minnesota, Wisconsin, Michigan and Indiana. Currently, there are 34 federally recognized tribes in the Bemidji Area geographic area, with more tribes seeking recognition by the federal government.

The crude diabetes prevalence rates among AI/AN aged 20 and older, in IHS Bemidji Area from 2000 to 2003 are 5.4%, 7.8%, 8.5% and 8.0% respectively, indicating that the prevalence of diabetes is increasing in the IHS Bemidji area. During 2000 to 2003, the overall crude diabetes prevalence rates varied across the different tribal communities in the states of Michigan, Minnesota and Wisconsin. In Michigan, the crude diabetes prevalence rate trends are steadily increasing for Saginaw, Sault Ste Marie and Pokagon tribes. Similar increases were seen in Minnesota with the Red Lake, White Earth and Upper Sioux Tribes and in Wisconsin with the Stockbridge-Munsee, Lac Courte Oreilles, Menominee, and Ho-Chunk Tribes. The calculated crude prevalence rates may be inaccurate due to the fact that the numbers of people diagnosed with diabetes are self reported. This could possibly lead to either under reporting or over reporting. Diabetes prevalence increases with age. Therefore, adjustments must be made before concluding that these reported rates demonstrate real differences over time. Considerable caution should be used in interpreting the tribal diabetes prevalence rates from 2000 to 2003. Despite these limitations, within this short span of 4 years of observation, the increasing prevalence of diabetes in the Bemidji Area further contributes to the already existing large and disproportionate burden of diabetes in this population.

This report was developed by using both qualitative and quantitative data from different sources such as; the Bemidji diabetes surveillance project (BADSP) assessment, tribal site visits from the BADSP staff, and the annual diabetes audits reported to the Bemidji Area Office. The clinical information in this report is based on selected indicators from the diabetes audit tracking from years 2000 to 2003 by the various tribal health clinics in the Bemidji Area. The diabetes audits are based on the IHS standard health indicators tracked in the annual diabetes audits compiled in chart review (electronic or manual) and reported to the BAO. The trends in this report will paint a picture of diabetic health status in the Bemidji Area. By looking at this information we can best target health resources, support those in the community with diabetes and prevent diabetes in future generations. In 2000, 2001, 2002, and 2003, a total of 1,172, 1,213, 556, and 1,307 individuals respectively were included in the total Bemidji Area audit sample.

From 2000 to 2003, some of the diabetes quality of care measures, such as A1c test, the lipid profile testing and monitoring for diabetic nephropathy have shown positive improvement trends. However, the dilated eye exam rate, also one of the diabetes quality of care measures, was below the Healthy People 2010 target rate of 75% across the entire IHS Bemidji Area. Also, the trends for overweight, obesity and not a current tobacco user have increased. Therefore, diabetes team efforts need to focus on working with providers and patients to implement quality improvement strategies and effective interventions to reduce the burden of secondary complications associated with diabetes. Overall there is a great potential and opportunity for improving diabetes care in IHS Bemidji Area.

Findings from the diabetes education site visits varied significantly, since many programs were unaware of the requirements for program recognition and had not yet begun to develop formal diabetes education programs. There was also variation in most aspects of the overall review, including: surveillance capacity, familiarity with and use of RPMS, availability of the Diabetes Management System and RPMS packages, experience of the diabetes coordinator, availability of the diabetes team and administrator during the site visit, availability of materials needed for review (e.g., policies, audits, continuing education information, evaluation and quality improvement criteria, documentation and education issues, and the content of team and advisory meeting notes).

This report provides a baseline to tribal policy makers and public health professionals who seek to improve the diabetes programs in the Bemidji Area. We suggest implementing the following recommendations to improve diabetes care:

- The Bemidji Area tribal diabetes programs should continue their well-planned team efforts to seek administrative support in sustaining diabetes surveillance capacity. The programs need to be assessed periodically to monitor progress;
- The diabetes programs should continue updating their diabetes registries on a very regular basis, and make efforts to accurately identify tribal members with diabetes;
- The programs should use the diabetes registers to plan care proactively, to track and recall patients, and to assess care provided through the program;
- Diabetes team members are encouraged to be cross trained in using the RPMS diabetes registry and related components (including Diabetes Management) to help prevent any discontinuity for local diabetes program management whenever there is staff turnover ;
- Diabetes programs should continue their efforts in meeting the IHS Integrated Diabetes Education Recognition Program Standards.

Introduction

Burden of Diabetes among AI/AN in the Bemidji Area

Despite broad advances in health care and prevention nationally, the existing health data on American Indian/Alaska Indian (AI/AN) indicate that there are substantial, and sometimes vast, disparities between their overall health status and that of the general US population (IHS, 2001). Chronic diseases such as diabetes mellitus, heart disease, and cancer are currently among the leading causes of death in AI/AN adults (Galloway, 1999). The highest prevalence of diabetes in the world has been recorded among the Pima Indians of Arizona (Knowler, 1978). Diabetes was rarely reported among Native Americans 50 years ago, but it is now found in epidemic proportions in AI/AN populations and a major cause of morbidity (such as blindness, kidney failure, lower-extremity amputation, and cardiovascular disease), disability, decreased quality of life, and premature mortality (Gohdes, 1995).

The burden of diabetes among Bemidji Area AI/ANs represents a disease with major health disparities between AI/ANs and Non-Indians. The prevalence of diabetes increases with age and the age-adjusted prevalence varies by region (Burrows, 2000). The crude diabetes prevalence rates among AI/AN aged 20 and older, in IHS Bemidji Area from 2000 to 2003 are displayed in the Tables and Graphs 1, 2 and 3 and the rates are 5.4%, 7.8%, 8.5% and 8.0% respectively. The detailed crude diabetes prevalence rates for IHS Bemidji Area and states of Michigan, Minnesota and Wisconsin can be found in the Appendix C-D-E respectively. The overall diabetes prevalence is increasing in the IHS Bemidji Area and this increasing prevalence of diabetes further contributes to the already existing large and disproportionate burden of diabetes in this population.

The crude diabetes prevalence rate trends from 2000-2003 for the tribal communities living in the states of Michigan, Minnesota and Wisconsin are displayed in Table 1, 2 and 3 and Graphs 1,2, and 3, respectively. The diabetes prevalence rates are calculated by dividing the numerator (self report of unduplicated counts of patients with an ICD-9 diabetes diagnosis code 250.0-250.9 as their purpose of visit in the respective tribal diabetes registry) by the denominator (user population). The user population is the number of AI/AN who have visited IHS or tribal health facilities at least once in the past three fiscal years. The prevalence rate is expressed as percentage. For epidemiologic purposes, an accurate denominator allows the calculation of a reliable rate of a particular disease or condition within the population. The 2000 to 2003 user population count as reported by the IHS Bemidji Area can be found in the Appendix-B. The calculated crude prevalence rates may be inaccurate because the counts of people diagnosed with diabetes are self reported. These counts may be under reported or over reported depending upon the situation. Diabetes prevalence increases with age, therefore, adjustments must be made before concluding that these reported rates are real differences over time and considerable caution should be used in interpreting our tribal diabetes prevalence rates from 2000 to 2003.

Prevalence of Diabetes in Michigan Tribes (Table-1 and Graph-1)

The overall trends of diabetes prevalence rates varied across the different tribal communities in Michigan. The lowest diabetes prevalence rate, 2.9%, was found for Grand Traverse Tribe in 2001 and the highest, 16.4%, was found for Little River Tribe in 2003. The individual tribal diabetes prevalence rates also varied between the reported years from 2000 to 2003. The diabetes prevalence rate trends

are steadily increasing for Saginaw, Sault Ste Marie and Pokagon Tribes. The diabetes prevalence rates for smaller tribes such as Gun Lake, Little River, Little Traverse and Nottawaseppi Huron Potawatomi may vary due to many factors such as completeness of diabetes registries, the user population counts and sample size fluctuation. The validity of self reported counts is not confirmed and therefore considerable caution should be used in interpreting these rates.

Prevalence of Diabetes in Minnesota Tribes (Table-2 and Graph-2)

The overall trends of diabetes prevalence rates varied across the different tribal communities in Minnesota. The lowest diabetes prevalence rate, 4.2%, was found for Nett Lake (Bois Forte) Tribe in 2000 to the highest, 14.7%, was found for Prairie Island Tribe in 2001. The individual tribal diabetes prevalence rates also varied between the reported years from 2000 to 2003. The diabetes prevalence trends are steadily increasing for Red Lake, White Earth and Upper Sioux Tribes. The diabetes prevalence rates for smaller tribes such as Prairie Island, Shakopee and Nett Lake may vary due to many factors such as completeness of diabetes registries, the user population counts and sample size fluctuation. The validity of self reported counts is not confirmed and therefore considerable caution should be used in interpreting these rates.

Prevalence of Diabetes in Wisconsin Tribes (Table-3 and Graph-4)

The overall trends of diabetes prevalence rates varied across the different tribal communities in Wisconsin. The lowest diabetes prevalence rate, 4.7%, was found for Forest County Tribe in 2003 to the highest, 12.0%, was found for Oneida Tribe in 2002 and Lac Courte Oreilles Tribe in 2003 respectively. The individual tribal diabetes prevalence rates also varied between the reported years from 2000 to 2003. The diabetes prevalence trends are steadily increasing for Stockbridge-Munsee, Lac Courte Oreilles, Menominee, and Ho-Chunk Tribes. The diabetes prevalence rates for smaller tribes such as Mole Lake, St Croix and Forest County in Wisconsin vary due to many factors such as completeness of diabetes registries, the user population counts and sample size fluctuation. The validity of self reported counts is not confirmed and therefore considerable caution should be used in interpreting these rates.

Limitations

The reported trends for diabetes prevalence rates have several limitations. First, we were unable to account for individuals with undiagnosed diabetes. Second, we lack data on diabetic AI/AN who did not visit IHS or tribal health facilities at least once during the years studied. Third, we are missing data on diabetic AI/AN who visited IHS or tribal health facilities that either did not report or incompletely reported their data to the local outpatient database (Diabetes Registry). Fourth, the reported prevalence estimates are based on self report of cases of diagnosed with diabetes (numerator), the active users AI/AN who have visited IHS or tribal health facilities at least once in the past three years (denominator); therefore they may be inaccurate as the counts may be underreported or over reported depending upon the situation. Despite these limitations, previous research has shown that the IHS outpatient database and IHS service population estimates closely agree with estimates from other Native American and Alaskan diabetes prevalence studies (Valway et al, 1993). The experts who work with IHS still believe that the diabetes burden is higher in Indian Health considering the racial misclassification and incomplete local data collection.

Table-1 Crude Prevalence of Diabetes Among American Indians/Alaska Natives (AI/AN), Age 20 and Older, by Group of Tribes in Michigan & IHS Bemidji Area, 2000-2003

Tribes	2000		2001		2002		2003	
	Cases [▲] #	Prevalence [▲] (%)	Cases [▲] #	Prevalence [▲] (%)	Cases [▲] #	Prevalence [▲] (%)	Cases [▲] #	Prevalence [▲] (%)
Bay Mills	61	4.4	61	4.1	66	4.4	66	4.2
Grand Traverse	130	6.2	66	2.9*	221	9.9*	103	4.7
Gun Lake	NA	NA	18	6.5	21	7.6	28	10.1*
Hannahville	54	4.5	79	6.7	78	6.5	68	3.7*
Keweenaw Bay	NA	NA	123	5.4	150	6.3	132	5.2
Lac Vieux Desert	33	6.8	63	12.3*	76	13.8*	65	11.0*
Little River	38	5.5	75	10.9*	135	16.5*	135	16.4*
Little Traverse	115	11.3*	113	10.1*	126	10.0*	194	13.7*
Nottawaseppi Huron Potawatomi	35	5.7	26	4.2*	26	4.2*	24	3.9*
Pokagon	85	5.7	79	5.3	NA	NA	99	6.6
Saginaw	166	6.7	220	8.3	270	9.5	246	8.0
Saulte Ste Marie	566	4.4	818	6.3	998	7.6	870	6.3
Michigan - Total	1283	4.8	1746	6.4	2258	8.0	2041	6.8
IHS Bemidji Area	5979	5.4	8829	7.8	9966	8.5	9749	8.0

Source: Based on Bemidji Area Indian Health Service ambulatory patient care data, 2000 to 2003; Data for urban Detroit Indian Health Center is not available; ▲ Cases (Numerator) are self report of unduplicated counts of patients with an ICD-9 diabetes diagnosis code 250.0-250.9 as their purpose of visit; ♣ User Population (Denominator) is the population of AI/AN who have visited IHS or tribal health facilities at least once in the past three fiscal years. The calculated crude prevalence rates therefore may be inaccurate because counts may be underreported or over reported. * Indicates the calculated prevalence rates may be small or large due to changes in numerator and denominator and the sample size fluctuation affects the prevalence rates causing intra and inter tribal variability; NA=Not Available;
Note: Considerable caution should be used in interpreting these prevalence rates from 2000 to 2003.

Graph-1

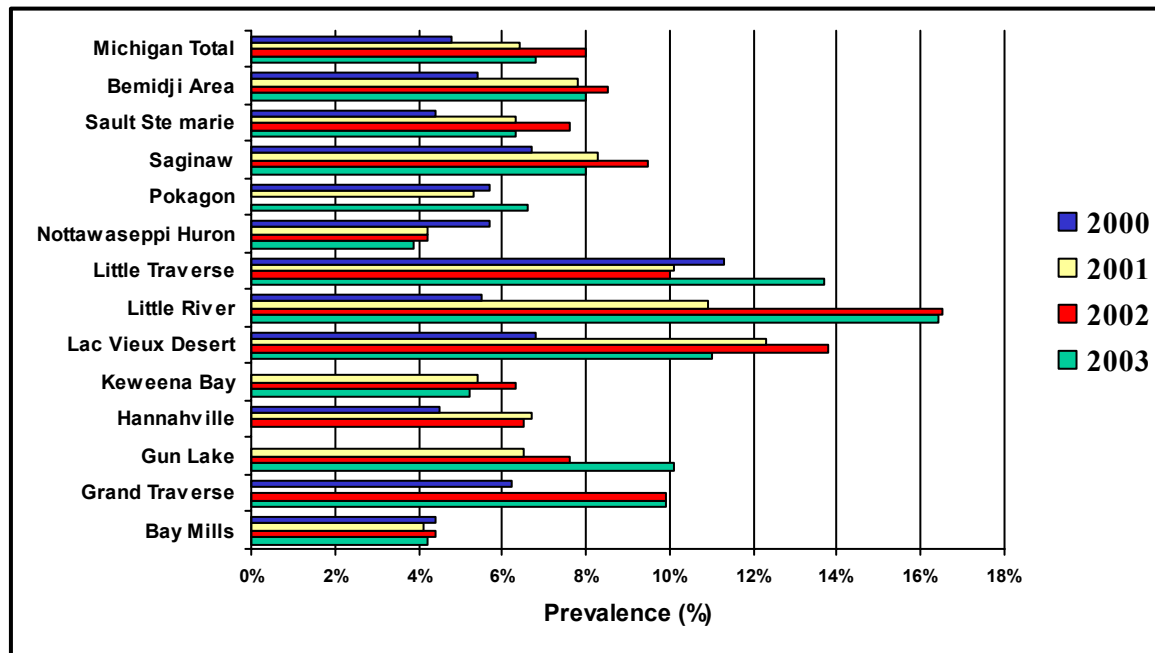


Table-2 Crude Prevalence of Diabetes Among American Indians/Alaska Natives (AI/AN), Age 20 and Older, by Group of Tribes in Minnesota& IHS Bemidji Area, 2000-2003

Tribes	2000		2001		2002		2003	
	Cases [♣] #	Prevalence [♣] (%)	Cases [♣] #	Prevalence [♣] (%)	Cases [♣] #	Prevalence [♣] (%)	Cases [♣] #	Prevalence [♣] (%)
Fond du Lac	NA	NA	993	13.3 [*]	545	7.3	545	6.3
Grand Portage	38	7.1	35	6.4	68	12.5 [*]	68	12.3 [*]
Leech Lake	NA	NA	756	6.6	721	6.6 [*]	783	6.3 [*]
Lower Sioux	NA	NA	33	5.4	48	7.4 [*]	48	6.9 [*]
Mille Lacs	390	10.6	450	12.3 [*]	495	12.7 [*]	495	12.1 [*]
Nett Lake (Bois Forte)	61	4.2	76	5.5	134	6.7	100	6.5 [*]
Prairie Island	59	11.6 [*]	63	14.7 [*]	63	13.1 [*]	63	11.7 [*]
Red Lake	640	7.2	641	7.2	690	7.9	713	8.0
Shakopee	26	4.9 [*]	30	5.2 [*]	47	5.7 [*]	48	4.7 [*]
Upper Sioux	29	8.1 [*]	35	9.4 [*]	35	9.5 [*]	36	9.1 [*]
White Earth	440	4.5	638	6.2	725	6.3 [*]	665	6.0 [*]
Minnesota - Total	1683	3.7	3750	8.2	3547	7.5	3564	7.2
IHS Bemidji Area	5979	5.4	8829	7.8	9966	8.5	9749	8.0

Source: Based on Bemidji Area Indian Health Service ambulatory patient care data, 2000 to 2003; Data for urban Minneapolis Indian Health Center is not available; ♣ Cases (Numerator) are self report of unduplicated counts of patients with an ICD-9 diabetes diagnosis code 250.0-250.9 as their purpose of visit; ♥ User Population (Denominator) is the population of AI/AN who have visited IHS or tribal health facilities at least once in the past three fiscal years. ♣ The calculated crude prevalence rates therefore may be inaccurate because counts may be underreported or over reported. * Indicates the calculated prevalence rates may be small or large due to changes in numerator and denominator and the sample size fluctuation affects the prevalence rates causing intra and inter tribal variability; NA=Not Available;
Note: Considerable caution should be used in interpreting these prevalence rates from 2000 to 2003.

Graph-2

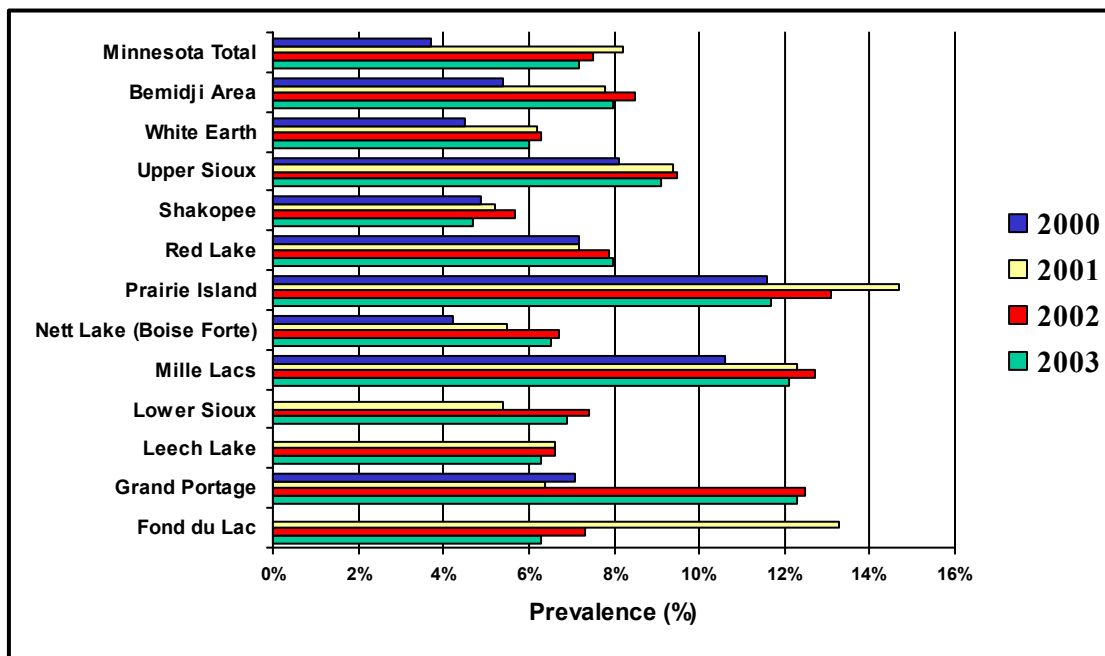
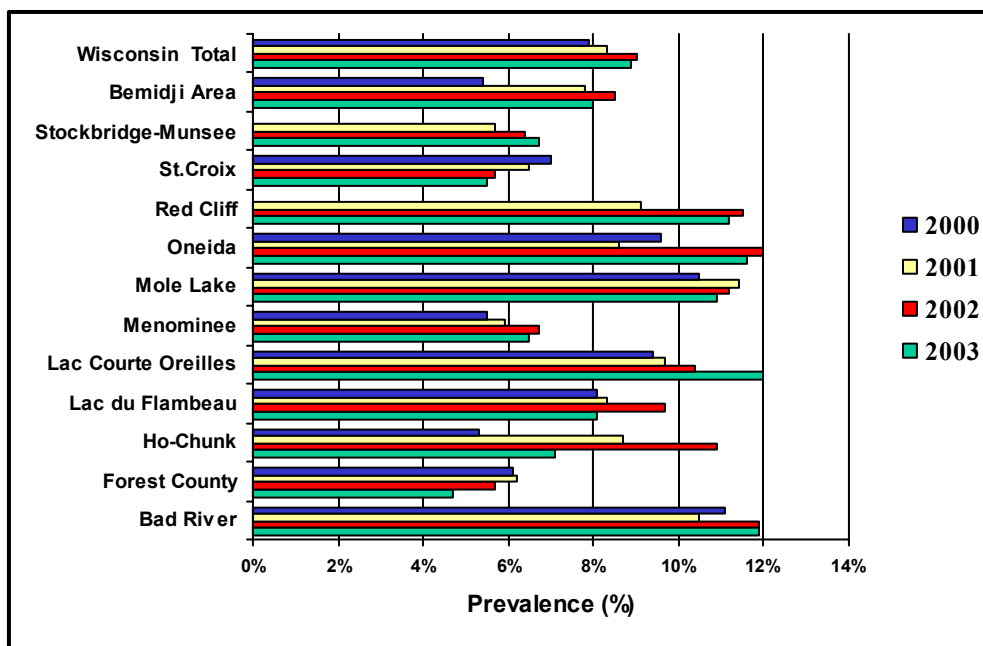


Table-3 Crude Prevalence of Diabetes Among American Indians/Alaska Natives (AI/AN), Age 20 and Older, by Group of Tribes in Wisconsin & IHS Bemidji Area, 2000-2003

Tribes	2000		2001		2002		2003	
	Cases [♠] #	Prevalence [♣] (%)	Cases [♠] #	Prevalence [♣] (%)	Cases [♠] #	Prevalence [♣] (%)	Cases [♠] #	Prevalence [♣] (%)
Bad River	228	11.1	217	10.5	218	11.9	247	11.9
Forest County	88	6.1	97	6.2	97	5.7	97	4.7
HoChunk	223	5.3	382	8.7	492	10.9*	492	7.1*
Lac du Flambeau	258	8.1	274	8.3	366	9.7*	330	8.1*
Lac Courte Oreilles	369	9.4	386	9.7	394	10.4*	424	12.0*
Menominee	466	5.5	506	5.9	514	6.7	593	6.5*
Mole Lake	45	10.5*	45	11.4*	49	11.2*	45	10.9*
Oneida	944	9.6	863	8.6	1155	12.0*	1254	11.6*
Red Cliff	NA	NA	155	9.1	177	11.5*	194	11.2*
St Croix	135	7.0	130	6.5	123	5.7	178	5.5
Stockbridge-Munsee	NA	NA	130	5.7	153	6.4	157	6.7
Wisconsin - Total	3077	7.9	3351	8.3	3,738	9.0	4,011	8.9
IHS Bemidji Area	5979	5.4	8829	7.8	9,966	8.5	9,749	8.0

Source: Based on Bemidji Area Indian Health Service ambulatory patient care data, 2000 to 2003; Data for urban Milwaukee and Green Bay Indian Health Center is not available; ♠ Cases (Numerator) are self report of unduplicated counts of patients with an ICD-9 diabetes diagnosis code 250.0-250.9 as their purpose of visit; ♣ User Population (Denominator) is the population of AI/AN who have visited IHS or tribal health facilities at least once in the past three fiscal years. The calculated crude prevalence rates therefore may be inaccurate because counts may be underreported or over reported. * Indicates the calculated prevalence rates may be small or large due to changes in numerator and denominator and the sample size fluctuation affects the prevalence rates causing intra and inter tribal variability; NA=Not Available;
Note: Considerable caution should be used in interpreting these prevalence rates from 2000 to 2003.

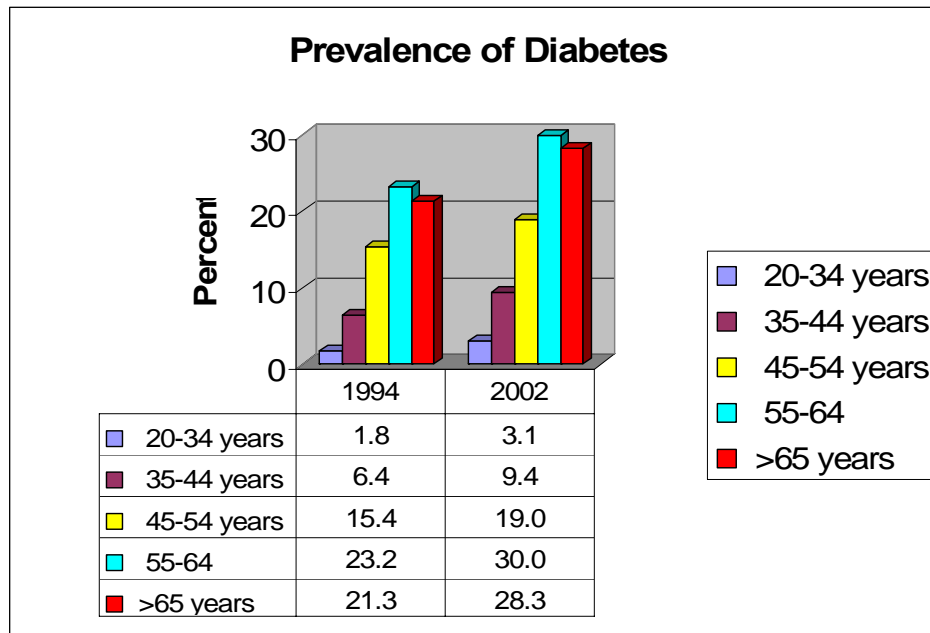
Graph-3



National Burden of Diabetes among AI/AN

In the U.S., AI/AN suffer disproportionately from Diabetes. During the time span, 1994 and 2002, the age adjusted prevalence of diabetes among AI/AN increased by 33.2%, from 11.5% (1994) to 15.3% (2002). The age stratified prevalence of diagnosed diabetes is displayed in Graph 4. Overall, the greatest increase was found in adults 45 years and older and the smallest increase was found in younger persons (Acton et al, 2003).

Graph-4 Prevalence of diagnosed diabetes among adults aged ≥ 20 years in American Indian/Alaska Native (AI/AN), by age group, 1994 and 2002



Source: Acton et al, MMWR vol.52/No.30 702-704, 2003; Based on Indian Health Service ambulatory patient care data.

Bemidji Area Diabetes Surveillance Project

All Indian Health Service, Tribal and Urban Indian (I/T/U) facilities in the Bemidji Area (MI, WI and MN) receive special dollars for diabetes program improvement through the Indian Health Service. Currently, the majority of the programs that have initiated diabetes registries (variation exists regarding paper vs. electronic auditing, comprehensiveness, accuracy, updating, and use) have completed at least one diabetes audit in the last two years (a vast majority of the audits are done manually) and have identified diabetes teams (variation exists regarding composition and regularity of meetings).

In 2002, the following limitations in diabetes data for the Bemidji Area existed:

- The majority of primary care data on diabetes was scattered among the individual health care programs throughout the three-state area.

- The availability and accuracy of data from most of these programs had not been evaluated.
- The Area prevalence rates area were based on a sample size which may not be representative of the population.
- Racial identifiers were missing or inaccurate in external health data sets containing information on the complications associated to diabetes.

Because of these data limitations, IHS earmarked a portion of the new diabetes funds toward data improvement. Through a combination of IHS National and IHS Area funds, the Bemidji Area Diabetes Surveillance Project (BADSP) was created. The central goal of BADSP was to build a sustainable infrastructure so that the Bemidji Area Indian Health care programs would have on-going capacity to monitor diabetes (collection, analysis, and interpretation of diabetes care data), and to assist Tribes in Michigan, Wisconsin, and Minnesota in their efforts to ultimately reduce diabetes within their respective communities. The following major services were offered through the BADSP:

Site Visits

Site visits to assess the various tribal diabetes programs readiness in meeting the IHS Integrated Diabetes Education Recognition Program standards, as well as to assess baseline diabetes surveillance capacity and data infrastructure were offered to the 34 tribal sites as well as three large urban sites within the Bemidji Area. Baseline assessments have been completed for 30 tribal programs and 3 urban sites. Individual reports and recommendations have been sent to each site. Follow up technical assistance such as RPMS technical support, diabetes auditing, diabetes registry establishment and recommendations to improve overall diabetes program and education services are offered on an ongoing basis.

Training

The BADSP, in conjunction with the Bemidji Area Office, has sponsored annual area-wide diabetes coordinator training sessions. These sessions have provided both clinical and programmatic updates to the diabetes coordinators in the Bemidji Area. Area wide RPMS training sessions (RPMS DM Case management) were held twice during the years 2002 and 2004.

Pilot Project

One diabetes quality improvement (QI) pilot project has been initiated at two Tribal sites in Wisconsin for the FY 2004. The dilated eye exam rates have been observed lower than desired within the Bemidji Area. This QI diabetes eye exam pilot project (Wisconsin State funded) has two major objectives: 1) Enhance the diabetes programs' capacity to evaluate diabetes care delivery using the local registry. 2) Enhance the diabetes programs' capacity to design and implement quality improvement strategies. The lessons learned from this pilot project will be shared with all the tribal programs to improve their eye exam rates within the IHS Bemidji Area.

Bemidji Area Description

The Bemidji Area Office (BAO) of the Indian Health Service (IHS) is located in Bemidji, Minnesota. It provides health care and funding to support health services to Indians and Alaska Natives residing in four states, Minnesota, Wisconsin, Michigan and Indiana. Currently, there are 34 federally recognized tribes in the BAO geographical area, with more tribes seeking recognition by the federal government. The total population served by the Bemidji Area IHS exceeds 75,000 individual patients (i.e. AI/AN actively seeking care at one of the existing federal, tribal or urban Indian health facilities). Local Tribal affiliations of BAO/IHS patients include the Chippewa/Ojibwe, Odawa/ Ottawa, Ho Chunk, Sioux, Oneida, Potawatomi, Menominee, and Mohican. AI/AN patients served at urban health centers and at some IHS and tribal facilities may represent tribal affiliations from across the United States.

Health services are provided through a variety of means. Many tribes operate their own health services under the authority of the Indian Self-Determination Act of 1976 (PL 93-638). There are 46 health centers including satellite clinic sites operated by the tribes. In addition, there are 5 urban Indian health programs which operate under the authority of Title V of the Indian Health Care Improvement Act. IHS and tribal health providers may also contract with private providers of health services for inpatient or specialty services not offered in those settings through the Contract Health Services (CHS) program. Often times these various components of the Indian health delivery system are referred to as the IHS, tribal, urban (I/T/U) health delivery system. The Bemidji Area Tribal geographic location, type (rural, urban), land area, user population, enrolled members, number of people diagnosed with diabetes and the services available are shown in the Tables 4, 5, and 6 respectively for the states of Michigan, Minnesota, and Wisconsin.

TABLE-4 THE VARIOUS TRIBAL DEMOGRAPHICS FOR THE STATE OF MICHIGAN

Tribe	Location*	Type*	Land Area in Acres or Miles*	User Population* (2003)	Enrolled Tribal Members (2001)	Patients with Diabetes* (2003)	Services Available*
Bay Mills	Eastern Upper Peninsula of Michigan	Rural	20 acres	1,567	1,462	66	Comprehensive Clinic
Grand Traverse	Northwest Michigan	Rural and reservation	1,100 acres	2,179	3,792	103	Comprehensive Clinic
Hannahville	Northern Michigan Upper Peninsula	Rural, reservation, village, and remote	Nearly 5,000 acres	1,816	692	68	Comprehensive Clinic
Nottawaseppi Huron Potawatomi	Southwest Michigan	Rural and reservation	120 acres in trust ad 130 acres tribally owned	612	428	24	Limited Clinic
Keweenaw Bay	North Central Upper Michigan Peninsula	Rural, remote, and reservation	70,327 acres	2,538	3,120	132	Comprehensive Clinic
Lac Vieux Desert	Upper Michigan Peninsula	Rural and reservation	1,269 acres 269 in trust	589	442	65	Comprehensive Clinic
Little River	Western lower peninsula of Michigan	Reservation	70,000 acres	824	2,738	135	Limited Clinic
Little Traverse	Upper Michigan Peninsula	Rural and reservation	336 square miles	1,412	3,521	194	Limited Clinic
Match –e-be-nash-she-wish (Gun Lake)	Western Michigan	Rural	Estimated 450 acres of tribally owned land	276	276	28	Contract Health Only
Pokaogon	Allegan, Berrien, Cass, and Van Buren Counties in Michigan ; Elkhart, Kosuisko, LaPorte, Marshall, Stark, and St. Joseph Counties in Indiana	Urban and rural	5,000 acres	1,500	2,730	99	Limited Clinic/Behavioral Health
Saginaw	Center of Michigan's Lower Peninsula	Rural and reservation	138,240 acres	3,085	2,921	246	Comprehensive Clinic
Sault Ste. Marie	Multiple Counties across the Upper Penninsula	Rural and reservation	293 acres of resevation land	13,704	30,324	870	Comprehensive Clinic

Source: ♣ Data was gathered from the I.H.S National Diabetes Program Compendium November 2003, and enrolled tribal members were obtained from the Bureau of Indian Affairs 2001 publication and some unavailble information from the compendium was obtained through the specific Tribal websites or direct contact with the tribal health facilities; ♠Data was obtained from the Bemidji Area Indian Health Service ambulatory patient care, 2003.

TABLE-5 THE VARIOUS TRIBAL DEMOGRAPHICS FOR THE STATE OF MINNESOTA

Tribe	Location*	Type*	Land Area in Acres or Miles*	User Population* (2003)	Enrolled Tribal Members (2001)	Patients with Diabetes* (2003)	Services Available*
Bois Forte	Northeastern Minnesota	Rural, reservation, and remote	103,000 acres Nett Lake; 2,000 acres Lake Vermillion	1,546	2,857	100	Comprehensive Clinic
Fond Du Lac	Northern Minnesota	Rural, reservation, and urban	100,000 acres 1/3 Indian owned	8,609	3,905	545	Comprehensive Clinic
Grand Portage	Northeastern Minnesota	Rural, reservation, and remote	56,000 acres	551	1,089	68	Limited Clinic
Leech Lake	North Central Minnesota	Rural, reservation, and remote	28,000 acres	12,393	8,294	783	Comprehensive Clinic, Inpatient Facility
Lower Sioux	Southern Minnesota	Rural, reservation and remote	1743 acres of Tribally owned land	698	820	48	Contract Health
Mille Lacs	Central Minnesota	Rural, reservation, village, and remote	61,000 acres	4,076	3,292	495	Comprehensive Clinic
Prairie Island	Southeast Minnesota	Rural and village	400 acres	538	622	63	Limited Clinic
Red Lake	North central Minnesota	Rural , reservation, and remote	837,736 acres	8,946	9,610	713	Comprehensive Clinic, Extended Care Unit, and Inpatient Facility
Shakopee	Central Minnesota	Metropolitan, reservation	2000 acres located within/near 250 acres reservation	676	326	32	Comprehensive Clinic
Upper Sioux	Southwest Minnesota	Rural and village	912 acres	386	404	35	Contract Health
White Earth	Northwestern Minnesota	Rural and reservation	829,440 acres	11,069	20,820	665	Comprehensive Clinic

Source: ♣ Data was gathered from the I.H.S National Diabetes Program Compendium November 2003, and enrolled tribal members were obtained from the Bureau of Indian Affairs 2001 publication and some unavailble information from the compendium was obtained through the specificTribal websites or direct contact with the tribal health facilities; ♠ Data was obtained from the Bemidji Area Indian Health Service ambulatory patient care, 2003.

TABLE-6 THE VARIOUS TRIBAL DEMOGRAPHICS FOR THE STATE OF WISCONSIN

Tribe	Location*	Type*	Land Area in Acres or Miles*	User Population* (2003)	Enrolled Tribal Members (2001)	Patients with Diabetes* (2003)	Services Available*
Bad River	Northern Wisconsin	Rural and Reservation	124,234 acres	2,079	6,292	247	Clinic & Pharmacy
Forest County Potawatomi	Northeast Wisconsin	Rural, reservation, remote	Approx. 25 mile area	2,046	1,186	97	Comprehensive Clinic & Dental
Ho-Chunk Nation	Central Wisconsin	Rural, village, and remote	Over 5,000 square miles	6,884	6,145	492	1-Comprehensive Clinic 1-Clinic & Pharmacy
Lac Courte Oreilles	Northwest Wisconsin	Reservation and rural	77,000 acres	4,073	5,587	424	Comprehensive Clinic & Urgent Care Center
Lac Du Flambeau	Northern Wisconsin	Rural and reservation	144 square miles	3,521	3,143	330	Comprehensive Clinic
Menominee	Central Wisconsin	Rural, reservation and urban	234,000 acres	9,163	8,074	593	Comprehensive Clinic
Oneida Nation	Northeast Wisconsin	Rural and reservation	4,600 acres, 2,740 acres in trust	10,836	14,745	1254	Comprehensive Clinic
Red Cliff	Northern Wisconsin	Rural and reservation	14 square miles	1,732	4,064	194	Comprehensive Clinic
St. Croix	Northwest Wisconsin, Central Minnesota	Rural and reservation	4,000 acres	2,223	982	123	Comprehensive Clinic
Sokaogon Chippewa	Northeastern Wisconsin	Rural, reservation, and remote	2,000 acres	412	1,163	45	Limited Clinic
Stockbridge-Munsee	Shawano County, Wisconsin	Rural and reservation	17,000 acres	2,349	1,531	157	Comprehensive Clinic

Source: ♣ Data was gathered from the I.H.S National Diabetes Program Compendium November 2003, and enrolled tribal members were obtained from the Bureau of Indian Affairs 2001 publication and some unavailable information from the compendium was obtained through the specific Tribal websites or direct contact with the tribal health facilities; ♠ Data was obtained from the Bemidji Area Indian Health Service ambulatory patient care, 2003.

Methods

This report was developed by using both qualitative and quantitative data from different sources such as Bemidji diabetes surveillance project (BADSP) assessment, tribal site visits from the BADSP staff, and the annual diabetes audits reported to the Bemidji Area Office.

Assessment

The IHS Indian Diabetes Education Recognition Program's (IDERP), Integrated Diabetes Education and Clinical Standards Evaluation Form was customized and used to capture the surveillance capacity data as well as the program's capacity to meet the IHS IDERP standards. (The evaluation form can be found in the Appendix A.) All 34 federally recognized tribes in the Bemidji Area (MI, WI and MN) along with the three largest urban Indian programs (Detroit, Milwaukee and Minneapolis) were invited to participate in the project. During September 2002 to July 2004, a total of 33 programs, 30 tribal and three urban Indian programs have had their baseline assessments. Our diabetes consultants, Carolyn Ross, RD/MS/CDE, Faye Gohre, RN/BSN, and Chandra Reddy MD/MPH/PhD, medical epidemiologist, jointly conducted the program evaluations for the tribes in the Bemidji Area to determine the programs capacity for diabetes surveillance and diabetes education program readiness.

The BADSP staff made site visits to the tribes who agreed to complete a baseline assessment of their diabetes program. BADSP staff initially contacted the coordinators of the diabetes programs to review the project objectives and arranged a convenient time for the on-site evaluation. A pre visit letter was sent out to the coordinator and health director with a reminder of the site visit date and time. They were asked to have as many of the following documents as possible available to complete the review:

- Diabetes Program manual/policies
- Mission statement
- Annual program goals and plan
- Organizational chart
- Evidence of tribal commitment to diabetes program
- Diabetes Program community needs assessment tools and results
- Diabetes Education Program patient forms
- Diabetes Program curriculum
- Diabetes Coordinator Curriculum Vitae (CV) and Continuation Education Unit (CEU) in past 2 years
- List of diabetes team members/disciplines/CV/CEU in past two years

- List of instructional team members/disciplines/CV/CEU in past two years
- Minutes of the diabetes team meetings for the past year
- Diabetes Program advisory group members/composition
- Meetings of the advisory group meetings for the past year
- Diabetes Program brochure or marketing tool
- Sample patient diabetes education materials
- Diabetes Program budget
- Diabetes grant applications for the past 3 years, including the Diabetes - Questionnaires
- Tracking and follow-up system
- Diabetes Care and Outcomes Audits for the past 3 years
- Diabetes Program annual evaluation summary results and recommendations
- Quality Improvement plan

Depending upon varying circumstances, (e.g. the size of the tribal program, level of knowledge about and familiarity with the IDERP standards, extent of use of RPMS, diabetes registry, and the Diabetes Management System, the experience of the diabetes coordinator, and the availability of materials for review, etc.) the on-site evaluation time varied from one half day to a maximum of two working days. On the day of the on-site evaluation, the BADSP staff conducted interviews primarily with the diabetes coordinator and health director, if available. The diabetes team members were often available for the evaluation summary at the end of the site visit. A special tool was used to determine which team member was responsible for each of the following team functions:

- Updating/maintaining the diabetes registry
- Updating/maintaining program manual(policies)
- Reviewing/approving program policy changes
- Updating/maintaining the diabetes education curriculum
- Reviewing/approving education materials/teaching methods/materials and curriculum content
- Field testing new education materials
- Coordinating team efforts
- Chairing team meetings
- Maintaining team meeting minutes
- Administering the program budget
- Assessing/recommending program resources
- Liaison between team and departments/programs/community
- Reviewing/approving education documentation methods

- Reviewing/approving annual CQI/evaluation plan (progress toward goals and objectives)
- Collecting/compiling data for program review
- Completing annual IHS diabetes care audit

A comprehensive evaluation report summarizing overall findings and recommendations was sent to each program that was reviewed.

Site Visits

The site visits provided opportunities to develop further relationships with the tribal diabetes program staff and to gain a better understanding of local barriers and capacity for surveillance, quality improvement, and diabetes education program recognition. BADSP staff met with diabetes program coordinators and other staff and the health director, when available, to conduct the review process. The site visits were labor intensive, but very essential to complete a thorough assessment.

Diabetes Audit

The Bemidji Area Diabetes Care and Outcomes Audit is conducted by annual medical record reviews at most I/T/U facilities (several were able to conduct an electronic audit). These reviews are organized locally. Participating facilities receive instructions to enable them to draw a random sample of charts from the local diabetes registries. Each year, a systematic random sample is drawn from each facility's list of diagnosed diabetic patients who had been seen at least once during the past year. The instructions explain how to calculate the local sample size so that the findings can be generalizable to the whole population of people with diabetes. Actual chart reviews are conducted by diabetes coordinators and other professional staff, in accordance with written instructions and definitions provided by the IHS National Diabetes Program.

BADSP staff provided information about how to use data, quality improvement techniques, sample education recognition policies, forms, and other relevant resources, as well as technical assistance to help improve diabetes programming and surveillance activities. Subsequent targeted technical assistance (on-site visits, e-mail, and telephone follow-up) is provided based on a program's level of interest and degree of readiness to make improvements.

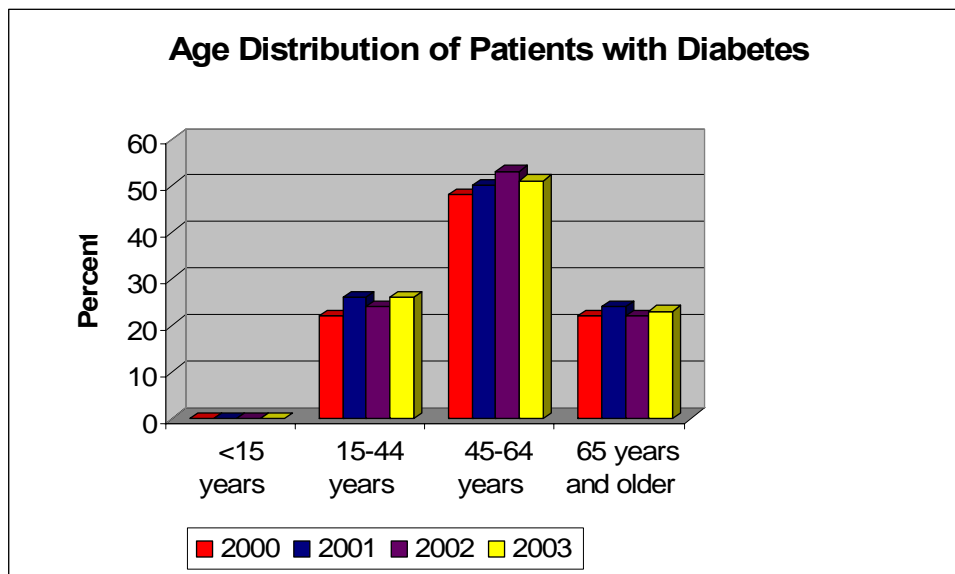
Findings

Diabetes Clinical Care

The clinical information in this section is based on the diabetes audits from years 2000 to 2003 respectively by the various tribal health clinics in the Bemidji Area. Various IHS standard health indicators are tracked in the annual diabetes audits (electronic or manual) and reported to the BAO. The trends in this report will paint a picture of diabetic health status in the Bemidji Area. Tribal diabetes programs can use this data to support those in the community with diabetes and to work towards diabetes prevention in future generations. In 2000, 2001, 2002, and 2003, a total of 1,172, 1,213, 556, and 1,307 individuals respectively were included in the total Bemidji area audit sample. A few selected demographic and quality improvement measures are included in this summary report.

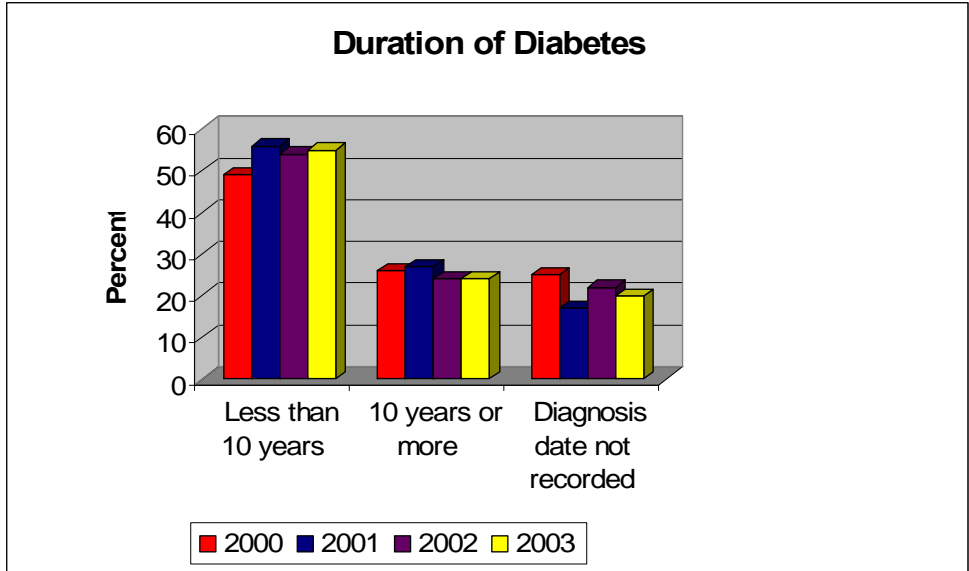
Age Distribution

Age is a risk factor for type 2 diabetes. In the past, type 2 diabetes was diagnosed predominately in patients age 40 and older. Today, young adults (30-35) are the fastest growing group developing type 2 diabetes. The trends for people diagnosed with diabetes in the Bemidji Area remains stable but recent research studies have shown there is a growing concern of type 2 diabetes being diagnosed in children.



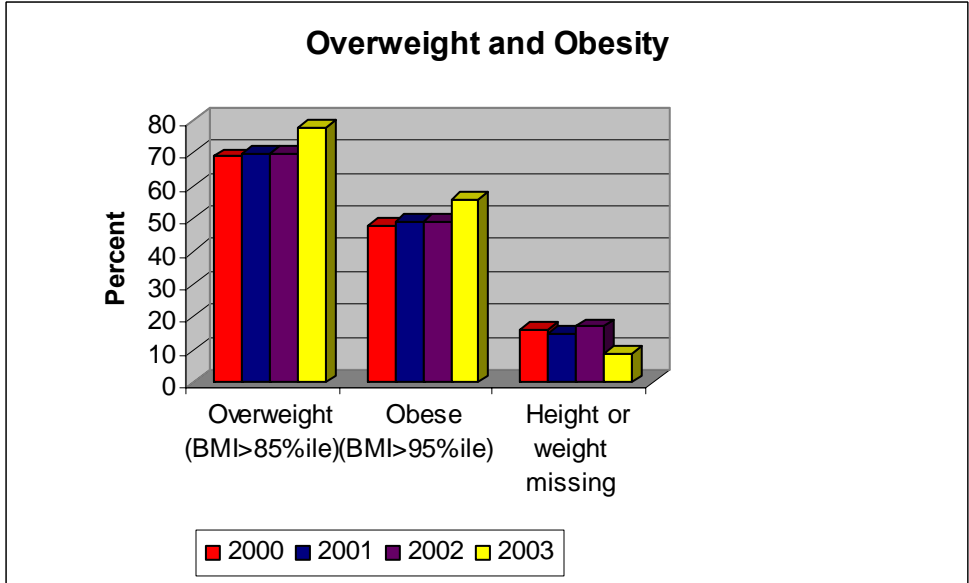
Duration

The duration of diabetes is related to complications such as kidney disease, cardiovascular disease and amputation. Intensive treatment can reduce the risk of complications of diabetes. Due to technical advances and better management strategies, the acute complications of diabetes are rare. The trend for the duration diabetes in Bemidji Area remained stable for 2000 to 2003. Duration is a strong predictor of long term secondary vascular complications.



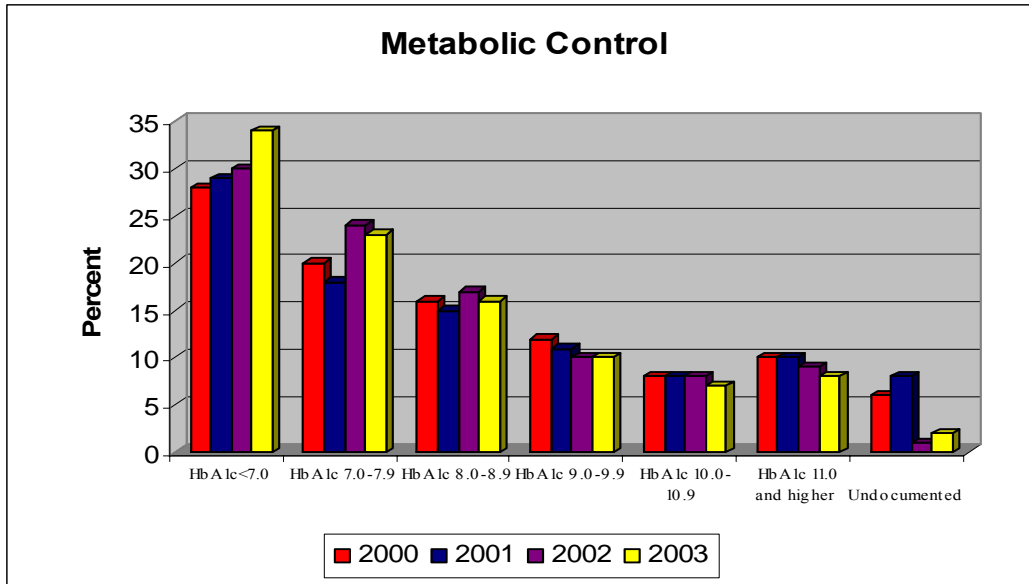
Over Weight and Obesity

Obesity and physical inactivity are associated with the development of type 2 diabetes. Adopting habits that control weight and increasing exercise have been shown to significantly reduce the risk of developing diabetes. Minimal weight loss of just 10-20 pounds can improve blood glucose levels, blood pressure and cholesterol levels in patients with type 2 diabetes. Recent audit data show the improvement in documentation of height and weight information. The overall trends of obesity and overweight have increased for people diagnosed with diabetes in the Bemidji Area. There are several primary prevention interventions such as *Pathways*, *Wolf* and *Quest* programs, in some Native American communities focusing especially among younger individuals to increase physical activity, improve diet, and reduce obesity among children. These programs may serve as examples to other communities whose younger people are at risk of developing diabetes.



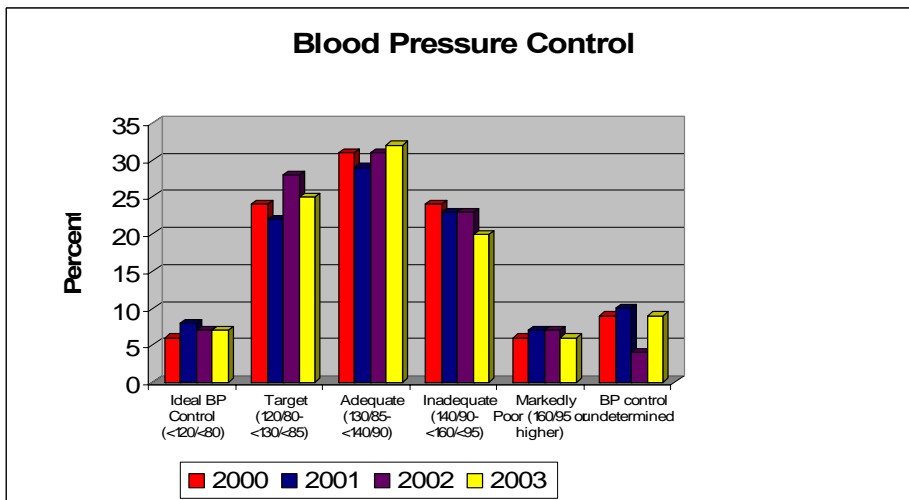
Metabolic Control

A1c estimates the average degree of glycemic control over a period of time and should be monitored at 3-4 month intervals for those with elevated levels (A1c >7.0%). As a patient’s A1c gets higher, the risk of macro and micro vascular complications increase. There was a slight increase in the percent of A1c values < 7.0. However, there was a slight increase in A1c levels between 10.0 and 10.9 during the time period 2000 to 2003. In addition, there was improved documentation of glycemic control noted during the four year time period.



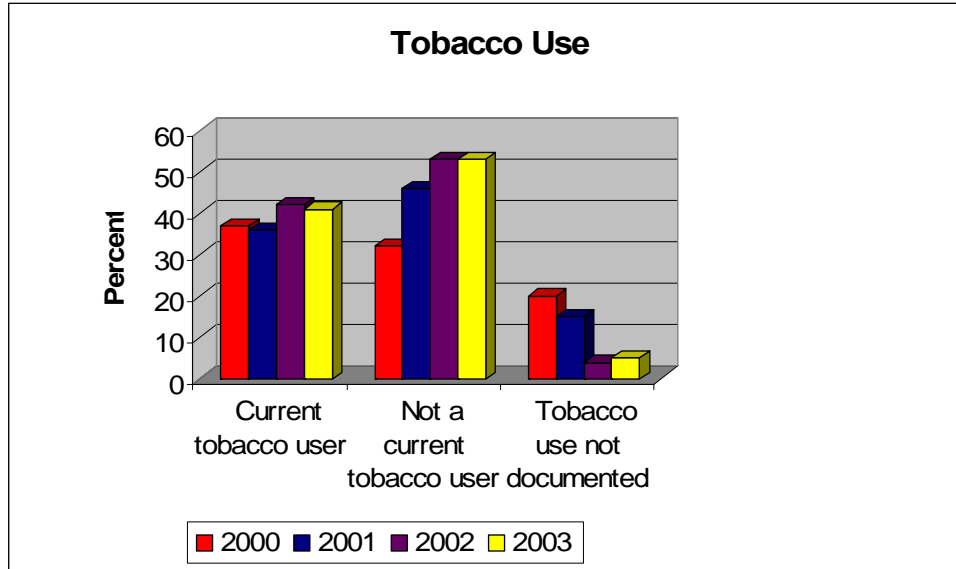
Blood Pressure Management

The target blood pressure (BP) for patients with diabetes is <130/80. High blood pressure increases the risk of heart disease and renal failure in type 2 diabetes. During the time period 2000-2003 there was a marked increase in the percentage of people with diabetes and blood pressure readings of less than 130/80 (good control). During that same time period, the documentation of blood pressure readings also improved.



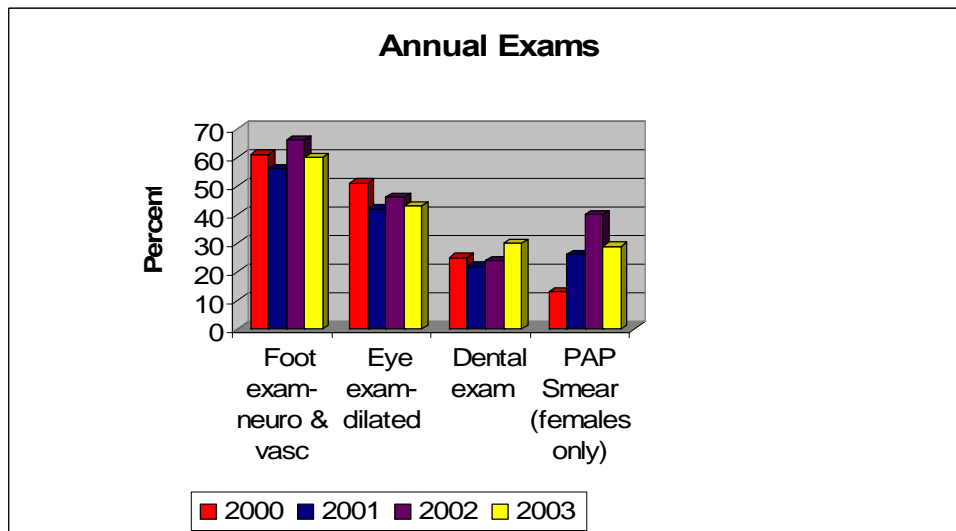
Tobacco Use

Tobacco use is the primary preventable risk factor for cardiovascular disease (the leading cause of death in diabetes). There is a positive trend noted in the percentage of people not a current tobacco user during the years 2000 to 2003. Unfortunately the proportion of people using tobacco still remains high in the IHS Bemidji Area. We also see an improvement in the documentation of tobacco use in the client's medical records.

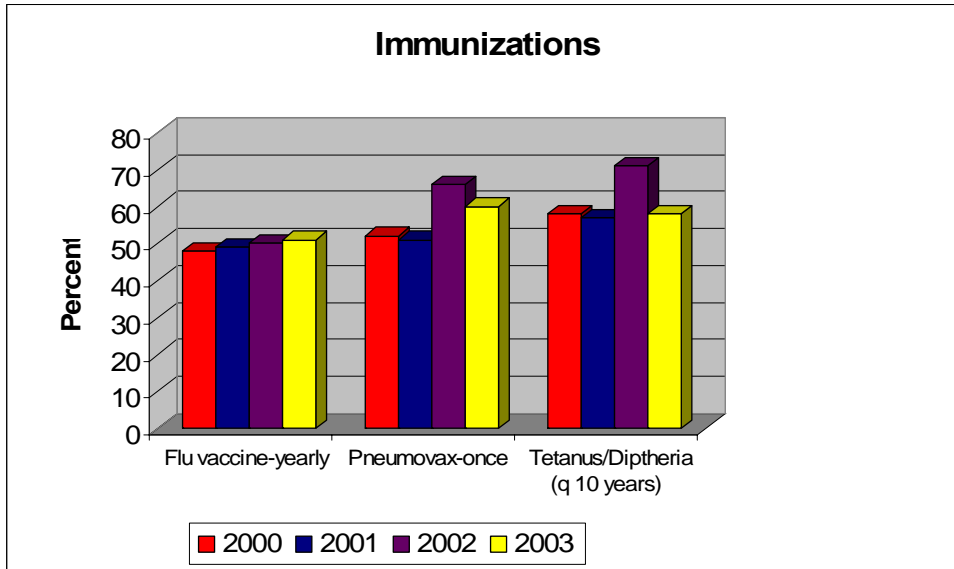


Preventive Care Measures

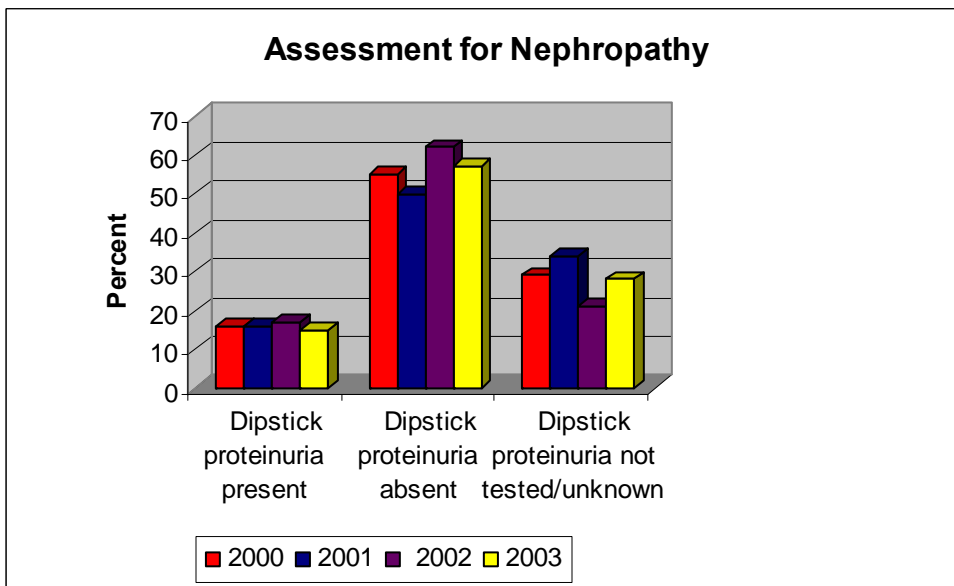
Annual screening exams are important aspects of diabetes care. Indian Health Service standards recommend annual foot, dilated eye and dental exams. Annual PAP smear exams are recommended for women. The overall trends in preventive care measures noted during 2000 to 2003 were as follows: annual foot exams were fairly stable, eye exams are down, dental exams improved a little. PAP smears varied quite a bit. The proportion of people receiving dilated eye exams was found to be well below the Healthy People 2010 target of 75%.



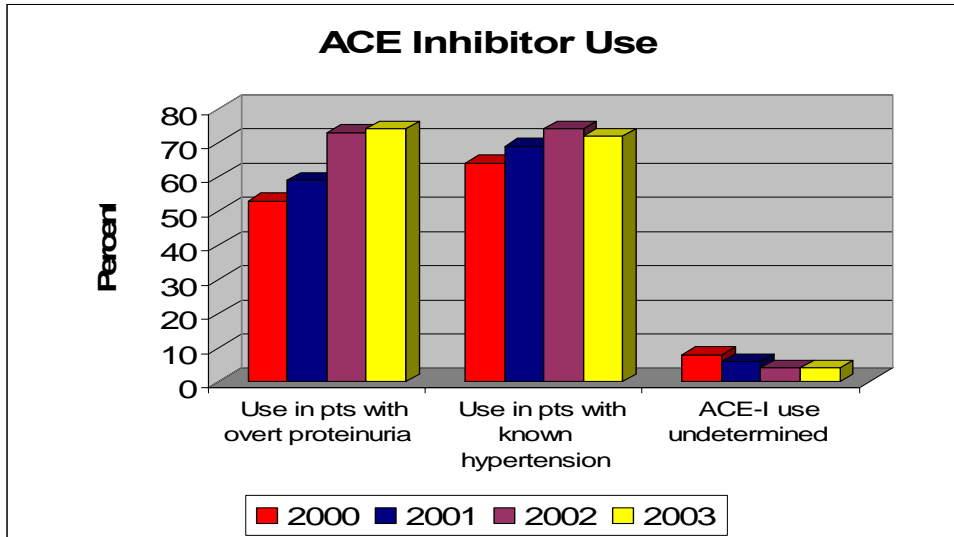
All persons with diabetes should have flu and pneumovax vaccines. Yearly re-vaccination for flu is recommended to provide up-to-date protection. The pneumovax vaccine is necessary at least once and a booster may be needed according to the physician's advice. The flu vaccine percentages were relatively stable from 2000 to 2003 while the pneumovax vaccine percentages showed an increasing trend. The tetanus/diphtheria percentages were variable.



Assessment for Nephropathy

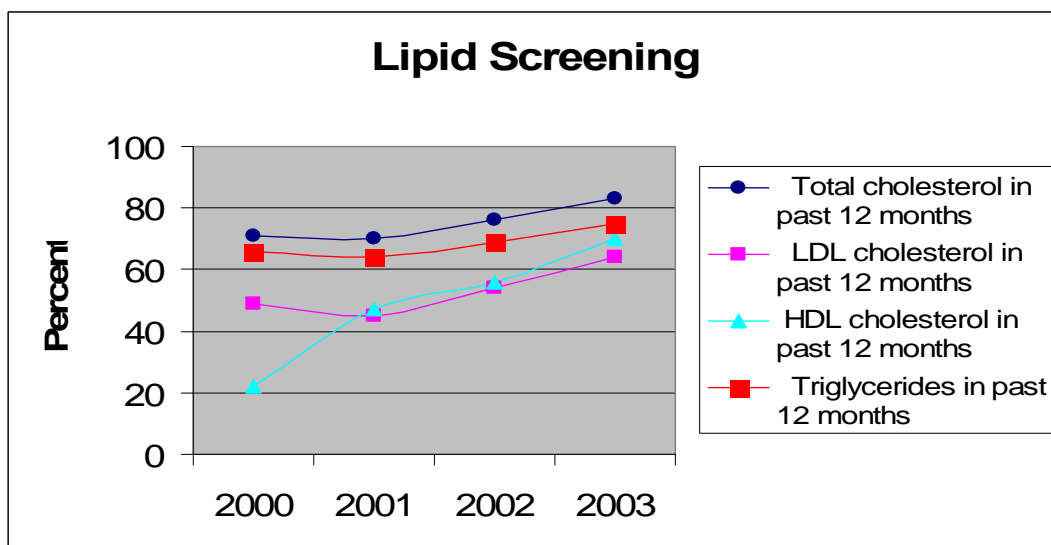


Protein appearing in the urine is an indication of kidney disease. People with type 2 diabetes who have microalbuminuria are more likely to have a heart attack or stroke. Treatment with ACE Inhibitors slows the deterioration of kidney function in diabetes. The overall screening rates increased from 2000 to 2003 and the proportion of people on ACE inhibitor use also increased.

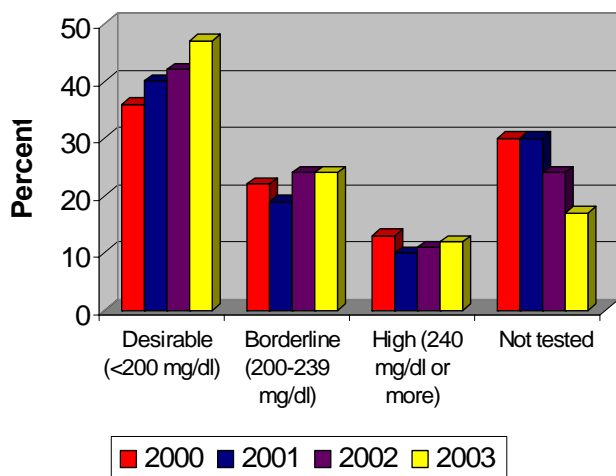


Lipid Screening

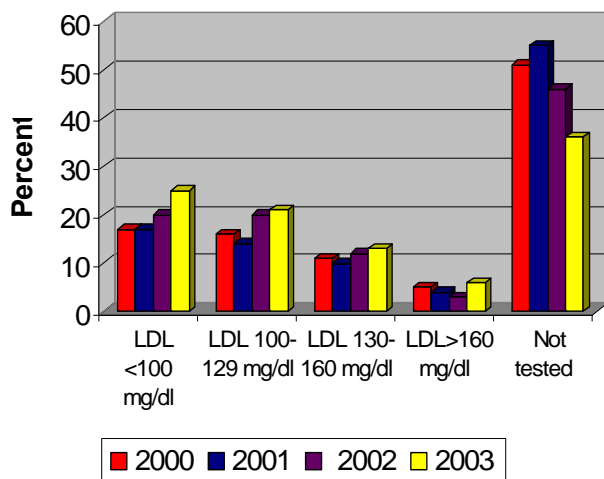
A lipid panel should be performed annually (TC, LDL, HDL, TG) for all the diabetic patients. The risk factors for atherosclerosis include: Total cholesterol >200 mg/dl, LDL>100 mg/dl, HDL<40 mg/dl in Men, HDL<45 mg/dl in women, and triglyceride >200 mg/dl. All patients with LDL >100 mg/dl require medical nutrition therapy and lifestyle modifications. Pharmacologic intervention is recommended if dietary interventions and lifestyle modifications are ineffective in lowering LDL to less than 100mg/dl. The proportion of patients receiving a lipid profile screening rates in Bemidji area are steadily increased from 2000 to 2003 in all the lipid parameters. The percentages of patients who met the goal of LDL <100 mg/dl showed an increasing trend from 2000 to 2003.

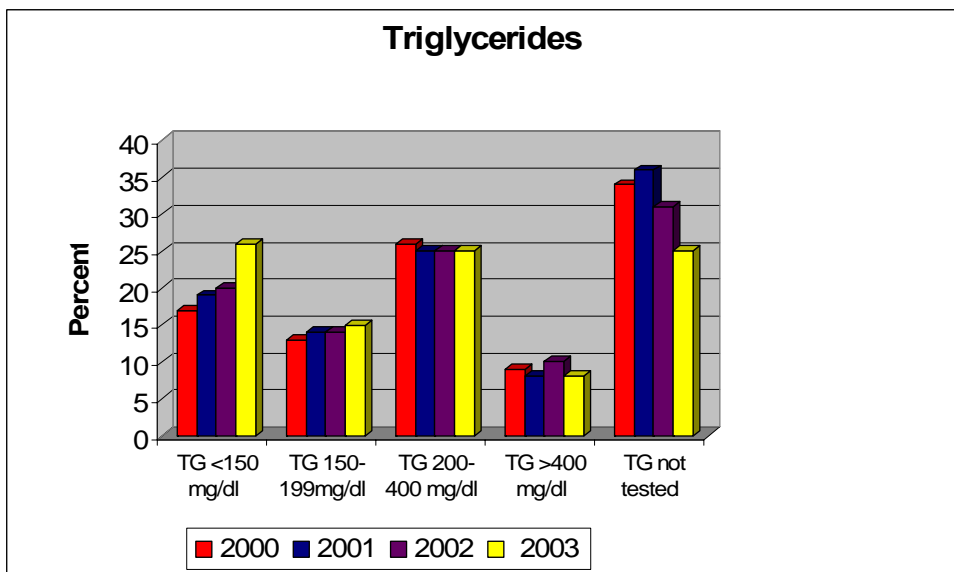
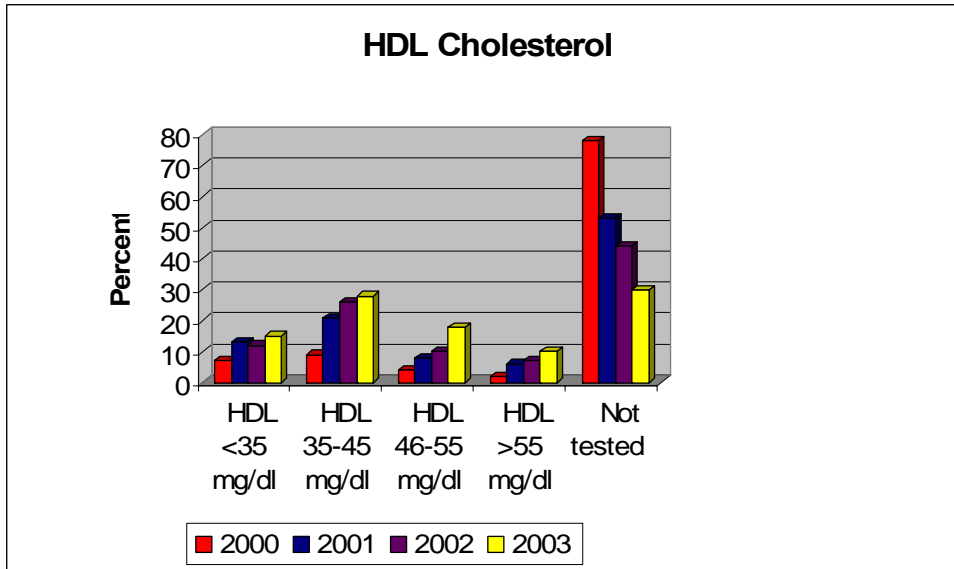


Total Cholesterol



LDL Cholesterol





Summary

From 2000 to 2003, improvements in the diabetes quality of care measures, like A1c test, lipid profile and monitoring for diabetic nephropathy reported here are encouraging for patients with diabetes in the IHS Bemidji area. The dilated eye exam rate, one of the diabetes qualities of care measures, is low across the entire IHS Bemidji area. The overweight, obesity and not a current tobacco user trends were found to be increasing. Therefore the diabetes team efforts need to be focused to involve the providers and the patients in designing effective interventions to reduce the burden of secondary complications associated with diabetes. Overall there is a great potential and opportunity for all the diabetes intermediary measures to be improved further through adopting quality improvement strategies and effective diabetes care interventions.

Integrated Diabetes Education & Clinical Standards Recognition Program

Integrated Diabetes Education and Clinical Standards Recognition Program

In 2002, the Indian Health Service received deemed status from the Centers for Medicare and Medicaid Services to accredit tribal diabetes education programs through a “recognition process”. Since then, IHS has been encouraging tribal programs to prepare and apply for “recognition” status as a means to improve the control of diabetes and prevent complications in Indians who already have diabetes, as well as to enhance primary prevention activities to try to prevent diabetes in young adults and children.

In the summer of 2002, two diabetes healthcare consultants were made available to provide technical assistance and support to assess readiness for this diabetes recognition process for the tribal diabetes programs in the Bemidji Area using the “Integrated Diabetes Education and Clinical Standards Recognition Program for American Indian and Alaska Native Communities.” Since the assessment included a site visit to each tribal facility interested in learning more about the recognition process, it also provided an opportunity for expansion to also include an assessment of each program’s capacity, and to track, monitor, and report diabetes health information. A special diabetes education assessment collection form was modified to incorporate the assessment of each program’s diabetes data capacity.

Findings from the diabetes education site visits showed significant variation among the tribal programs. Many programs were unaware of the standards and requirements for education program recognition and had not yet begun the development of formal diabetes education programs. Therefore, the site visits provided a timely opportunity to provide in-depth technical assistance and training regarding the diabetes education recognition process, as well as opportunities to provide guidance with general diabetes programming, share vital resources, and assess diabetes education and data-related training needs. Providing technical assistance early in the recognition process was seen as a significant benefit, allowing programs to gain a better understanding of the requirements at the start of their education program development process.

Challenges

Some of the common challenges noted during the reviews revealed:

- Resource allocation and staffing levels for provision of diabetes education services varied considerably among programs. Allocated staff time was often insufficient to enable the diabetes coordinator and the diabetes team to devote much time for education program development (e.g., identification of education program resource needs and community education needs, development of education program goals, objectives, and program policy manuals, etc.). Most programs lacked specific procedures and protocols defining their basic programming structure and operations.
- There was vast variability among programs in the degree of familiarity and skills in the use of RPMS, DMS, and general health related data management and retrieval; some staff lacked access to a computer station or access to RPMS.

- Most programs lacked formal processes for registry use and maintenance. There was tremendous variation in the level of comprehensiveness of the diabetes registries; dates of diagnosis and lists of complications and active problems were often missing; most programs lacked a system to validate the integrity of the data being entered into the system; the registries of some programs were on paper only rather than computerized; most programs were not using diabetes education codes.
- Time allocated for data entry was often insufficient to keep the registry up-to-date to enable the team to use the registry as a valid source of patient care information for efficient, proactive care and follow up; this also caused lack of data for adequate program planning and program evaluation.
- Frequent staff turnover resulted in the loss of valuable gains in program development and necessitated the need for ongoing retraining and technical assistance.
- Medical record maintenance was often inconsistent, making it difficult and time consuming to locate pertinent clinical information.
- Most programs lacked documentation protocols and forms for diabetes education.
- There was a general lack of record keeping for team and advisory meetings to show the extent of planning and coordination efforts.
- Most programs were using an informal approach to diabetes education, using various brochures and other handouts rather than using a standardized, comprehensive approach with a specified curriculum.
- Most programs lacked a formal continuous quality improvement process and the involvement of broad community input into program planning and evaluation.
- Most programs lacked evidence of validation of relevant continuing education for diabetes education instructors.

Strengths

It's also important to list some of the strengths noted among various diabetes programs during the site visits. Some of these include:

- Adequate staffing allocation to facilitate diabetes coordination and timely data entry
- Availability of knowledgeable computer resource people in-house
- Comprehensive registries that were useful for proactive, efficient patient care, program planning, and evaluation
- Formal processes to help obtain referral information from outside sources
- Documentation protocols and forms that are modified to maximize utility and minimize the burden of documentation
- Dedicated, multi-disciplinary diabetes teams with defined roles; teams that meet on a frequent basis to facilitate care coordination and planning; dedicated time set aside for meeting and planning purposes
- Reporting systems to ensure administration and decision makers have access to timely and valid data for planning and evaluation purposes
- Active and formal continuous quality improvement programs
- Significant outreach programs in the community that incorporate traditional learning methods and practices (e.g., talking circles, traditional feasts, dancing and pow wows, integration of health issues into cultural events, etc.)

- Access to medial channels to help promote education messages (e.g., through tribal newspaper/radio, newsletters, calendars, payroll, etc.)
- Collaboration with other community programs to promote education messages and maximize resources (e.g., WIC, casinos, Head Start, elders, schools, employers, universities, public health, food service vendors, etc.)

The aggregated summary of “Integrated Diabetes Education and Clinical Standards Recognition Program for American Indian and Alaska Native Communities” in Bemidji area are stratified by state Michigan, Minnesota and Wisconsin are shown in the Tables 4, 5 and 6 respectively.

**Table-4 Michigan Integrated Diabetes Education and Clinical Standards
Recognition Program**

MICHIGAN TRIBES (Sample Size=9)	MET	PARTIAL	UNMET
	%	%	%
STANDARD -1			
TEAM MEMBERS	89	0	11
MEETINGS	56	11	33
MINUTES	11	56	33
DIABETES REGISTRY	11	67	22
EDUCATIONAL PROGRAM. MANUAL	0	67	33
MISSION STATEMENT	0	11	89
EDUCATIONAL GOALS	0	0	100
ORG ANIZATION CHART	0	33	67
EDUCATIONAL STRUCTURE	0	11	89
ADMINSTRATIVE COMMITMENT	0	33	67
STANDARD -2			
EDUCATIONAL DEVLOPMENT /NEEDS	0	33	67
TARGET POPULATION	0	56	44
COMMUNITY ASSESSMENT	0	67	33
EDUCATIONAL GOALS/OBJECTIVES	0	11	89
RESOURCES IDENTIFIED& PROVIDED	0	11	89
STANDARD -3			
ADVISORY BODY	0	22	78
MEETINGS	0	22	78
COMPOSITION	0	0	100
MINUTES	0	11	89
EVALUATION/INPUT	0	11	89
STANDARD -4			
COORDINATOR	100	0	0
EDUCATION & EXPERIENCE	100	0	0
AUTHORITY	0	22	78
CONTINUATION EDUCATION UNITS	78	0	22
STANDARD -5			
INSTRUCTIONAL TEAM IDENTIFIED	11	56	33
REGISTRED NURSE	78	0	22
REGISTRED DIETITIAN	67	0	33
REVIEW EDUCATIONAL MATERIALS	0	11	89
STANDARD -6			
SKILLS/KNOWLEDGE	11	67	22
CONTINUATION EDUCATION UNITS	33	33	34

STANDARD -7			
CURRICULUM	78	11	11
10 CONTENT AREAS	78	11	11
LOCAL UPDATE	0	22	78
INTERPRETERS ORIENTATION	11	11	78
STANDARD -8			
NEEDS ASSESSMENT PROCESS	0	22	78
PROCESS FORM DEVELOPED	0	22	78
STANDARD -9			
FORMS IN MEDICAL RECORDS	11	67	22
RESOURCE PATIENT MANAGEMENT SYSTEM	11	78	11
SUBJECTIVE /OBJECTIVE/ACTION/PLAN DOCUMENTATION	0	22	78
DIABETES EDUCATION CODES	11	56	33
STANDARD -10			
BEHAVIORAL OUTCOMES	0	89	11
CLINICAL OUTCOMES	0	22	78
PRE AND POST EVALUATION	0	22	78
CONSUMER SATISFACTION	0	0	100
ADVISORY INPUT	0	11	89
AUDIT DATA TRACKING	0	89	11

Table-5 Minnesota Integrated Diabetes Education and Clinical Standards Recognition Program

MINNESOTA TRIBES (Sample Size=12)	MET	PARTIAL	UNMET
	%	%	%
STANDARD -1			
TEAM MEMBERS	75	0	25
MEETINGS	75	0	25
MINUTES	58	17	25
DIABETES REGISTRY	25	50	25
EDUCATIONAL PROGRAM. MANUAL	8	8	84
MISSION STATEMENT	50	0	50
EDUCATIONAL GOALS	17	17	66
ORG ANIZATION CHART	42	8	50
EDUCATIONAL STRUCTURE	8	0	92
ADMINSTRATIVE COMMITMENT	8	0	92
STANDARD -2			
EDUCATIONAL DEVLOPMENT /NEEDS	8	0	92
TARGET POPULATION	17	0	83
COMMUNITY ASSESSMENT	8	0	92
EDUCATIONAL GOALS/OBJECTIVES	17	0	83
RESOURCES IDENTIFIED& PROVIDED	8	0	92
STANDARD -3			
ADVISORY BODY	8	0	92
MEETINGS	8	0	92
COMPOSITION	8	0	92
MINUTES	8	0	92
EVALUATION/INPUT	8	0	92
STANDARD -4			
COORDINATOR	75	17	8
EDUCATION & EXPERIENCE	67	8	25
AUTHORITY	25	8	67
CONTINUATION EDUCATION UNITS	42	16	42
STANDARD -5			
INSTRUCTIONAL TEAM IDENTIFIED	25	17	58
REGISTRED NURSE	50	0	50
REGISTRED DIETITIAN	8	0	92
REVIEW EDUCATIONAL MATERIALS	8	0	92
STANDARD -6			
SKILLS/KNOWLEDGE	58	8	34
CONTINUATION EDUCATION UNITS	33	33	34
STANDARD -7			
CURRICULUM	25	0	75
10 CONTENT AREAS	25	0	75
LOCAL UPDATE	0	25	75
INTERPRETERS ORIENTATION	0	0	100

STANDARD -8			
NEEDS ASSESSMENT PROCESS	25	8	67
PROCESS FORM DEVELOPED	8	25	67
STANDARD -9			
FORMS IN MEDICAL RECORDS	0	8	92
RESOURCE PATIENT MANAGEMENT SYSTEM	25	0	75
SUBJECTIVE /OBJECTIVE/ACTION/PLAN DOCUMENTATION	75	8	17
DIABETES EDUCATION CODES AND POLICIES	0	0	100
STANDARD -10			
BEHAVIORAL OUTCOMES	33	8	58
CLINICAL OUTCOMES	83	0	17
PRE AND POST EVALUATION	0	0	100
CONSUMER SATISFACTION	17	0	83
ADVISORY INPUT	0	0	100
AUDIT DATA TRACKING	25	0	75

Table-6 Wisconsin Integrated Diabetes Education and Clinical Standards Recognition Program			
WISCONSIN TRIBES (Sample Size=11)	MET	PARTIAL	UNMET
	%	%	%
STANDARD -1			
TEAM MEMBERS	100	0	0
MEETINGS	73	0	27
MINUTES	28	45	27
DIABETES REGISTRY	27	55	18
EDUCATIONAL PROGRAM. MANUAL	18	55	27
MISSION STATEMENT	9	9	82
EDUCATIONAL GOALS	0	8	92
ORG ANIZATION CHART	18	27	55
EDUCATIONAL STRUCTURE	9	9	82
ADMINSTRATIVE COMMITMENT	18	27	55
STANDARD -2			
EDUCATIONAL DEVLOPMENT /NEEDS	0	18	82
TARGET POPULATION	9	18	73
COMMUNITY ASSESSMENT	0	27	73
EDUCATIONAL GOALS/OBJECTIVES	0	9	91
RESOURCES IDENTIFIED& PROVIDED	9	9	82
STANDARD -3			
ADVISORY BODY	0	27	73
MEETINGS	0	18	82
COMPOSITION	0	9	91
MINUTES	0	9	91
EVALUATION/INPUT	0	0	100
STANDARD -4			
COORDINATOR	100	0	0
EDUCATION & EXPERIENCE	91	9	0
AUTHORITY	64	18	18
CONTINUATION EDUCATION UNITS	64	18	18
STANDARD -5			
INSTRUCTIONAL TEAM IDENTIFIED	0	73	27
REGISTRED NURSE	100	0	0
REGISTRED DIETITIAN	100	0	0
REVIEW EDUCATIONAL MATERIALS	9	0	91
STANDARD -6			
SKILLS/KNOWLEDGE	0	73	27
CONTINUATION EDUCATION UNITS	0	36	64
STANDARD -7			
CURRICULUM	27	9	64
10 CONTENT AREAS	45	0	55
LOCAL UPDATE	9	0	91
INTERPRETERS ORIENTATION	0	0	100

STANDARD -8			
NEEDS ASSESSMENT PROCESS	0	18	82
PROCESS FORM DEVELOPED	0	18	82
STANDARD -9			
FORMS IN MEDICAL RECORDS	0	100	0
RESOURCE PATIENT MANAGEMENT SYSTEM	0	73	27
SUBJECTIVE /OBJECTIVE/ACTION/PLAN DOCUMENTATION	0	100	0
DIABETES EDUCATION CODES	0	55	45
STANDARD -10			
BEHAVIORAL OUTCOMES	18	9	73
CLINICAL OUTCOMES	18	73	9
PRE AND POST EVALUATION	0	9	91
CONSUMER SATISFACTION	9	9	82
ADVISORY INPUT	0	0	100
AUDIT DATA TRACKING	0	0	100

Conclusions

Report Impact: This summary report represents our first comprehensive diabetes surveillance capacity evaluation for the Bemidji Area. This diabetes surveillance evaluation report will be an invaluable resource for all the Bemidji Area tribal diabetes programs to build a foundation and sustain on-going surveillance capacity to monitor and track diabetes care. It is likely that programs may gain and lose capacity over time. By using this evaluation tool the BADSP team can target technical assistance and resources to assist I/T/Us with successful completion of the IDERP standards and creation of successful disease surveillance systems for monitoring and tracking diabetes. This report will guide the Great Lakes Epicenter and BADSP team to further work with diabetes programs to develop and design successful tribal diabetes outreach programs for improving quality diabetes data across the Bemidji Area.

Data Systems: Considerable variation existed with the diabetes data surveillance systems capacity indicators such as diabetes coordinators, RPMS with current packages, RPMS site manager support, clinical support, multidisciplinary diabetes team and staff trained in diabetes management system, for Michigan, Minnesota and Wisconsin Tribal diabetes programs for all settings evaluated in the IHS Bemidji area. Three tribes in Wisconsin and one tribe in Minnesota have different Computer Software other than RPMS for collecting diabetes related data. In Michigan, the Detroit urban center has been using a locally developed program and is planning to convert to RPMS. The Nottawaseppi Huron Potawatomi tribe uses the Diabetes Electronic Management System (DEMS) but is in the process of converting to RPMS. Frequent turnover of staff trained in the use and maintenance of the RPMS system was a challenge for many of the tribal sites.

Data Entry: The timeliness and accuracy of diabetes program data entry varies greatly among the various I/T/U programs. This variation was due to multiple causes including lack of staff, staff turnover, time constraints, training issues, administrative support issues, etc. Some programs experience significant time delays of data entry into the RPMS system, making it difficult to use for active diabetes care delivery, management, and evaluation efforts. [For example, in some tribes there was 1-2 months time delay in diabetes data entry.] The maintenance and update of the PCC active problem list is an ongoing problem for many tribal sites. The diabetes registries are usually updated at least every six months or annually, however, most programs lack systems to validate the accuracy of their registry data. Also, access to the Diabetes Management System was inconsistent among programs reviewed.

Data Retrieval: There was variation in the use of the diabetes registry and audit data for program evaluation purposes. Most sites use the data primarily for grant writing purposes and do not have formal quality improvement programs in place. Those sites where a formal quality improvement program is in place, frequently incorporate the diabetes audit into their ongoing planning needs. Only a few of the diabetes programs staff can generate Q-Man searches and automated reminder/recall letters or reports. Only five tribal diabetes programs could generate the electronic diabetes cumulative audit using the RPMS Diabetes Management System.

Data Utilization: The diabetes data is used for grant writing and reporting. The diabetes team usually presents the data to the clinical staff but seldom to the administration staff and the tribal health board. The diabetes audit data results are sometimes used for diabetes quality improvement.

Program Recognition Standards: Findings from the diabetes education site visits showed significant variation among the tribal programs. Many programs were unaware of the standards and requirements for education program recognition and had not yet begun the development of formal diabetes education programs. This being said, numerous diabetes programs in the Bemidji Area are currently working to attain diabetes education program recognition through the IHS in the future and several programs plan to apply within the next year. The diabetes healthcare consultants continue to offer regular technical assistance to the diabetes coordinators and programs that are interested in attaining diabetes education program recognition. Assistance is also available for any program wanting to improve its education programming, regardless of its decision to apply for recognition. Technical assistance is accomplished through ongoing site visits, conferences, and e-mail and telephone consultation. A diabetes list-serve, including the diabetes coordinators and technical assistance staff, was also established in the fall of 2002 to facilitate distribution of resources (such as sample policy manuals and documentation forms, etc.) and to foster collaboration and sharing ideas, experiences, and lessons learned among the tribal coordinators. The diabetes consultants are also available to work with the coordinators to help research specific diabetes education-related issues through regional, state, and national contacts.

Clinical Care: From 2000 to 2003, the improvements in diabetes quality of care measures, such as A1c test, lipid profile testing, and monitoring for diabetic nephropathy reported were encouraging. The dilated eye exam rate, one of the diabetes quality process measures, was below the Healthy People 2010 target rate of 75% across the entire IHS Bemidji area. The trends for overweight, obesity and not a current tobacco user have increased. Therefore, diabetes team efforts need to focus on working with providers and patients to implement quality improvement strategies and effective interventions to reduce the burden of secondary complications associated with diabetes. Overall there is a great potential and opportunity to improve diabetes care in IHS Bemidji area. The BADSP team will continue their efforts to help programs improve diabetes clinical process and outcomes by providing technical assistance and disseminating the diabetes audit outcomes findings across the entire Bemidji area.

Identified Training Needs: During our BADSP evaluation the various tribal diabetes program staff identified a number of training needs to improve their quality of diabetes care in the IHS Bemidji area. The following list provides some examples and is not meant to be all inclusive.

Technology Related

- RPMS-Diabetes Management System
- Advanced RPMS applications and running sophisticated diabetes summary reports
- Epi Info Software Training

Diabetes Education Program Recognition Process Related

- Development of Diabetes Education Recognition
- Strategies to work with schools for diabetes management and prevention
- IHS Diabetes Education Recognition and Reimbursement

Clinical Updates

- Examples of IHS Smoking Cessation Programs
- Pre-Diabetes
- Type 2 Diabetes in youth

Capacity Building

- Surveillance and Evaluation
- Data Analysis and Data Management
- Quality Improvement

In summary, varying levels of diabetes data surveillance and diabetes program recognition infrastructure was found to be in place throughout the I/T/U programs in Michigan, Minnesota and Wisconsin. The data capacities varied according to the diabetes program characteristics such as rural or urban, large or small, funding level, allocated time constraints, varied capacity of trained staff in Diabetes Management System, variation in the degree of computer skills and training, clinical, tribal, and administrative support, community involvement, resources allocated, staffing levels, levels of experience of the diabetes team, staff turnover, time devoted to program development and organizational purposes, and quality improvement program capacity.

Recommendations

1. Bemidji Area tribal diabetes programs need to continue their well-planned team efforts to reorganize in greater numbers to sustain diabetes surveillance capacity and the programs should be assessed periodically to monitor progress.
2. The diabetes programs within the Bemidji Area should continue implementing RPMS, the diabetes registry, and make efforts to accurately identify tribal members with diabetes. Programs should use the diabetes register to plan care proactively, to track and recall patients, and to assess care provided through the program.
3. Cross training of diabetes team members is encouraged so that more than one person is trained in the RPMS diabetes registry and related components (including Diabetes Management).
4. Each site should establish standards to ensure registry maintenance and validate the integrity of the registry data on a regular basis by comparing to the medical records information.
5. Programs should develop effective strategies and to enhance the existing tribal diabetes disease management infrastructure.
6. Programs should validate their diabetes registries removing the deceased patients from the registry and checking for misclassification of diabetes on a regular basis (minimum every six months to as frequently as possible depending upon their individual need).
7. Each site should integrate the data activities (i.e. diabetes audit) into their formal quality improvement process.
8. The diabetes programs should develop priorities and establish policies for building and maintaining a diabetes quality improvement program.
9. Programs should continue their efforts to build comprehensive diabetes education programs, aiming for IHS program recognition as an ultimate goal.
10. Programs are encouraged to actively pursue technical assistance for RPMS, surveillance/data, diabetes programming, education concerns through the Bemidji Area Diabetes Surveillance Team.
11. Coordinators are encouraged to use the diabetes list-serve to post questions/concerns/issues, as well as to share resources and the lessons learned from program efforts. (Contact information: Chandra Reddy at 1-800-472-7207).
12. The Bemidji Area Diabetes Surveillance team should continue to provide ongoing area wide training in the identified content areas such as Technology Related, Diabetes Education Program Recognition Process Related, Clinical Updates, and Capacity Building.

13. The BADSP team and diabetes programs should expand the pilot projects to impact targeted diabetes audit findings, increase collaboration and the dissemination of successful local I/T/U diabetes projects and initiatives, with appropriate state and federal initiatives.

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Appendix A: BADSP Evaluation Form

Reviewer:

STANDARD 1

Level 1

Team members are identified and meetings are started

Roles and responsibilities of team members are identified

Required team composition (coordinator, primary care provider, RN, and RD minimum) is in place.

* Diabetes Registry is in place. Elements included: (Diagnosis complication, status, onset date, active problem list)

Standard data guidelines used

Annual update process identified: How often updated? How is registry used? Specific examples: Is registry substantiated?

Administration considers diabetes education program within the organizational structure

Program manual started, included (at a minimum): General description of the education program

Policies

Mission statement

* Goals and annual plan: Educational, Program Administration

* Organizational chart: inter & intra collaboration

Team Member roles and responsibilities (see critical elements chart: **attachment A**)

Education program structure

Forms

Written statements documentation: Team approach is integral component of diabetes education

Administrative commitment and support for team meetings, diabetes education evaluation

Evidence includes position descriptions, team meeting minutes, registry, organizational chart, program policies and program manual

Level 2

Team meets on a quarterly basis at a minimum

Team meetings are documented and include all of the following: team members' roles and responsibilities.

Communication among team members and collaboration partners.(critical issues tracked)

Coordinated and consistent approach to interpreting basic diabetes concepts
Coordination between appropriate departments
Diabetes Registry is updated annually
Diabetes team uses registry for annual planning
Organizational chart shows placement of diabetes education program in facility
Program Manual Documents description of (at a minimum): Organizational structure, mission statement, goals, annual plan, description of education team/process, follow-up and other program components
Signed by the appropriate personnel/department
There is a process in place for manual review and update
Approval mechanism is documented for program and policy change
<i>Evidence includes team meeting minutes, position descriptions, interdepartmental meetings and communication, registry, program policies, organizational chart and program manual</i>

STANDARD 2

Level 1

Tasks needed to develop the education program are identified
Target population and its educational needs are identified
Community assessment for diabetes education needs completed
* Questionnaire/Yearly progress report for Grant processing - completed
Diabetes education program goals and objectives are identified
Diabetes education resource assessment completed
Resource requirements are identified:
Space
Staffing
Budget
Instructional material
* Training (staff)
a) Diabetes related/Clinical

b) Programmatic 1) RPMS: 2) Program Planning Evaluations: 3) Data use
<i>Evidence includes written community and resource assessments, task timelines, written description of target population, annual program plan and advisory body(s) minutes</i>

<i>Level 2</i>
Educational program goals and objectives are established and documented annually:
Goals and objectives are realistic and measurable
Program towards meeting goals/objectives is evaluated
Resources sufficient to meet program goals and objectives continue to be identified and provided
Services meet needs of target population
Consumer access to education program is defined and documented
* Program Goals and Objectives are established and documented annually.
Goals and objectives are realistic and measurable
Program towards meeting goals/objectives is evaluated
Resources sufficient to meet program goals and objectives continue to be identified and provided
Services meet needs of target population
Consumer access to program is defined and documented
<i>Evidence includes advisory body(s) meeting minutes, annual program plan, annual program evaluation and program policies</i>

STANDARD 3

<i>Level 1</i>
Advisory body (s) identified
Advisory body is documented
Minutes reflect advisory body selection and methods to seek advice
Composition reflects community served
Composition included medical, educational, community/consumer at a minimum
<i>Evidence includes advisory body(s) meeting minutes and program policies</i>
<i>Level 2</i>
* There is a process that provides community and other advisory member input into the education program, including curricula and annual program plan, at least annually. Identifies lines of communication of data (back & forth)
<i>Evidence includes advisory body(s) meeting minutes and program policies</i>

STANDARD 4

Level 1

Coordinator is identified

Coordinator is a credentialed health professional

Appropriate education and experience is documented

* a) Criteria: b) Training identified: c) Training plan d) Budget

Responsibilities and line of authority are documented

Evidence includes position description, curriculum vitae, continuing education records, licenses and credentials

Level 2

The coordinator manages educational team efforts, including development of goals and objectives

The coordinator acts as diabetes education liaison between team members, departments or programs and the community

Coordinator's position description and annual employee evaluation reflect roles and responsibilities

Coordinator documents **CEU activity** (minimum of 12 hours/2 years in diabetes educational principles or leadership/management)

Evidence includes position description, team meeting minutes, advisory body(s) meeting minutes, annual employee evaluation and continuing education records

STANDARD 5

Level 1

Instructional team members identified

Instructional team includes RN and RD minimum

Program manual documents instructional staff, credentials, roles and responsibilities

Evidence includes instructional team listing in program manual, program policies, position descriptions, curriculum vitas, continuing education records, licenses and credentials

Level 2

Instructors maintain diabetes education services for target population based on identified needs

Instructors use a variety of teaching/learning methods

There is evidence of team review and approval of education materials, teaching methods and activities

Evidence includes curricula and lesson plans, community needs assessments and team meeting minutes

STANDARD 6

Level 1

Instructors have or are updating knowledge and skills in diabetes in American Indian/Alaska Native communities

Instructors have knowledge, skills and abilities in behavioral interventions, teaching/learning and counseling/communication

Evidence includes curriculum vitas, continuing education records, licenses and credentials

Level 2

Instructors document CEU activity (minimum of 12 hours/2 years) in diabetes management, behavioral interventions, teaching/learning skills and counseling skills needs

Evidence includes continuing education records

STANDARD 7

Level 1 (Indicate Curriculum:)

Site uses approved IHS curriculum

Diabetes education curricula are identified and reviewed

Curricula meet community needs

Curricula include written measurable learning objectives, content outline, instructional methods, materials and means of achieving objectives

Content includes ten content areas of *National Standards*

Evidence includes written curricula and lesson plans

Level 2

Curricula and educational resources are in place and reviewed annually by instruction team for scientific accuracy and cultural relevancy

New materials are field tested for relevancy and comprehension

Interpreters are oriented on a regular basis (as appropriate)

Evidence includes curricula, material review/revision dates, field testing summary, interpreter and program policies

STANDARD 8

Level 1

Instructional team develops an individualized needs assessment process

A form is developed to document process
Documentation includes relevant medical history, cultural influences, health beliefs and attitudes, diabetes knowledge/skill, readiness to learn, preferred learning method, family support and financial limitations
<i>Evidence includes documentation of a needs assessment form in the patient education record (medical record)</i>

Level 2
Instructional team uses standard diabetes educational assessment process and documentation form
Educational assessment is individualized
The needs assessment is the basis for initial and ongoing written educational plan
Instructional team periodically reassesses individuals
* Administrative needs: assessment process completed and documented
* Training need identifies: Structural, programmatically
* Assessment plan updated annually
* Future plan needs based on evaluation identified:
* a) Data sharing
* b) Referrals out: data back into program
* c) Tracking system
<i>Evidence includes documentation of education process in the patient education record (medical record)</i>

STANDARD 9

Level 1
Diabetes education forms are identified as part of the medical record
Instructors and coders are familiar with diabetes education codes (RPMS preferred)
Team agrees that SOAP charting is the education documentation method of choice
Program manual identifies policies and procedures regarding transfer of confidential medical record information
<i>Evidence includes documentation in patient education record (medical record) and program policies</i>

Level 2
The teaching process assessment, planning, implementation & evaluation of individualized educational experience) documented in the medical record
Documentation of education shows collaboration among educational team

Evidence includes documentation of education process in the patient education record (medical record)

STANDARD 10

Level 1
There is documentation of program goals and objectives, including desired program outcomes
Program evaluation includes a minimum of (1) behavioral and (2) clinical indicators
Program evaluation design allows for pre and post program measures
A process is in place for evaluating consumer satisfaction
Evidence includes advisory body(s) meeting minutes, program policies, annual program plan, CQI plans/data reports and consumer satisfaction survey/data/reports

Level 2
There is documentation of progress towards goals and objectives, including (2) clinical and (1) behavioral outcome indicator
There is documentation of appropriate advisory body review and input on outcomes, evaluation plan and program modifications
Program records document, at a minimum, population served, types of service, length of participation, setting, content and age
There is documentation that action is taken as a result of program evaluation and consumer review and evaluation

Level 3
* In last 3 years how many audits have been completed.
* Is audit done manually or electronically.
* Who gathers audit data?
* Who does audit entry and analysis
* Audit data is used for:
* Trending incidence of complications
* Feed back to providers
* Tracking of individual diagnosis
* Follow-up for medical services
* Program improvement & evaluation
* Case Management

*	Has program used local option question: (give examples of questions)
*	How have programs changed based on local option questions
*	Audit data is reported to who:
*	Facility Staff
*	Primary Providers only
*	Advisory body
*	Community
*	Clients/individuals or groups
*	Funding agency
	<i>Evidence includes advisory body(s) meeting minutes, program policies, program manual and annual evaluation summary</i>

OVERALL COMMENTS:

Appendix B

BEMIDJI AREA PATIENT COUNT								
1996 Through 2003								
<i>Report formerly called "Area User Population"</i>								
For Distribution of Congressional Increases								
Indian, Active in 3 Year Timeframe								
Prepared & Updated by Barbara Vanek 6/16/04: Final 2003								
SERVICE UNIT/OPERATING UNIT	ACTIVE USERS 01/01/94- 12/31/96	ACTIVE USERS 01/01/95- 12/31/97	ACTIVE USERS 01/01/96- 12/31/98	ACTIVE USERS 01/01/97- 12/31/99	ACTIVE USERS 01/01/98- 12/31/00	ACTIVE USERS 01/01/99- 12/31/01	ACTIVE USERS 01/01/00- 12/31/02	ACTIVE USERS 01/01/00- 12/31/03
CENTRAL WISCONSIN SU [18-22]	21,572	22,198	23,130	23,869	24,523	25,382	26,266	27,057
ONEIDA OU	8,481	8,915	9,406	9,657	9,877	10,059	10,409	10,836
MENOMINEE OU	7,457	7,670	7,939	8,197	8,413	8,640	8,888	9,163
STOCKBRIDGE-MUNSEE OU	2,393	2,058	2,024	1,928	2,052	2,267	2,464	2,349
HO-CHUNK	3,241	3,555	3,761	4,087	4,181	4,416	4,505	4,709
EASTERN MICHIGAN SU [18-23]	19,353	17,687	17,401	18,007	18,825	19,292	19,775	20,535
SAULT STE MARIE OU	13,735	12,173	12,106	12,388	12,846	12,926	13,188	13,704
GRAND TRAVERSE OU	1,828	1,968	1,549	1,753	2,106	2,240	2,234	2,179
SAGINAW/MT PLEASANT OU	2,442	2,147	2,266	2,314	2,485	2,655	2,847	3,085
BAY MILLS OU	1,348	1,399	1,480	1,552	1,388	1,471	1,506	1,567
NEW TRIBES	3,612	3,612	3,612	4,073	4,093	4,194	4,461	4,624
LITTLE RIVER OTTAWA (new tribe 9/94)	500	500	500	685	685	685	817	824
POKAGON POTAWATOMI (new tribe 9/94)	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
LITTLE TRAVERSE ODAWA (new tribe 9/94)	1,000	1,000	1,000	1,000	1,020	1,121	1,256	1,412
HURON POTAWATOMI (new tribe 3/96)	612	612	612	612	612	612	612	612
GUN LAKE (new tribe 8/99)				276	276	276	276	276
FOND DU LAC SU/OU [18-24]	7,315	7,794	8,048	8,092	8,134	7,475	7,512	7,622
GRAND PORTAGE SU/OU [18-25]	519	540	499	519	533	544	543	551
LEECH LAKE SU/OU [11-26]	9,848	10,257	10,336	10,719	11,079	11,515	11,869	12,393
NORTHWESTERN WISCONSIN SU [18-27]	8,931	9,086	9,298	9,221	9,580	9,747	9,980	10,107
BAD RIVER OU	1,863	1,945	2,006	2,022	2,049	2,067	2,081	2,079
ST CROIX OU	1,742	1,843	1,979	1,877	1,931	2,002	2,156	2,223

RED CLIFF OU	1,568	1,567	1,606	1,646	1,661	1,706	1,683	1,732
LAC COURTE OREILLES OU	3,758	3,731	3,707	3,676	3,939	3,972	4,060	4,073
<u>NICOLET SU [18-28]</u>	<u>4,333</u>	<u>4,714</u>	<u>4,971</u>	<u>4,906</u>	<u>5,067</u>	<u>5,255</u>	<u>5,504</u>	<u>5,979</u>
SOKAOGON/MOLE LAKE OU	512	522	480	471	430	395	401	412
FOREST CO POTAWATOMI OU	903	1,134	1,289	1,391	1,438	1,573	1,714	2,046
LAC DU FLAMBEAU OU	2,918	3,058	3,202	3,044	3,199	3,287	3,389	3,521
MILLE LACS SU/OU [18-29]	2,386	2,873	3,424	3,561	3,664	3,647	3,892	4,076
<u>MINNESOTA RIVER SU [18-30]</u>	<u>1,598</u>	<u>1,802</u>	<u>1,853</u>	<u>1,890</u>	<u>1,984</u>	<u>1,982</u>	<u>2,064</u>	<u>2,298</u>
UPPER SIOUX OU	340	332	338	347	358	372	370	386
LOWER SIOUX OU	449	494	519	550	582	606	650	698
PRAIRIE ISLAND OU	315	327	339	344	508	430	481	538
SHAKOPEE OU	494	649	657	649	536	574	563	676
NETT LAKE/BOIS FT SU/OU [18-31]	1,237	1,278	1,273	1,373	1,440	1,389	1,485	1,546
RED LAKE SU/OU [11-32]	7,971	8,279	8,450	8,654	8,844	8,894	9,012	8,946
<u>WESTERN MICHIGAN SU [18-34]</u>	<u>3,740</u>	<u>3,997</u>	<u>3,803</u>	<u>3,807</u>	<u>3,884</u>	<u>3,985</u>	<u>4,145</u>	<u>4,943</u>
KEWEENAW BAY/L'ANSE OU	2,267	2,393	2,103	2,146	2,200	2,291	2,390	2,538
HANNAHVILLE/MI POTAWATOMI OU	1,065	1,120	1,167	1,205	1,197	1,180	1,204	1,816
LAC VIEUX DESERT/WATERSMEET OU	408	484	533	456	487	514	551	589
WHITE EARTH SU/OU [11-35]	8,441	8,745	9,232	9,558	9,822	10,215	10,629	11,069
GRAND TOTAL AREA	100,856	102,862	105,330	108,249	111,472	113,516	117,137	121,746
Average yearly increase of 3.16%.								
Increase over previous year (ave. of 3,295)		2,006	2,468	2,919	3,223	2,044	3,621	4,609
			2.40%	2.77%	2.98%	1.83%	3.19%	3.93%

Appendix C

Diabetes Prevalence Estimates	2000			2001			2002			2003		
Michigan-Tribes	Cases▲ #	User Population ♣	Rate * (%)	Cases▲ #	User Population ♣	Rate * (%)	Cases▲ #	User Population ♣	Rate * (%)	Cases▲ #	User Population ♣	Rate (%) * (%)
Bay Mills	61	1,388	4.4	66	1,471	4.5	66	1,506	4.4	66	1,567	4.2
Grand Traverse	130	2,106	6.2	66	2,240	2.9	221	2,234	9.9	103	2,179	4.7
Gun Lake	NA	276	NA	18	276	6.5	21	276	7.6	28	276	10.1
Hannahville	54	1197	4.5	79	1180	6.7	78	1204	6.5	68	1816	3.7
Keweenaw Bay	NA	2,200	NA	123	2,291	5.4	150	2,390	6.3	132	2,538	5.2
Lac Vieux Desert	33	487	6.8	63	514	12.3	76	551	13.8	76	589	12.9
Little River	38	685	5.5	75	685	10.9	135	817	16.5	135	824	16.4
Little Traverse	115	1,020	11.3	113	1,121	10.1	126	1,256	10.0	194	1,412	13.7
Nottawaseppi Huron	35	612	5.7	26	612	4.2	26	612	4.2	24	612	3.9
Pokagon	85	1,500	5.7	79	1,500	5.3	91	1,500	6.1	99	1,500	6.6
Saginaw	166	2,485	6.7	220	2,655	8.3	270	2,847	9.5	246	3,085	8.0
Saulte Ste Marie	566	12,846	4.4	818	12,926	6.3	998	13,188	7.6	870	13,704	6.3
MI-Total	1,283	26,802	4.8	1,746	27,471	6.4	2,258	28,381	8.0	2,041	30,102	6.8
IHS Bemidji Area	5,979	111,472	5.4	8,829	113,516	7.8	9,966	117,137	8.5	9,749	121,746	8.0

Source: Based on Bemidji Area Indian Health Service ambulatory patient care data, 2000-2003; Data for urban Indian Health Centers are not available; ▲ Cases (Numerator) are self report of unduplicated counts of patients with an ICD-9 diabetes diagnosis code 250.0-250.9 as their purpose of visit; ♣ User Population (Denominator) is the population of AI/AN who have visited IHS or tribal health facilities at least once in the past three fiscal years. * The calculated crude prevalence rates may be inaccurate because counts may be underreported or over reported and the calculated prevalence rates may be small or large due to changes in numerator and denominator and the sample size fluctuation affects the prevalence rates causing intra and inter tribal variability; NA=Not Available; **Note:** Considerable caution should be used in interpreting these prevalence rates from 2000 to 2003.

Appendix D

Diabetes Prevalence Estimates	2000			2001			2002			2003		
	Cases [♣] #	User Population [♣]	Rate * (%)	Cases [♣] #	User Population [♣]	Rate * (%)	Cases [♣] #	User Population [♣]	Rate * (%)	Cases [♣] #	User Population [♣]	Rate (%) [*]
Minnesota-Tribes												
Fond du lac	NA	8,134	NA	993	7,475	13.3	545	7,512	7.3	545	8,609	6.3
Grand Portage	38	533	7.1	35	544	6.4	44	543	8.1	68	551	12.3
Leech Lake	NA	11,079	NA	756	11,515	6.6	721	11,869	6.1	783	12,393	6.3
Lower Sioux	NA	582	NA	33	606	5.4	48	650	7.4	48	698	6.9
Mille Lacs	390	3,664	10.6	450	3,647	12.3	495	3,892	12.7	495	4,076	12.1
Nett Lake (Bois Forte)	61	1,440	4.2	76	1,389	5.5	134	1,485	9.0	100	1,546	6.5
Prairie Island	59	508	11.6	63	430	14.7	63	481	13.1	63	538	11.7
Red Lake	640	8,844	7.2	641	8,894	7.2	690	9,012	7.7	713	8,946	8.0
Shakopee	26	536	4.9	30	574	5.2	47	563	8.3	48	676	7.1
Upper Sioux	29	358	8.1	35	372	9.4	35	370	9.5	36	386	9.3
White Earth	440	9,822	4.5	638	10,215	6.2	725	10,629	6.8	665	11,069	6.0
MN-Total	1,683	45,500	3.7	3,750	45,661	8.2	3,547	47,006	7.5	3,564	49,488	7.2
IHS Bemidji Area	5,979	111,472	5.4	8,829	113,516	7.8	9,966	117,137	8.5	9,749	121,746	8.0

Source: Based on Bemidji Area Indian Health Service ambulatory patient care data, 2000-2003; Data for urban Indian Health Centers are not available; [♣] Cases (Numerator) are self report of unduplicated counts of patients with an ICD-9 diabetes diagnosis code 250.0-250.9 as their purpose of visit; [♣]User Population (Denominator) is the population of AI/AN who have visited IHS or tribal health facilities at least once in the past three fiscal years. * The calculated crude prevalence rates may be inaccurate because counts may be underreported or over reported and the calculated prevalence rates may be small or large due to changes in numerator and denominator and the sample size fluctuation affects the prevalence rates causing intra and inter tribal variability; NA=Not Available; **Note:** Considerable caution should be used in interpreting these prevalence rates from 2000 to 2003.

Appendix E

Diabetes Prevalence Estimates	2000			2001			2002			2003		
	Cases♣ #	User Population ♣	Rate * (%)	Cases♣ #	User Population ♣	Rate * (%)	Cases♣ #	User Population ♣	Rate * (%)	Cases♣ #	User Population ♣	Rate (%) *
Wisconsin-Tribes												
Bad River	228	2,049	11.1	217	2,067	10.5	218	2,081	10.5	247	2,079	11.9
Forest County	88	1,438	6.1	97	1,573	6.2	97	1,714	5.7	97	2,046	4.7
HoChunk	544	4,181	13.0	549	4,416	12.4	492	4,505	10.9	492	6,884	7.1
Lac du Flambeau	258	3,199	8.1	274	3,287	8.3	366	3,389	10.8	330	4,073	8.1
Lac Courte Oreilles	369	3,939	9.4	385	3,972	9.7	394	4,060	9.7	424	3,521	12.0
Menominee	466	8,413	5.5	506	8,640	5.9	514	8,888	5.8	593	9,163	6.5
Mole Lake	45	430	10.5	45	395	11.4	49	401	12.2	45	412	10.9
Oneida	944	9,877	9.6	863	10,059	8.6	1155	10,409	11.1	1254	10,836	11.6
Red Cliff	NA	1,661	NA	155	1,706	9.1	177	1,683	10.5	194	1,732	11.2
St Croix	135	1931	7.0	130	2002	6.5	123	2156	5.7	178	2223	8.0
Stockbridge-Munsee	NA	2,052	NA	130	2,267	5.7	153	2,464	6.2	157	2,349	6.7
WI Total	3,077	39,170	7.9	3,351	40,384	8.3	3,738	41,750	9.0	4,011	45,318	8.9
IHS Bemidji Area	5,979	111,472	5.4	8,829	113,516	7.8	9,966	117,137	8.5	9,749	121,746	8.0

*Source: Based on Bemidji Area Indian Health Service ambulatory patient care data, 2000-2003; Data for urban Indian Health Centers are not available; ♣ Cases (Numerator) are self report of unduplicated counts of patients with an ICD-9 diabetes diagnosis code 250.0-250.9 as their purpose of visit; ♣ User Population (Denominator) is the population of AI/AN who have visited IHS or tribal health facilities at least once in the past three fiscal years. * The calculated crude prevalence rates may be inaccurate because counts may be underreported or over reported and the calculated prevalence rates may be small or large due to changes in numerator and denominator and the sample size fluctuation affects the prevalence rates causing intra and inter tribal variability; NA=Not Available; **Note:** Considerable caution should be used in interpreting these prevalence rates from 2000 to 2003.*

Appendix F

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