Chapter 5
BEST PRACTICES FROM THE SPECIAL DIABETES PROGRAM FOR INDIANS

In response to Congressional direction, the Indian Health Service (IHS) used supplemental funding from the Consolidated Appropriations Act of 2001 to implement a consensus-based, Indian health best practices approach. This approach allowed the IHS National Diabetes Program to build upon the successes of the diabetes grant programs established by the Balanced Budget Act of 1997.

To develop an Indian health best practices approach, the IHS National Diabetes Program convened a Best Practices Workgroup in February 2001. The Workgroup included experts from the IHS, tribes and tribal organizations, urban Indian organizations, the IHS Model Diabetes Programs, and project coordinators from Special Diabetes Program for Indians grant sites. The Workgroup based the models on findings from the latest diabetes scientific research and outcomes studies, as well as their own successful experiences. The Workgroup developed 14 best practice models for successful diabetes prevention, treatment, and education practices in American Indian and Alaska Native (AI/AN) communities.

The Requests for Grant Application (RFAs) for FY 2001–2003 included a Best Practices section, which provided one-page summaries on each of the 14 Best Practice Models. Each summary provided information on the importance of the best practice topic, scientific evidence supporting the recommended best practice, measures to assess effectiveness, issues to consider when developing or modifying programs, and additional resources for each best practice topic.

Longer documents for each Best Practice topic were also developed. The longer documents include a more in-depth discussion of implementation of each Best Practice topic and applicable references for evidence-based recommendations. These long documents are found on the IHS National Diabetes Program web site. (www.ihs.gov/medicalprograms/diabetes)

Each year, when the diabetes grant programs applied for Special Diabetes Program for Indians funding, the Area Diabetes Consultants and Chief Medical Officers evaluated the diabetes grant programs on their use of the Best Practice Models. The IHS National Diabetes Program compiled the evaluation data to obtain information on the implementation of the Best Practice Models by the diabetes grant programs.

This chapter includes the one-page summaries for each of the 14 best practice models and an evaluation of their use by the diabetes grant programs.

Indian Health Diabetes Best Practice Models

This section provides one page outlines of the diabetes Best Practices Models. These best practices are based on the experiences of other Indian health diabetes programs and IHS Model Diabetes Programs, as well as on scientific research findings. The Best Practice Model outlines may help programs:

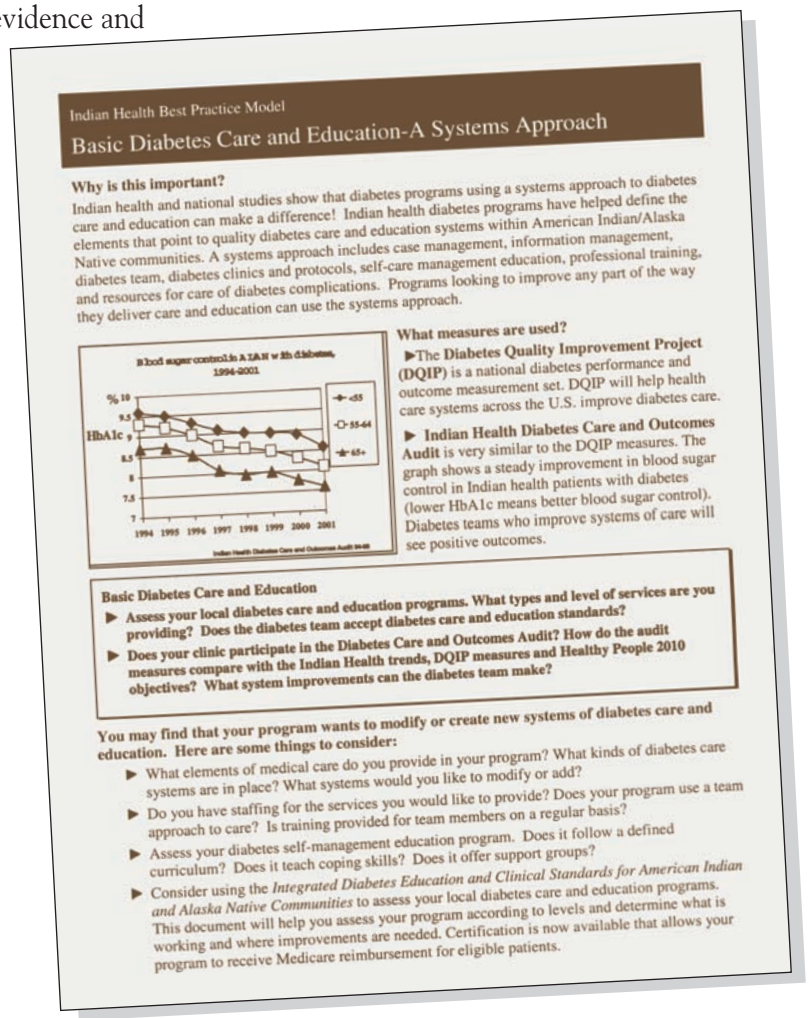
- Identify strengths in diabetes services and resources for their community.
- Find gaps in diabetes services or programs.
- Establish program priorities.
- Find best practice models that could work in their community.
- Begin a work plan to develop their local best practice models.

Here is a list of the 14 Best Practice Model topics that follow:

Best Practice Model for American Indian/Alaska Native Communities: Basic Diabetes Care and Education – A Systems Approach

The Indian Health Best Practices Workgroup identified nine elements of quality diabetes care and education based upon scientific evidence and recognized standards of care. Implementation or enhancement of these elements within diabetes programs may result in improved diabetes outcomes.

A review of Special Diabetes Program for Indians grant applications indicated that **sixty three percent (63%) of grant programs used some or all of the best practice guidance for Basic Diabetes Care and Education - A Systems Approach** to review, design, implement, and/or enhance case management, information management, the diabetes team, diabetes clinics and protocols, self-care management education, professional training, and resources of care for diabetes complications.



Indian Health Best Practice Model

Basic Diabetes Care and Education-A Systems Approach

Why is this important?

Indian health and national studies show that diabetes programs using a systems approach to diabetes care and education can make a difference! Indian health diabetes programs have helped define the elements that point to quality diabetes care and education systems within American Indian/Alaska Native communities. A systems approach includes case management, information management, diabetes team, diabetes clinics and protocols, self-care management education, professional training, and resources for care of diabetes complications. Programs looking to improve any part of the way they deliver care and education can use the systems approach.

Blood sugar control in AI/AN with diabetes, 1994-2001

% HbA1c

9.5
8.5
8
7.5
7

1994 1995 1996 1997 1998 1999 2000 2001

<55
55-64
65+

What measures are used?

▶The **Diabetes Quality Improvement Project (DQIP)** is a national diabetes performance and outcome measurement set. DQIP will help health care systems across the U.S. improve diabetes care.

▶ **Indian Health Diabetes Care and Outcomes Audit** is very similar to the DQIP measures. The graph shows a steady improvement in blood sugar control in Indian health patients with diabetes (lower HbA1c means better blood sugar control). Diabetes teams who improve systems of care will see positive outcomes.

Basic Diabetes Care and Education

- **Assess your local diabetes care and education programs. What types and level of services are you providing? Does the diabetes team accept diabetes care and education standards?**
- **Does your clinic participate in the Diabetes Care and Outcomes Audit? How do the audit measures compare with the Indian Health trends, DQIP measures and Healthy People 2010 objectives? What system improvements can the diabetes team make?**

You may find that your program wants to modify or create new systems of diabetes care and education. Here are some things to consider:

- What elements of medical care do you provide in your program? What kinds of diabetes care systems are in place? What systems would you like to modify or add?
- Do you have staffing for the services you would like to provide? Does your program use a team approach to care? Is training provided for team members on a regular basis?
- Assess your diabetes self-management education program. Does it follow a defined curriculum? Does it teach coping skills? Does it offer support groups?
- Consider using the *Integrated Diabetes Education and Clinical Standards for American Indian and Alaska Native Communities* to assess your local diabetes care and education programs. This document will help you assess your program according to levels and determine what is working and where improvements are needed. Certification is now available that allows your program to receive Medicare reimbursement for eligible patients.

One Tribe's Story:

Hualapai Tribe's Diabetes Prevention and Management Program is Widespread

The Hualapai Tribe in Northwest Arizona is fighting diabetes using a system that coordinates efforts between many tribal departments including the clinic, the diabetes program, youth program, WIC program, school and elders program. The tribal leaders, health care providers, diabetes program staff, teachers, parents, and children are involved. As a result, many of the tribe's 1700 tribal members living on the one-million acre reservation have received education for diabetes management and prevention. "I believe our program reaches everyone in the community," says Lorrain Bravo, Diabetes Coordinator.

The program's primary strength is its visibility within the community and establishment of trust by community members. The home visits, diabetes clinic, community health fair, 100 Mile Club, youth camp and annual diabetes conference together provide a program that is open and appropriate to all community members.

The tribe offers special activities including an Inter-Tribal Youth Wellness Camp, Youth Pow-wow and Community Health Fair. Tribal programs collaborate with each other to provide support of diabetes prevention education at events such as the Youth Wellness Winter and Spring Break Activities, the Sobriety Festival, and La Paz Run.

The Diabetes Program's primary successes are:

1) increased awareness of the extent of diabetes in the community and behavioral risk factors

2) creation of a "culture of wellness" such that community members are quick to register for events/activities that have a behavior change goal

3) provision of consistent social support for behavior change as demonstrated by participants in the 100 Mile Club, Senior Exercise and Weight Management Support Group

4) increased attendance at the weekly diabetes clinics by 45%.

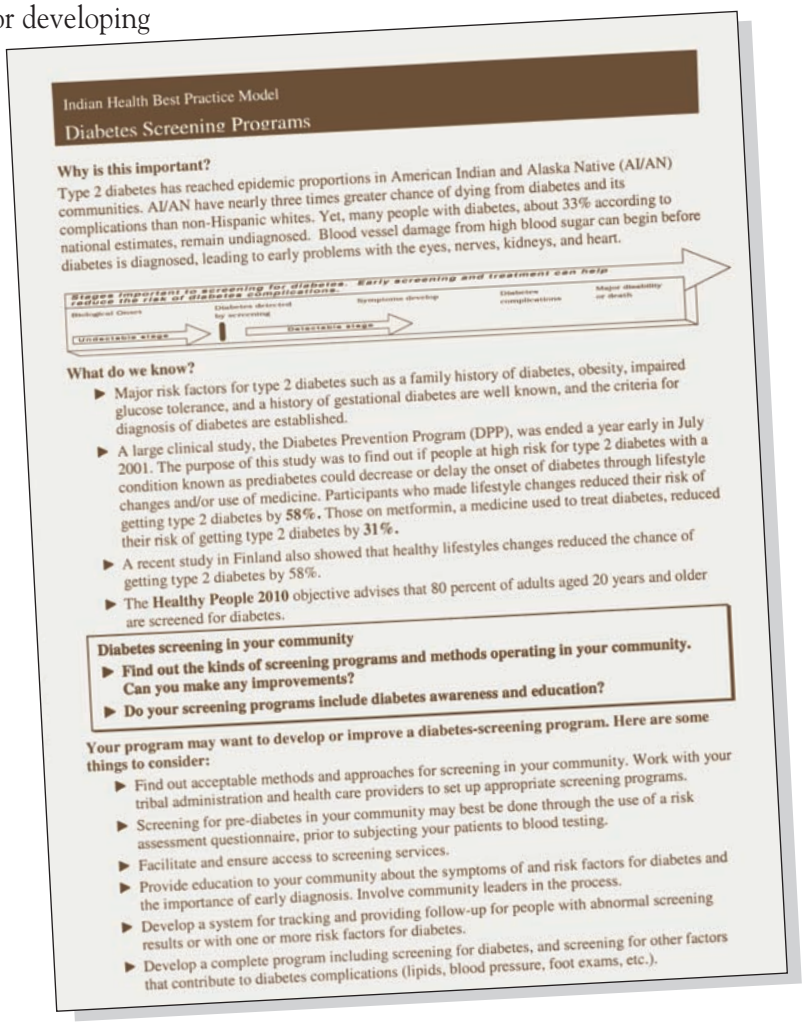
With awareness markedly improved and a "culture of wellness" developing, the Hualapai community is ready for sustainable programs that support behavior change. The Diabetes Program uses the strengths of a small community, e.g. close social network, rapid information exchange and intra-personal familiarity, to support and reward changes in food and activity choices, which in turn promotes positive behavior changes throughout the entire community.

Jorigine Bender and her sons have learned how to prevent or delay diabetes through programs at the Hualapai Tribe. Elwynn Havatone, left, and Frazier Havatone attend the tribe's summer youth camp where they get blood sugars tested before and after camp. After three days of exercise and healthy eating, their blood sugars drop. Jorigine volunteers at the camp and attends other diabetes prevention activities including Family Fitness Day. Jorigine says the diabetes prevention education is working. "I try not to serve fatty foods in my home. My sons are eating less candy and drinking less pop," she says.

Best Practice Model for American Indian/Alaska Native Communities: Diabetes Screening Programs

Screening activities are important to identify individuals with diabetes before complications develop as well as people who are at-risk for developing diabetes. Screening programs also serve to link at-risk individuals with promising intervention programs within their communities.

A review of Special Diabetes Program for Indians grant applications indicated that **sixty four percent (64%) of grant programs used some or all of the best practice guidance for Diabetes Screening Programs** to design and implement diabetes screening activities in their communities.



Indian Health Best Practice Model

Diabetes Screening Programs

Why is this important?

Type 2 diabetes has reached epidemic proportions in American Indian and Alaska Native (AI/AN) communities. AI/AN have nearly three times greater chance of dying from diabetes and its complications than non-Hispanic whites. Yet, many people with diabetes, about 33% according to national estimates, remain undiagnosed. Blood vessel damage from high blood sugar can begin before diabetes is diagnosed, leading to early problems with the eyes, nerves, kidneys, and heart.

What do we know?

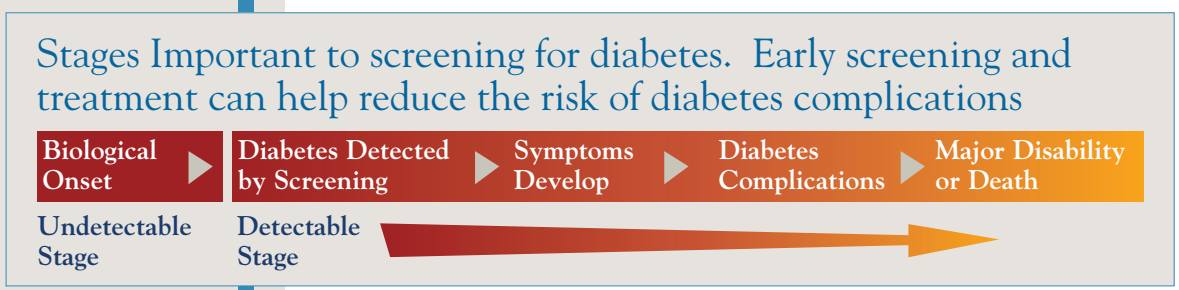
- Major risk factors for type 2 diabetes such as a family history of diabetes, obesity, impaired glucose tolerance, and a history of gestational diabetes are well known, and the criteria for diagnosis of diabetes are established.
- A large clinical study, the Diabetes Prevention Program (DPP), was ended a year early in July 2001. The purpose of this study was to find out if people at high risk for type 2 diabetes with a condition known as prediabetes could decrease or delay the onset of diabetes through lifestyle changes and/or use of medicine. Participants who made lifestyle changes reduced their risk of getting type 2 diabetes by **58%**. Those on metformin, a medicine used to treat diabetes, reduced their risk of getting type 2 diabetes by **31%**.
- A recent study in Finland also showed that healthy lifestyles changes reduced the chance of getting type 2 diabetes by 58%.
- The **Healthy People 2010** objective advises that 80 percent of adults aged 20 years and older are screened for diabetes.

Diabetes screening in your community

- **Find out the kinds of screening programs and methods operating in your community. Can you make any improvements?**
- **Do your screening programs include diabetes awareness and education?**

Your program may want to develop or improve a diabetes-screening program. Here are some things to consider:

- Find out acceptable methods and approaches for screening in your community. Work with your tribal administration and health care providers to set up appropriate screening programs.
- Screening for pre-diabetes in your community may best be done through the use of a risk assessment questionnaire, prior to subjecting your patients to blood testing.
- Facilitate and ensure access to screening services.
- Provide education to your community about the symptoms of and risk factors for diabetes and the importance of early diagnosis. Involve community leaders in the process.
- Develop a system for tracking and providing follow-up for people with abnormal screening results or with one or more risk factors for diabetes.
- Develop a complete program including screening for diabetes, and screening for other factors that contribute to diabetes complications (lipids, blood pressure, foot exams, etc.).



One Tribe's Story:

Leech Lake Tribe Increases Number of People Being Screened for Diabetes

The Leech Lake Diabetes Program takes advantage of established gathering places to offer diabetes screenings and education. During the first three years of the grant, the tribe screened 874 people at 45 community events. One hundred and four referrals were made. Health staff screened people at community powwows, the tribal diabetes center, the fitness center, the PHS Hospital, schools, worksites, the tribal casino and at special events.

The Leech Lake Fitness Center is one place the tribe offers diabetes screenings. Many people visit the Center, not only because of the fitness opportunities, but because it has become a popular meeting place for community members. People drop in to chat, have coffee, get their blood pressures and blood sugars checked, and work out on the fitness equipment.

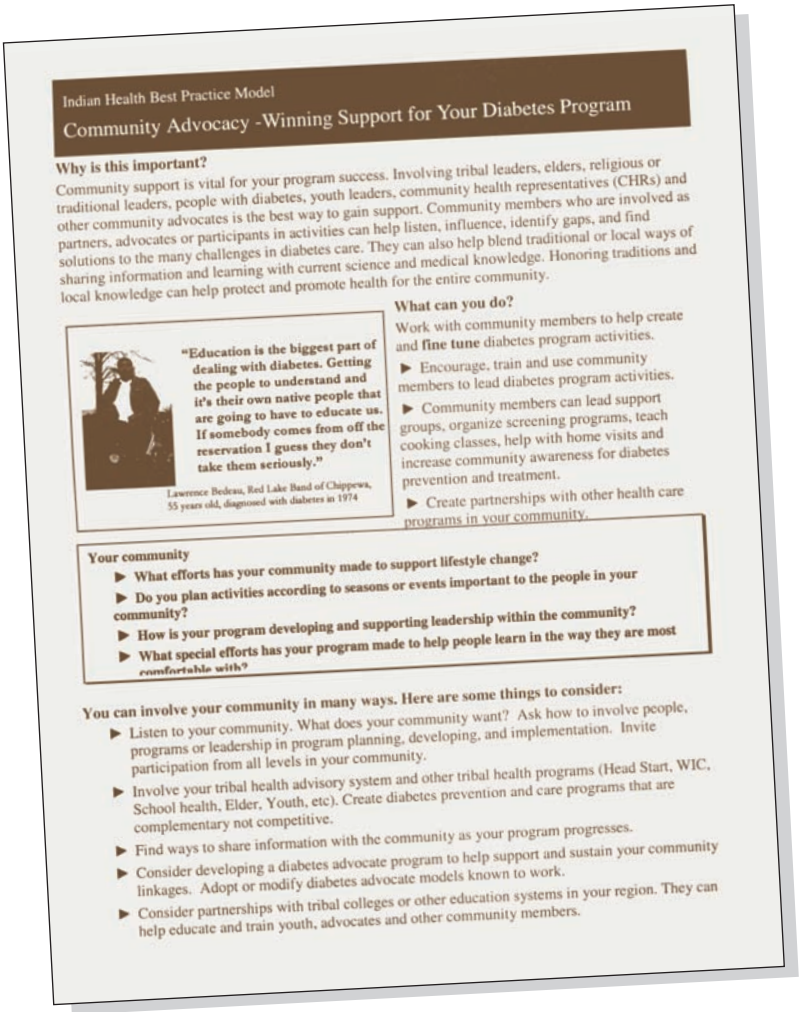
The two fitness staff help clients feel relaxed and welcomed. The outgoing attitudes of Fitness Center staff have brought more people in, and kept people coming back, resulting in more screenings and more frequent blood sugar checks.

Fitness Center Staff Becky Pennington (Red Lake Ojibwe) and Richard Beauliew (White Earth Ojibwe) share a laugh after checking blood sugar. The atmosphere of the Fitness Center is a main reason people keep coming back.

Best Practice Model for American Indian/Alaska Native Communities: Community Advocacy – Winning Support for Your Diabetes Program

Community support is important for the successful implementation and development of the diabetes grant program activities.

A review of Special Diabetes Program for Indians grant applications indicated that **forty percent (40%) of the grant programs used some or all of the best practice guidance for Community Advocacy – Winning Support for Your Diabetes Program** to engage tribal and spiritual leaders, tribal healers, people with diabetes, community members, and other partners to help plan, develop, and implement diabetes program activities in their communities.



Indian Health Best Practice Model

Community Advocacy -Winning Support for Your Diabetes Program

Why is this important?

Community support is vital for your program success. Involving tribal leaders, elders, religious or traditional leaders, people with diabetes, youth leaders, community health representatives (CHRs) and other community advocates is the best way to gain support. Community members who are involved as partners, advocates or participants in activities can help listen, influence, identify gaps, and find solutions to the many challenges in diabetes care. They can also help blend traditional or local ways of sharing information and learning with current science and medical knowledge. Honoring traditions and local knowledge can help protect and promote health for the entire community.

"Education is the biggest part of dealing with diabetes. Getting the people to understand and it's their own native people that are going to have to educate us. If somebody comes from off the reservation I guess they don't take them seriously."

Lawrence Bedeau, Red Lake Band of Chippewa, 55 years old, diagnosed with diabetes in 1974

What can you do?

Work with community members to help create and **fine tune** diabetes program activities.

- Encourage, train and use community members to lead diabetes program activities.
- Community members can lead support groups, organize screening programs, teach cooking classes, help with home visits and increase community awareness for diabetes prevention and treatment.
- Create partnerships with other health care programs in your community.

Your community

- **What efforts has your community made to support lifestyle change?**
- **Do you plan activities according to seasons or events important to the people in your community?**
- **How is your program developing and supporting leadership within the community?**
- **What special efforts has your program made to help people learn in the way they are most comfortable with?**

You can involve your community in many ways. Here are some things to consider:

- Listen to your community. What does your community want? Ask how to involve people, programs or leadership in program planning, developing, and implementation. Invite participation from all levels in your community.
- Involve your tribal health advisory system and other tribal health programs (Head Start, WIC, School health, Elder, Youth, etc). Create diabetes prevention and care programs that are complementary not competitive.
- Find ways to share information with the community as your program progresses.
- Consider developing a diabetes advocate program to help support and sustain your community linkages. Adopt or modify diabetes advocate models known to work.
- Consider partnerships with tribal colleges or other education systems in your region. They can help educate and train youth, advocates and other community members.

"Education is the biggest part of dealing with diabetes. Getting the people to understand, and it's their own native people that are going to have to educate us. If somebody comes from off the reservation I guess they don't take them seriously."

Lawrence Bedeau (Red Lake Band of Chippewa), 55 years old, diagnosed with diabetes in 1974

One Tribe's Story:

Community Volunteers are Reason for Program's Success

In 1987, the Zuni Wellness Program offered two 1-hour aerobics classes. Its staff was made up of only one person. Her office, located in a corner of an old elementary school, was furnished simply with a wooden desk and chair.

Today the Zuni Wellness Program has several employees and sponsors 30 aerobic classes; weight lifting circuit training; cardiovascular cross-training; an annual Holiday Eating Learning Program; a summer running, bicycling, and walking fitness series; and other community-wide fitness events. Youth through elders participate. Over 1,000 people visit the Wellness Center each month, and over 1,000 people participate in the wellness series events.

Over 1,000 people visit the Wellness Center each month, and over 1,000 people participate in the wellness series events.

How did the program grow so much? Leatrice Lewis, the former Wellness Center Program Manager, said, "Community involvement in leading and supporting the programs is key."

In addition to the regular Wellness Program staff, a group of 13 community volunteers called the "Z-Fit Team" lead fitness and health promotion activities in the center and around the community. The volunteers are true volunteers: They are not paid. Their reimbursement for volunteer hours is free fitness training and certification, and better health.

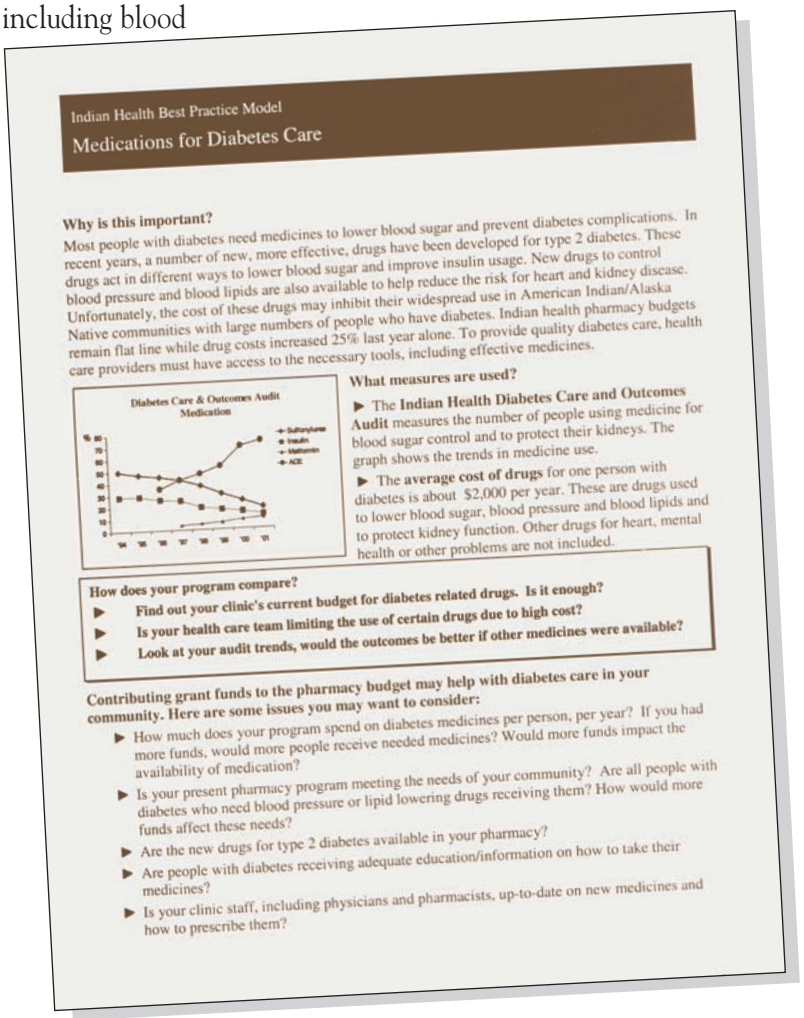
Loretta Beyuka is a volunteer Certified Aerobics Instructor who received her certification through the program. She volunteers to teach aerobics to elementary students. She says being a fitness volunteer introduced her to regular physical activity, which is something she now does almost every day. "I am becoming an aerobics fanatic," she said.

Loretta Beyuka (Zuni) is a volunteer certified aerobics instructor for the Zuni Pueblo. The process of getting certified, plus regularly teaching aerobics classes has made physical activity a habit. "I am becoming an aerobics fanatic," she says.

Best Practice Model for American Indian/Alaska Native Communities: Medications for Diabetes Care

To provide quality diabetes care, health care providers must have access to effective medications for their patients with diabetes, including blood sugar lowering, blood pressure lowering, and lipid lowering medications.

A review of Special Diabetes Program for Indians grant applications indicated that **twenty four percent (24%) of grant programs used some or all of the best practice guidance for Medications for Diabetes Care** to purchase newer, more effective drugs for the management of diabetes and its complications, to educate patients more effectively on medication regimens, and to update clinical staff on the prescription of newer medications for diabetes care.



Indian Health Best Practice Model

Medications for Diabetes Care

Why is this important?

Most people with diabetes need medicines to lower blood sugar and prevent diabetes complications. In recent years, a number of new, more effective, drugs have been developed for type 2 diabetes. These drugs act in different ways to lower blood sugar and improve insulin usage. New drugs to control blood pressure and blood lipids are also available to help reduce the risk for heart and kidney disease. Unfortunately, the cost of these drugs may inhibit their widespread use in American Indian/Alaska Native communities with large numbers of people who have diabetes. Indian health pharmacy budgets remain flat line while drug costs increased 25% last year alone. To provide quality diabetes care, health care providers must have access to the necessary tools, including effective medicines.

Diabetes Care & Outcomes Audit Medication

What measures are used?

- The **Indian Health Diabetes Care and Outcomes Audit** measures the number of people using medicine for blood sugar control and to protect their kidneys. The graph shows the trends in medicine use.
- The **average cost of drugs** for one person with diabetes is about $2,000 per year. These are drugs used to lower blood sugar, blood pressure and blood lipids and to protect kidney function. Other drugs for heart, mental health or other problems are not included.

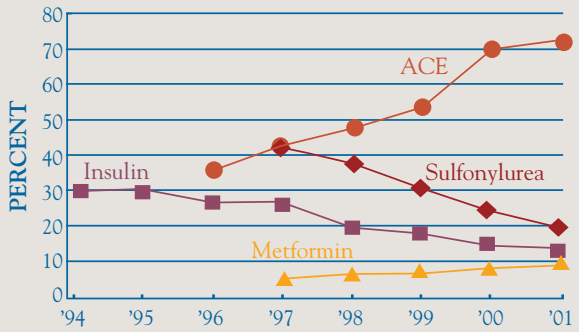
How does your program compare?

- **Find out your clinic's current budget for diabetes related drugs. Is it enough?**
- **Is your health care team limiting the use of certain drugs due to high cost?**
- **Look at your audit trends, would the outcomes be better if other medicines were available?**

Contributing grant funds to the pharmacy budget may help with diabetes care in your community. Here are some issues you may want to consider:

- How much does your program spend on diabetes medicines per person, per year? If you had more funds, would more people receive needed medicines? Would more funds impact the availability of medication?
- Is your present pharmacy program meeting the needs of your community? Are all people with diabetes who need blood pressure or lipid lowering drugs receiving them? How would more funds affect these needs?
- Are the new drugs for type 2 diabetes available in your pharmacy?
- Are people with diabetes receiving adequate education/information on how to take their medicines?
- Is your clinic staff, including physicians and pharmacists, up-to-date on new medicines and how to prescribe them?

Diabetes Care & Outcomes Audit Medication



Indian Health Diabetes Care and Outcomes Audit 94-01

Making the case for medication: A nurses story

Melissa Marks (Yankton Sioux / Seminole), LPN is a Diabetic Nurse and intimately knows the importance of taking medications. Her value on the BRAID (Becoming Responsible American Indians with Diabetes) team at OKCIC (Oklahoma City Indian Clinic) goes far beyond her training and education. Her life training began with her parents', grandparents', and sister's personal experiences. In 1990, Melissa was diagnosed.

Melissa's patients receive the benefit of her personal experience. She knows first-hand what it's like to not take medication. "When I was first diagnosed, I took my medication. Soon my blood sugar returned to normal. I began to feel better, so I thought maybe they made a mistake, and I wasn't really diabetic," recalls Melissa. "But soon after I stopped taking it, my symptoms came back." Melissa feels that everyone goes through a period of denial when first diagnosed.

With diabetes education and clinical support, Melissa learned why and how to take her medication and control her diabetes. She wishes that the opportunity for diabetes education existed for her grandparents and parents. "Because of a lack of education back then, my family members had to endure devastating complications like amputations and dialysis." She strongly encourages all newly-diagnosed patients to attend diabetes education classes. "They need the education to learn how they can prevent damage to their bodies with medication. Usually the ones who aren't taking their medication aren't going to the classes."

Melissa believes learning about the value of medication is critical. "One of the real challenges is that by the time some people are diagnosed, their bodies have adjusted to the symptoms of high blood sugar. They may not even recognize the symptoms because to them they feel normal."

Another challenge is to get patients to keep taking their medication, even when their blood sugar seems to be in control. She says it's important that patients realize they must take their medication every day, no matter how they feel, to help avoid the complications that affected her family. Melissa's job at OKCIC gives her a opportunity to spread this critical message. "I want patients to take their medication every day, the way the doctor has prescribed it. This is my goal."

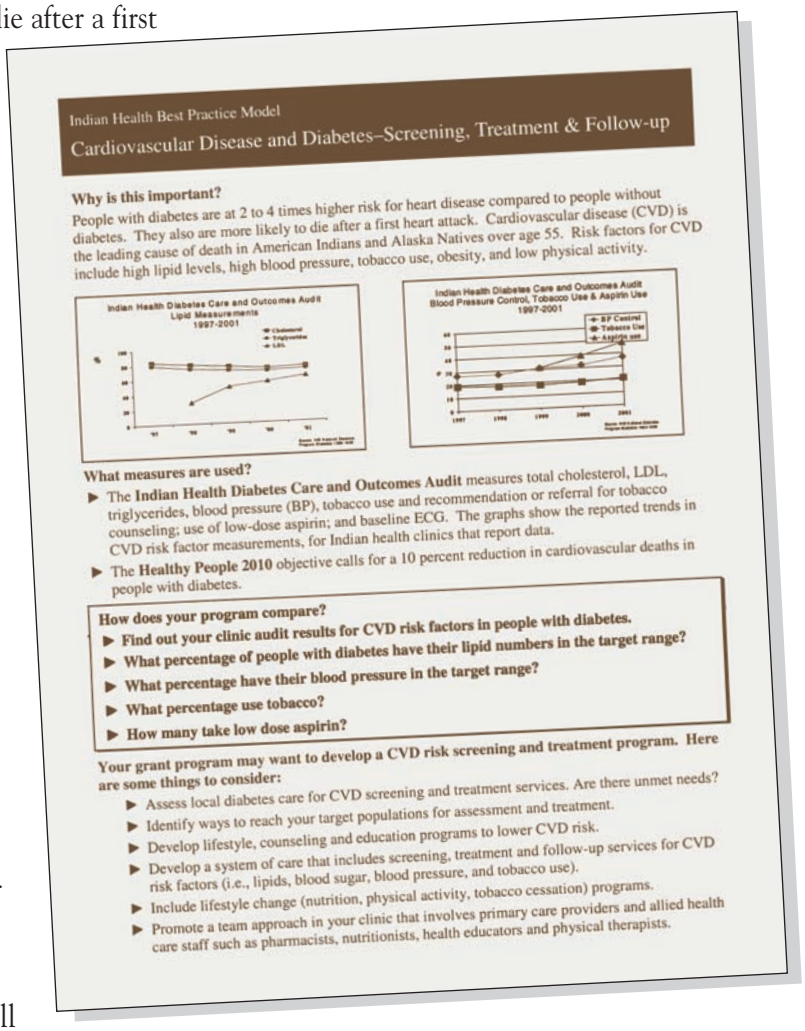
Melissa feels that with all the diabetes education opportunities being offered today, everyone has a chance to get their diabetes under control. Her personal self-care includes taking her medication regularly and walking on her lunch hour. "We didn't choose to have diabetes, but we can choose to be responsible and take care of ourselves."

Melissa feels fortunate to be a member of the BRAID team, and is especially proud that every team member knows every diabetes patient. This familiarity allows the team to create personalized health-care plans for each patient. She is looking forward to getting her RN and continuing to share her expertise, her experience and hope with Indian people with diabetes.

The BRAID Team of the Oklahoma Clinic emphasizes having each team member know every diabetes patient. This allows the multidisciplinary team to provide comprehensive personalized health care plans for every patient, including prescribing and making changes in medication to best combat diabetes complications.

Best Practice Model for American Indian/Alaska Native Communities: Cardiovascular Disease and Diabetes – Screening, Treatment, and Follow-Up

People with diabetes have a 2 to 4 times higher risk for heart disease compared to people without diabetes, and they are more likely to die after a first heart attack. Programs designed to address cardiovascular risk factors in people with diabetes may lead to reductions in the number of deaths due to cardiovascular disease.



Indian Health Best Practice Model

Cardiovascular Disease and Diabetes–Screening, Treatment & Follow-up

Why is this important?

People with diabetes are at 2 to 4 times higher risk for heart disease compared to people without diabetes. They also are more likely to die after a first heart attack. Cardiovascular disease (CVD) is the leading cause of death in American Indians and Alaska Natives over age 55. Risk factors for CVD include high lipid levels, high blood pressure, tobacco use, obesity, and low physical activity.

Indian Health Diabetes Care and Outcomes Audit
Lipid Measurements
1997-2001

Indian Health Diabetes Care and Outcomes Audit
Blood Pressure Control, Tobacco Use & Aspirin Use
1997-2001

What measures are used?

- The **Indian Health Diabetes Care and Outcomes Audit** measures total cholesterol, LDL, triglycerides, blood pressure (BP), tobacco use and recommendation or referral for tobacco counseling; use of low-dose aspirin; and baseline ECG. The graphs show the reported trends in CVD risk factor measurements, for Indian health clinics that report data.
- The **Healthy People 2010** objective calls for a 10 percent reduction in cardiovascular deaths in people with diabetes.

How does your program compare?

- **Find out your clinic audit results for CVD risk factors in people with diabetes.**
- **What percentage of people with diabetes have their lipid numbers in the target range?**
- **What percentage have their blood pressure in the target range?**
- **What percentage use tobacco?**
- **How many take low dose aspirin?**

Your grant program may want to develop a CVD risk screening and treatment program. Here are some things to consider:

- Assess local diabetes care for CVD screening and treatment services. Are there unmet needs?
- Identify ways to reach your target populations for assessment and treatment.
- Develop lifestyle, counseling and education programs to lower CVD risk.
- Develop a system of care that includes screening, treatment and follow-up services for CVD risk factors (i.e., lipids, blood sugar, blood pressure, and tobacco use).
- Include lifestyle change (nutrition, physical activity, tobacco cessation) programs.
- Promote a team approach in your clinic that involves primary care providers and allied health care staff such as pharmacists, nutritionists, health educators and physical therapists.

A review of Special Diabetes Program for Indians grant applications indicated that **seventeen percent (17%) of grant programs used some or all of the best practice guidance for Cardiovascular Disease and Diabetes – Screening, Treatment and Follow-up** to design and implement programs to screen and treat people with diabetes for their risk for cardiovascular disease. These programs included lifestyle counseling and education programs, as well as systems of care for high lipid levels, high blood pressure, low dose aspirin use, and tobacco cessation.

She Spreads the Word of the Danger of Smoking

If you are a smoker and visit the Sonoma County Indian Health Clinic, be prepared to be reprimanded. Whenever Bernadine Piceno, a member of the Pomo Tribe, sees someone smoking outside the clinic, she speaks frankly. "Smoking is bad for you!" she says, using a not-so-soft voice.

Bernadine has diabetes. Diabetes educators at the clinic informed her of her risk of heart disease because of diabetes and smoking. But, it wasn't until her first dialysis session that she took the clinic staff warnings seriously. "I wasn't afraid when I went in, even when they put the graft in," she recalls. "Then suddenly I thought, 'Oh my gosh! What have I gotten myself into?'"

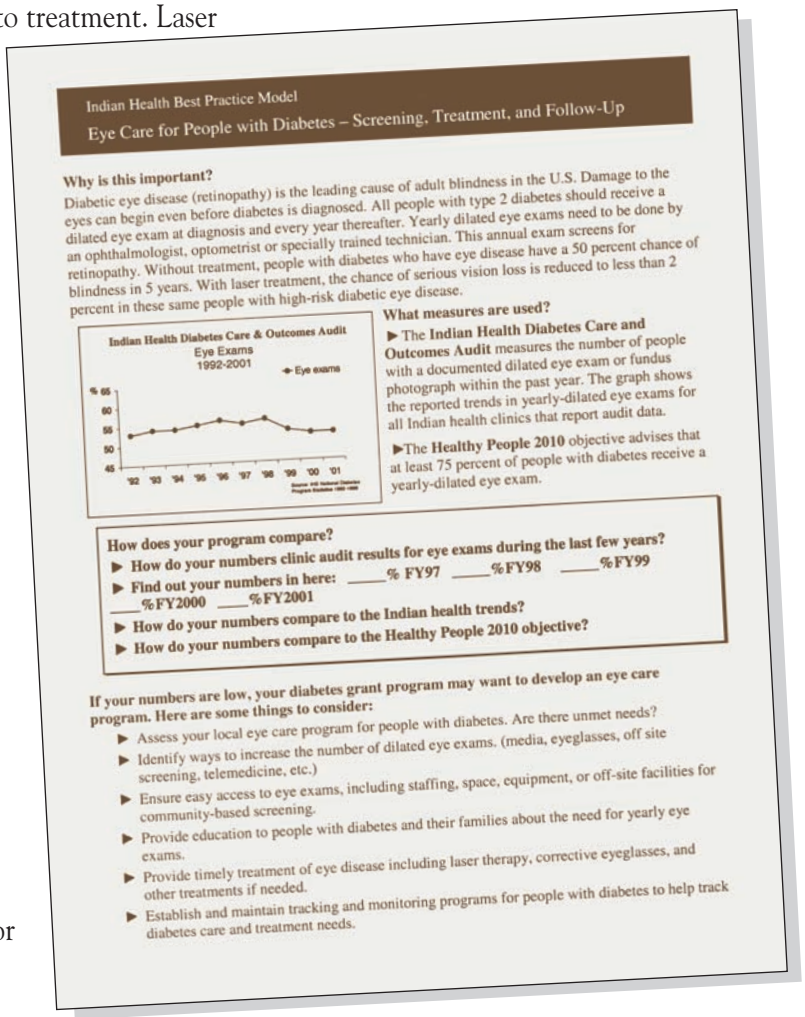
Bernadine immediately changed what she ate and quit smoking. She knew that not smoking would help her stay healthier while on dialysis. After two and a half years of dialysis, she received a kidney transplant. Now, Bernadine feels wonderful. She does not smoke, continues to eat healthy foods, and walks regularly. She knows that not smoking will help her avoid heart disease. "I plan to see my fourteen grandchildren grow up," she says.

Bernadine Piceno (Pomo) quit smoking to stay healthier while on dialysis. She received a kidney transplant and feels great.

Best Practice Model for American Indian/Alaska Native Communities: Eye Care for People with Diabetes – Screening, Treatment, and Follow-up

Dilated eye exams are important screening opportunities for finding diabetic eye disease in early stages when it is often more amenable to treatment. Laser treatment of high-risk diabetic eye disease greatly reduces the risk for serious vision loss.

A review of Special Diabetes Program for Indians grant applications indicated that **thirty five percent (35%) of grant programs used some or all of the best practice guidance for Eye Care for People with Diabetes – Screening, Treatment, and Follow-up** to design and implement screening and treatment programs for diabetic eye disease, systems for monitoring and tracking individuals with diabetic eye disease, and patient education programs regarding the need for yearly eye exams.



Indian Health Best Practice Model

Eye Care for People with Diabetes – Screening, Treatment, and Follow-Up

Why is this important?

Diabetic eye disease (retinopathy) is the leading cause of adult blindness in the U.S. Damage to the eyes can begin even before diabetes is diagnosed. All people with type 2 diabetes should receive a dilated eye exam at diagnosis and every year thereafter. Yearly dilated eye exams need to be done by an ophthalmologist, optometrist or specially trained technician. This annual exam screens for retinopathy. Without treatment, people with diabetes who have eye disease have a 50 percent chance of blindness in 5 years. With laser treatment, the chance of serious vision loss is reduced to less than 2 percent in these same people with high-risk diabetic eye disease.

Indian Health Diabetes Care & Outcomes Audit
Eye Exams
1992-2001
Eye exams
% 65 60 55 50 45
'92 '93 '94 '95 '96 '97 '98 '99 '00 '01

What measures are used?

▶ The **Indian Health Diabetes Care and Outcomes Audit** measures the number of people with a documented dilated eye exam or fundus photograph within the past year. The graph shows the reported trends in yearly-dilated eye exams for all Indian health clinics that report audit data.

▶ The **Healthy People 2010** objective advises that at least 75 percent of people with diabetes receive a yearly-dilated eye exam.

How does your program compare?

▶ **How do your numbers clinic audit results for eye exams during the last few years?**

▶ **Find out your numbers in here: ____% FY97 ____%FY98 ____%FY99 ____%FY2000 ____%FY2001**

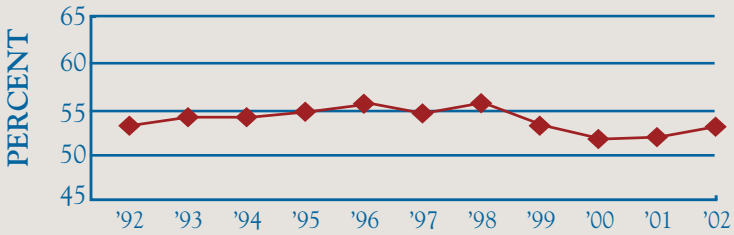
▶ **How do your numbers compare to the Indian health trends?**

▶ **How do your numbers compare to the Healthy People 2010 objective?**

If your numbers are low, your diabetes grant program may want to develop an eye care program. Here are some things to consider:

- ▶ Assess your local eye care program for people with diabetes. Are there unmet needs?
- ▶ Identify ways to increase the number of dilated eye exams. (media, eyeglasses, off site screening, telemedicine, etc.)
- ▶ Ensure easy access to eye exams, including staffing, space, equipment, or off-site facilities for community-based screening.
- ▶ Provide education to people with diabetes and their families about the need for yearly eye exams.
- ▶ Provide timely treatment of eye disease including laser therapy, corrective eyeglasses, and other treatments if needed.
- ▶ Establish and maintain tracking and monitoring programs for people with diabetes to help track diabetes care and treatment needs.

Diabetes Care & Outcomes Audit: Eye Exams 1992-2001



Indian Health Diabetes Care and Outcomes Audit 92-01

Grand Rhonde Member Knows Good Vision is Key to Driving Logging Trucks

Bob Mercier, a member of the Grand Rhonde Tribe, values his eyesight. He has grandchildren he wants to see grow up. He lives in a lush part of the country, near coastal Oregon, and finds peace in the scenery of tall Douglas Firs, cedars and dense underbrush. He enjoys the sights of the country-side from high up in the cab of one of his three logging trucks. Bob runs a logging truck business, and knows that one of the main keys to its continued operation is his good eyesight.

Bob was diagnosed with diabetes in 1982, and started his business two years later. At the same time he was learning what it took to get his commercial drivers license, he was learning what he needed to do to keep his good eyesight despite having diabetes.

Health providers at his tribal clinic referred him to a diabetes education class. Bob learned that good blood sugar control and regular eye checks would help him stay healthy, feel better and keep his eyesight. "I learned that I could do well with a healthy diet, regular exercise and taking insulin," he recalls.

He paid particular attention to eye care. "I get my eyes checked two times a year," he says. Bob attributes the regular eye checks to his ability to see clearly today. The dilated eye exams discovered leakage in the back of Bob's eyes, and surgery was scheduled. The leakage was found in its early stages, before serious damage was done.

"I've learned that if you don't keep up on everything, like the eyes, then you could be in trouble. These things could get away from you," he says.

Bob sometimes works 12-hours days, driving a truck loaded with fir logs, overseeing the loading and unloading. He says he loves his work and is happy that he will be able to continue for many years.

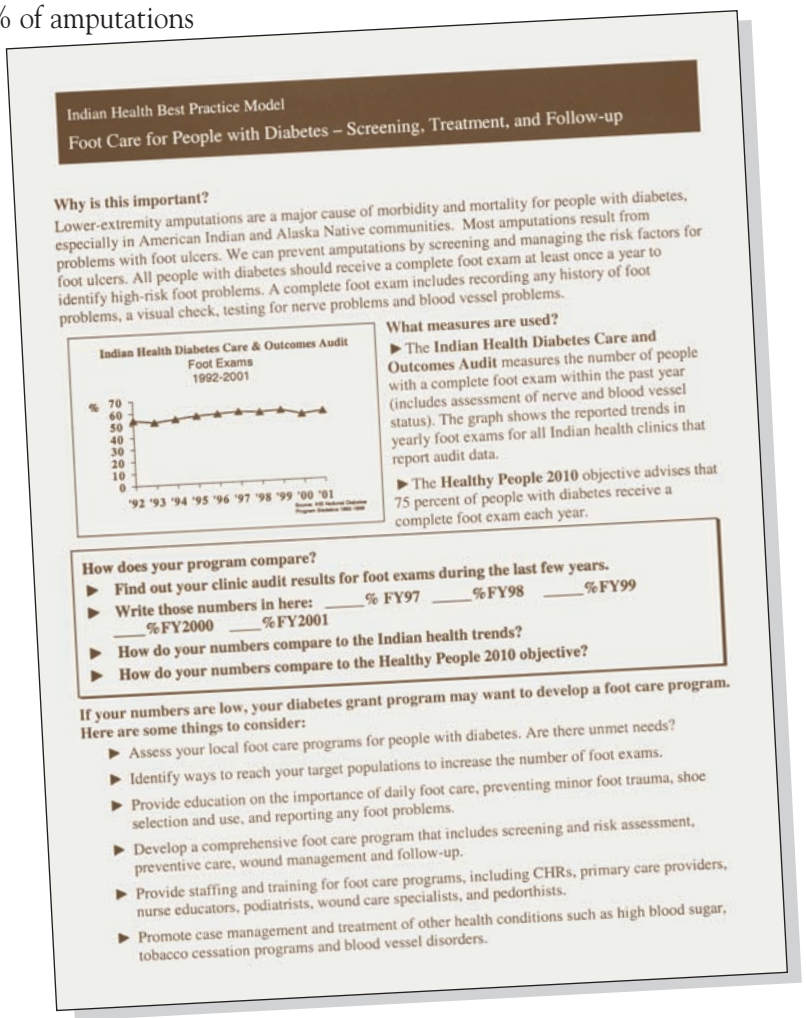
"I've learned that if you don't keep up on everything, like your feet and eyes, then you're in trouble because it can get away from you. I get my eyes checked twice a year. I've had laser surgery twice."

Bob Mercier (Grand Ronde Tribe)

Best Practice Model for American Indian/Alaska Native Communities: Foot Care for People with Diabetes – Screening, Treatment, and Follow-up

Lower extremity amputations are a serious complication of diabetes in American Indian/Alaska Native communities. Up to 75% of amputations can be prevented through appropriate screening and management of the risk factors for foot ulcers and amputations. Yearly complete foot exams are recommended to screen for and treat these risk factors.

A review of Special Diabetes Program for Indians grant applications indicated that **fifty seven percent (57%) of grant programs used some or all of the best practice guidance for Foot Care for People with Diabetes – Screening, Treatment, and Follow-up** to design and implement foot care programs for their communities.



Indian Health Best Practice Model

Foot Care for People with Diabetes – Screening, Treatment, and Follow-up

Why is this important?

Lower-extremity amputations are a major cause of morbidity and mortality for people with diabetes, especially in American Indian and Alaska Native communities. Most amputations result from problems with foot ulcers. We can prevent amputations by screening and managing the risk factors for foot ulcers. All people with diabetes should receive a complete foot exam at least once a year to identify high-risk foot problems. A complete foot exam includes recording any history of foot problems, a visual check, testing for nerve problems and blood vessel problems.

Indian Health Diabetes Care & Outcomes Audit
Foot Exams
1992-2001

% 70 60 50 40 30 20 10 0

'92 '93 '94 '95 '96 '97 '98 '99 '00 '01

What measures are used?

▶ The **Indian Health Diabetes Care and Outcomes Audit** measures the number of people with a complete foot exam within the past year (includes assessment of nerve and blood vessel status). The graph shows the reported trends in yearly foot exams for all Indian health clinics that report audit data.

▶ The **Healthy People 2010** objective advises that 75 percent of people with diabetes receive a complete foot exam each year.

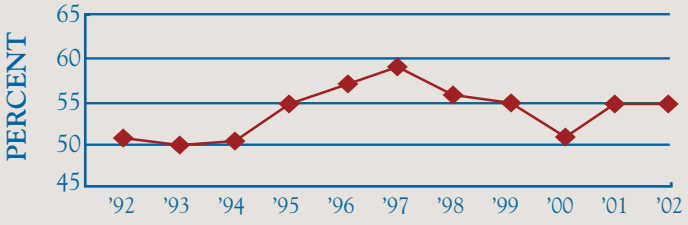
How does your program compare?

- **Find out your clinic audit results for foot exams during the last few years.**
- **Write those numbers in here: ____% FY97 ____%FY98 ____%FY99 ____%FY2000 ____%FY2001**
- **How do your numbers compare to the Indian health trends?**
- **How do your numbers compare to the Healthy People 2010 objective?**

If your numbers are low, your diabetes grant program may want to develop a foot care program. Here are some things to consider:

- Assess your local foot care programs for people with diabetes. Are there unmet needs?
- Identify ways to reach your target populations to increase the number of foot exams.
- Provide education on the importance of daily foot care, preventing minor foot trauma, shoe selection and use, and reporting any foot problems.
- Develop a comprehensive foot care program that includes screening and risk assessment, preventive care, wound management and follow-up.
- Provide staffing and training for foot care programs, including CHRs, primary care providers, nurse educators, podiatrists, wound care specialists, and pedorthists.
- Promote case management and treatment of other health conditions such as high blood sugar, tobacco cessation programs and blood vessel disorders.

Foot Exams 1992-2001



Indian Health Diabetes Care and Outcomes Audit 92-01

One Tribe's Story:

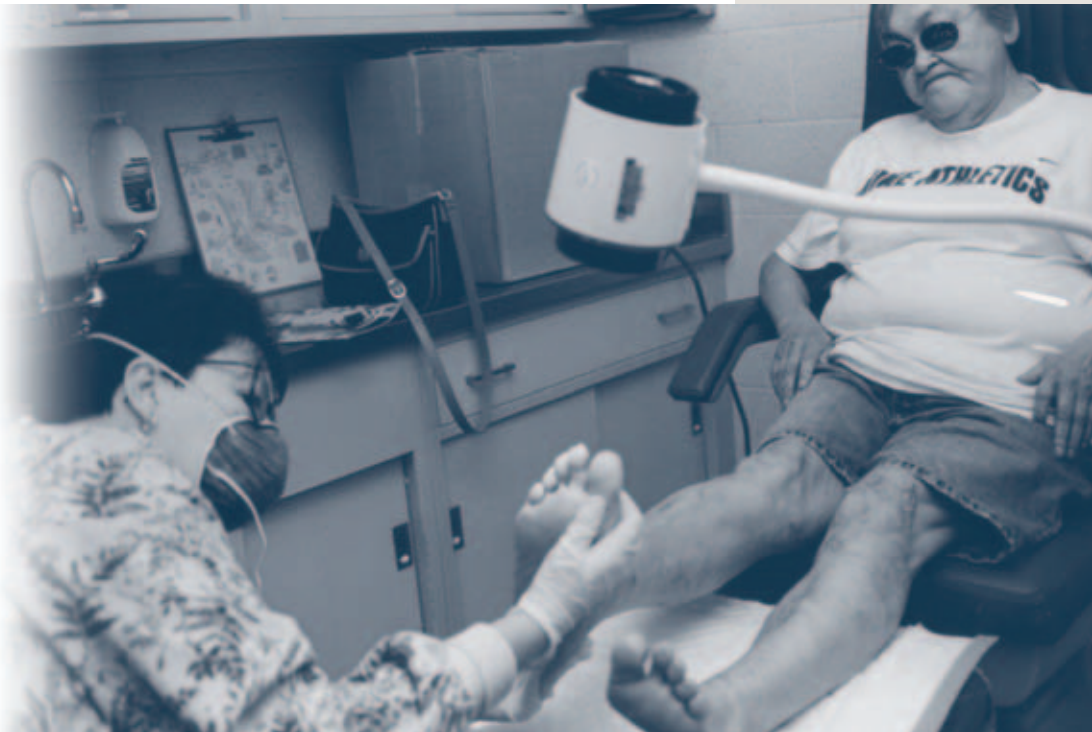
Comprehensive Foot Care Clinic Reduces Wounds and Amputations at Red Lake, Minnesota

Before the Red Lake Health Clinic started its comprehensive foot care program, Henrietta Norris wasn't sure how to take care of her feet. When she found calluses on her feet, she would try to cut them off with a knife. And, she had problems trimming her toenails. "I tried to cut my toenail, and I cut my toe," she recalls.

Now, the Ojibwe elder visits the foot care clinic at the Red Lake Clinic once every month. She gets her toenails trimmed, and a nurse examines her feet. The clinic gives Henrietta supportive shoes and inserts which have resulted in fewer calluses. But if Henrietta develops one, the foot care nurse carefully removes it. Henrietta has learned that foot problems need immediate attention. "If I have a problem in between appointments, like an ingrown toenail, I go to the clinic," she says.

Henrietta is one of many Red Lake Ojibwe reservation members participating in a comprehensive foot care program which includes a foot care team and detailed tracking systems for patient follow-up. The foot care program offers palliative foot care and wound care. A specially trained nurse staffs the Red Lake clinic two days each week and the satellite clinics monthly. Over 50 clients are seen monthly. A footwear clinic is held monthly, staffed by a certified orthotist.

As a result of the foot care program, 84% of diabetes patients have received foot exams. Amputations at the Red Lake Reservation have decreased from fifteen per thousand to six per thousand in one year.

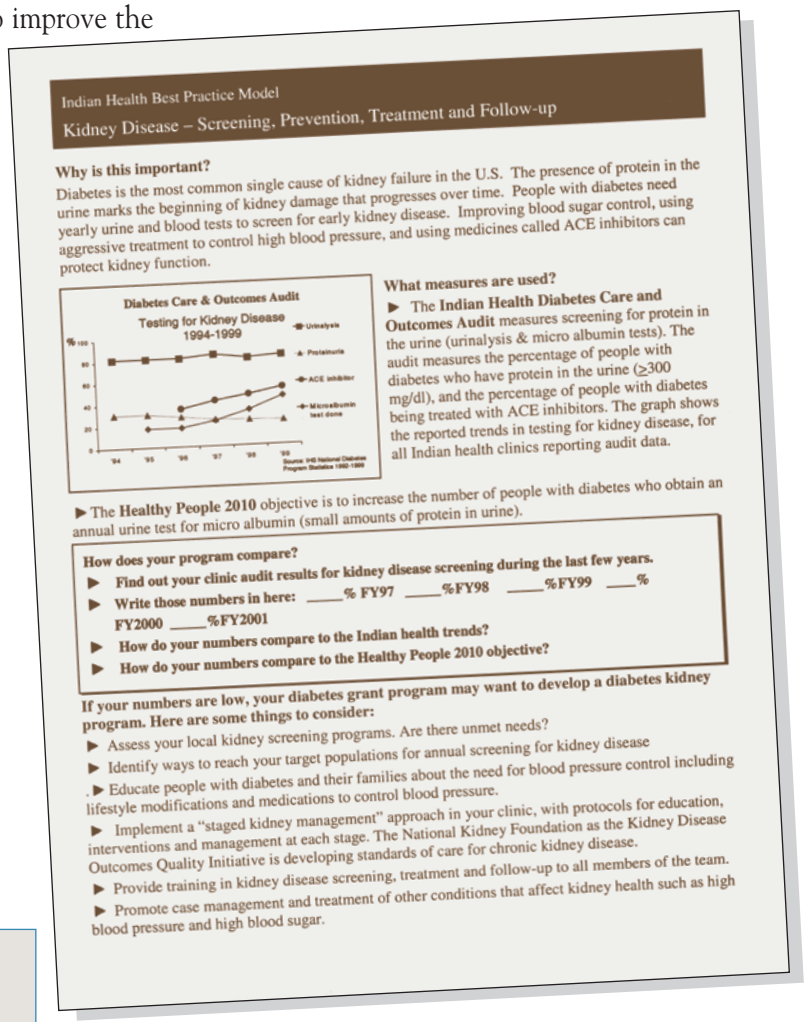


Henrietta Norris (Ojibwe) gets her feet checked at the Red Lake Health Clinic. Amputations at the tribe located in northern Minnesota have decreased since the foot care program began. Because of more thorough foot care education, including an emphasis on regular foot checks, patients like Henrietta are able to get treatment to heal foot wounds before they become serious. "If I have a problem like an ingrown toenail, I go to the clinic," she says.

Best Practice Model for American Indian/Alaska Native Communities: Kidney Disease – Screening, Treatment, and Follow-up

Early intervention in patients with chronic kidney disease can slow the progression of the disease to kidney failure. Early treatment can also improve the quality of life of people who eventually progress to end-stage kidney disease and need dialysis or transplantation.

A review of Special Diabetes Program for Indians grant applications indicated that **eighteen percent (18%) of grant programs used some or all of the best practice guidance for Kidney Disease – Screening, Prevention, Treatment, and Follow-up** to design and implement kidney care programs in their communities.



Indian Health Best Practice Model

Kidney Disease – Screening, Prevention, Treatment and Follow-up

Why is this important?

Diabetes is the most common single cause of kidney failure in the U.S. The presence of protein in the urine marks the beginning of kidney damage that progresses over time. People with diabetes need yearly urine and blood tests to screen for early kidney disease. Improving blood sugar control, using aggressive treatment to control high blood pressure, and using medicines called ACE inhibitors can protect kidney function.

Diabetes Care & Outcomes Audit
Testing for Kidney Disease
1994-1999

What measures are used?

▶ The **Indian Health Diabetes Care and Outcomes Audit** measures screening for protein in the urine (urinalysis & micro albumin tests). The audit measures the percentage of people with diabetes who have protein in the urine (≥300 mg/dl), and the percentage of people with diabetes being treated with ACE inhibitors. The graph shows the reported trends in testing for kidney disease, for all Indian health clinics reporting audit data.

▶ The **Healthy People 2010** objective is to increase the number of people with diabetes who obtain an annual urine test for micro albumin (small amounts of protein in urine).

How does your program compare?

▶ **Find out your clinic audit results for kidney disease screening during the last few years.**

▶ **Write those numbers in here: ____% FY97 ____%FY98 ____%FY99 ____% FY2000 ____%FY2001**

▶ **How do your numbers compare to the Indian health trends?**

▶ **How do your numbers compare to the Healthy People 2010 objective?**

If your numbers are low, your diabetes grant program may want to develop a diabetes kidney program. Here are some things to consider:

▶ Assess your local kidney screening programs. Are there unmet needs?

▶ Identify ways to reach your target populations for annual screening for kidney disease

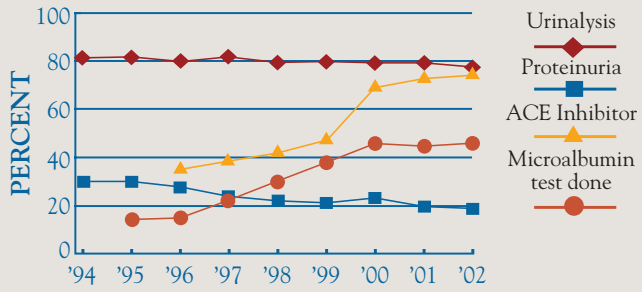
▶ Educate people with diabetes and their families about the need for blood pressure control including lifestyle modifications and medications to control blood pressure.

▶ Implement a "staged kidney management" approach in your clinic, with protocols for education, interventions and management at each stage. The National Kidney Foundation as the Kidney Disease Outcomes Quality Initiative is developing standards of care for chronic kidney disease.

▶ Provide training in kidney disease screening, treatment and follow-up to all members of the team.

▶ Promote case management and treatment of other conditions that affect kidney health such as high blood pressure and high blood sugar.

Testing for Kidney Disease 1994-1999



IHS National Diabetes Program Statistics 1992 - 1999

One Tribe's Story:

New Type of Kidney Clinic Offers a Human Touch

At the Eastern Band of Cherokee Indians, new ways of offering kidney clinics are big hits. Once a month, a group of people with diabetes goes to the kidney clinic. They spend the day together – as a group, as friends.

This new way of providing kidney clinics is popular because it meets many needs – especially the need for a human touch. "I look forward to the clinic. We talk," says Phyllis Martinez (Eastern Band of Cherokee Indians). "We cry if we have to," adds Edith Crow (Eastern Band of Cherokee Indians). Talk, laugh, cry. These are the ingredients that are making new clinics successful.

The Cherokee Kidney Clinic is a group clinic. Once a month people spend the day together at the Cherokee Hospital. They meet in a large room, enjoying coffee and snacks. They chat with health care staff, and take turns seeing a doctor. Throughout the day, they learn more about how to take care of their kidneys – how to eat low-protein food, and limit how much water they drink.

They also learn about dialysis options. Over the course of several visits, the mystery of dialysis diminishes. They begin to understand that they have choices. If the time comes for them to go on dialysis, they know exactly what to expect. It isn't as mysterious. It isn't as scary.

"Before the group clinic, there was only a video to explain what dialysis was," says Edith. "This group clinic has helped us feel better about what we can expect. It has helped us feel better about our emotions. This group has helped us know that our feelings are shared by others."

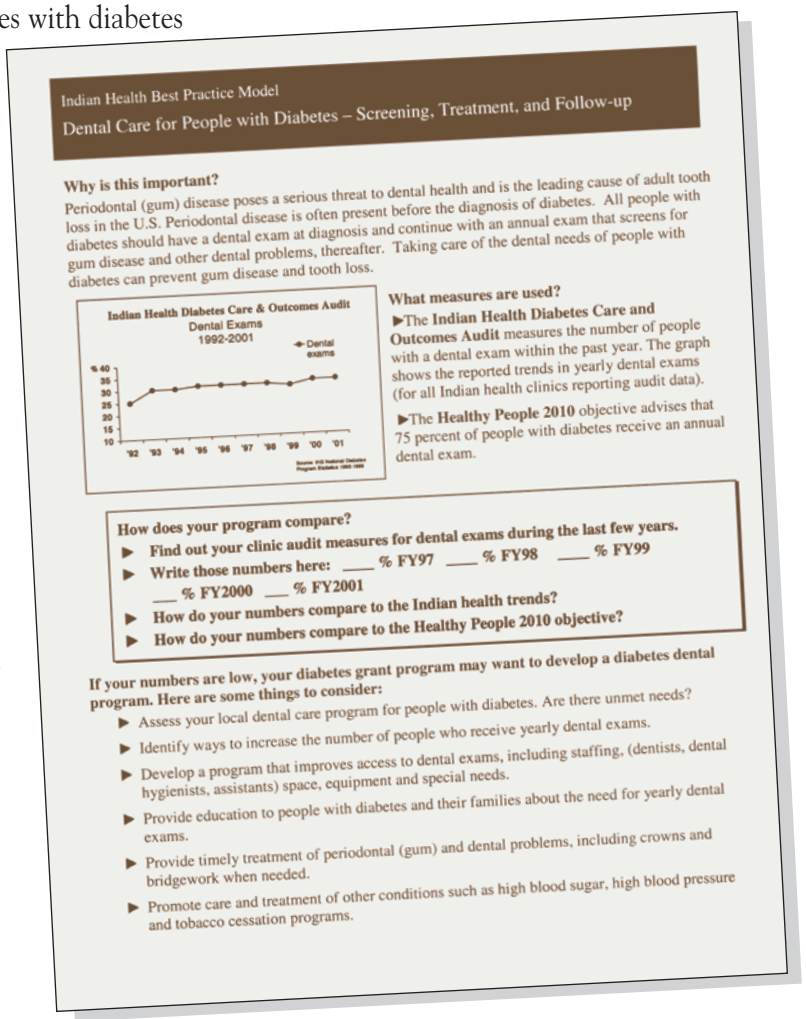
Many say that before the group clinic, they felt scared and alone. One of the best things about the clinic is that people get to know each other. They tell stories of their children and grandchildren. They talk about how they met their spouse. One man, Alfred West, Jr. (Eastern Band of Cherokee Indians), makes sure he wears his rooster watch to every clinic, to liven things up. It crows every hour.

Group members have become friends. They call each other, and check up on each other. They talk about diabetes, taking medication, giving insulin shots, and maybe going on dialysis. "I used to be scared. But, after talking about all this, I calmed down," says Betsy George (Eastern Band of Cherokee Indians).

Members of the kidney clinic at the Cherokee Hospital spend the day together, learning about kidney care. "Before the group clinic, there was only a video to explain what dialysis was," says Edith Crow (Cherokee), bottom left. "This group clinic has helped us feel better about what we can expect. It has helped us feel better about our emotions."

Best Practice Model for American Indian/Alaska Native Communities: Dental Care for People with Diabetes – Screening, Treatment, and Follow-up

Advanced periodontal or gum disease occurs at rates two to three times higher among American Indians/Alaska Natives with diabetes than for those who do not have diabetes. Infections that are often associated with advanced periodontal disease can interfere with an individual's blood sugar control. In addition, periodontal disease results in the loss of all teeth in approximately one third of American Indians/Alaska Natives with diabetes. Taking care of the dental needs of people with diabetes can prevent gum disease and tooth loss as well as result in the improvement of blood sugar control.



Indian Health Best Practice Model

Dental Care for People with Diabetes – Screening, Treatment, and Follow-up

Why is this important?

Periodontal (gum) disease poses a serious threat to dental health and is the leading cause of adult tooth loss in the U.S. Periodontal disease is often present before the diagnosis of diabetes. All people with diabetes should have a dental exam at diagnosis and continue with an annual exam that screens for gum disease and other dental problems, thereafter. Taking care of the dental needs of people with diabetes can prevent gum disease and tooth loss.

Indian Health Diabetes Care & Outcomes Audit
Dental Exams
1992-2001

Dental exams

% 40
35
30
25
20
15
10

'92 '93 '94 '95 '96 '97 '98 '99 '00 '01

What measures are used?

▶The **Indian Health Diabetes Care and Outcomes Audit** measures the number of people with a dental exam within the past year. The graph shows the reported trends in yearly dental exams (for all Indian health clinics reporting audit data).

▶The **Healthy People 2010** objective advises that 75 percent of people with diabetes receive an annual dental exam.

How does your program compare?

- **Find out your clinic audit measures for dental exams during the last few years.**
- **Write those numbers here: ___ % FY97 ___ % FY98 ___ % FY99 ___ % FY2000 ___ % FY2001**
- **How do your numbers compare to the Indian health trends?**
- **How do your numbers compare to the Healthy People 2010 objective?**

If your numbers are low, your diabetes grant program may want to develop a diabetes dental program. Here are some things to consider:

- Assess your local dental care program for people with diabetes. Are there unmet needs?
- Identify ways to increase the number of people who receive yearly dental exams.
- Develop a program that improves access to dental exams, including staffing, (dentists, dental hygienists, assistants) space, equipment and special needs.
- Provide education to people with diabetes and their families about the need for yearly dental exams.
- Provide timely treatment of periodontal (gum) and dental problems, including crowns and bridgework when needed.
- Promote care and treatment of other conditions such as high blood sugar, high blood pressure and tobacco cessation programs.

A review of Special Diabetes Program for Indians grant applications indicated that **twenty five percent (25%) of grant programs used some or all of the best practice guidance for Dental Care for People with Diabetes – Screening, Treatment, and Follow-up** to design and implement dental care activities in their communities.

Program Conducts Creative Outreach on Ferries, and Offers Friendly Dental Clinic

On an Alaska ferry headed for the town of Sitka, Alaska Native teens are learning how to take care of their teeth. "I can't believe that one can of pop a day adds up to 35 pounds of sugar a year!" says one girl. The dental care table on the ferry is part of a diabetes education outreach effort of the Southeast Alaska Regional Health Consortium (SEARHC). The program aims to teach diabetes prevention and management to a service population of over 12,000. Teaching good dental care to Alaska Natives of all ages, especially those with diabetes and at risk for diabetes, is a major part of the program.

In the long, coastal strip of Southeast Alaska, people travel by ferry as readily as mainlanders travel by bus. SEARHC regularly sets up diabetes prevention and management tables on the ferries to take advantage of a built-in, captive audience. Health staff say the long ferry rides (sometimes they are 2-3 days) can be boring, and passengers enjoy going from table to table, chatting and learning how to prevent and manage diabetes. The staff at the dental care table tells people how eating low-sugar foods and daily brushing and flossing keeps teeth strong. They tell people with diabetes that they especially need regular dental care.

All passengers are invited to the SEARHC dental clinic in Sitka. The dental clinic is located in the Mt. Edgecumbe Hospital, and follows the basic philosophy of the hospital: The patient is a partner. Staff recognize that the common fear of a dental visit is sometimes compounded by not-so-good childhood memories, when visits to a dentist were less than pleasant.

But, times have changed. The bright, cheerful SEARHC dental office is a

Passengers on a two-day ferry trip to Sitka, Alaska, learn how pop damages teeth at a booth set up by the dental program of Southeast Alaska Regional Health Consortium (SEARHC). The consortium takes advantage of the ferry's captive audiences to provide diabetes prevention and management education.

welcoming place. One patient takes her children and grandchildren for dental exams and says, “It's a positive experience for them. The staff is always smiling and laughing.”

People with diabetes are a major focus of the dental clinic. The diabetes educator refers them to the dental clinic to receive regular exams and extensive dental care education. Dental staff are part of a 27-member diabetes health team that tracks patients with diabetes, provides them with life-style change recommendations, and monitors the health of their teeth, eyes, kidneys, heart and feet.

The dental staff participate in all outreach events. In addition to the floating dental information booths on the ferries, dental staff also travel by car or plane to remote villages to conduct dental exams.

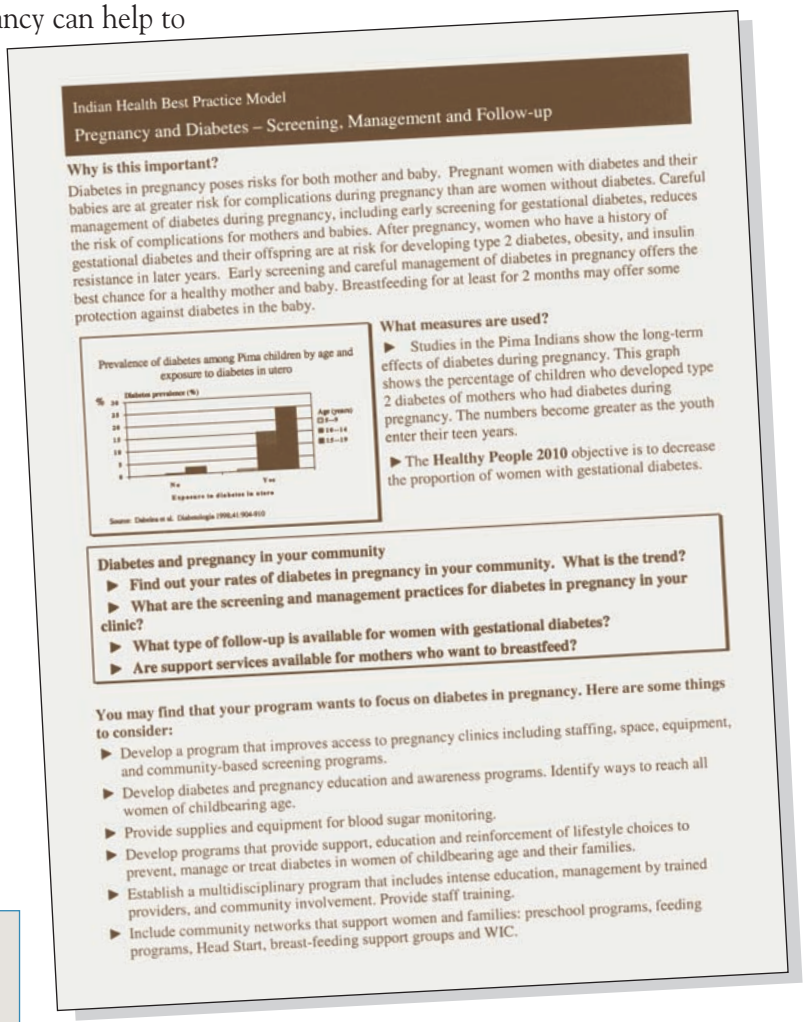
Staff recognize that the common fear of a dental visit is sometimes compounded by not-so-good childhood memories, when visits to a dentist were less than pleasant.

Ken Chester (Navajo) has diabetes and healthy teeth. He goes to the SEARHC dental clinic for regular dental exams.

Best Practice Model for American Indian/Alaska Native Communities: Pregnancy and Diabetes – Screening, Management, and Follow-up

Diabetes in pregnancy poses risks for both the mother and baby. Screening and early treatment for gestational diabetes during pregnancy can help to reduce those risks.

A review of Special Diabetes Program for Indians grant applications indicated that **fifteen percent (15%) of grant programs used some or all of the best practice guidance for Pregnancy and Diabetes – Screening, Management, and Follow-up** to design and implement screening and follow-up activities in their communities.



Indian Health Best Practice Model

Pregnancy and Diabetes – Screening, Management and Follow-up

Why is this important?

Diabetes in pregnancy poses risks for both mother and baby. Pregnant women with diabetes and their babies are at greater risk for complications during pregnancy than are women without diabetes. Careful management of diabetes during pregnancy, including early screening for gestational diabetes, reduces the risk of complications for mothers and babies. After pregnancy, women who have a history of gestational diabetes and their offspring are at risk for developing type 2 diabetes, obesity, and insulin resistance in later years. Early screening and careful management of diabetes in pregnancy offers the best chance for a healthy mother and baby. Breastfeeding for at least for 2 months may offer some protection against diabetes in the baby.

Prevalence of diabetes among Pima children by age and exposure to diabetes in utero

What measures are used?

- Studies in the Pima Indians show the long-term effects of diabetes during pregnancy. This graph shows the percentage of children who developed type 2 diabetes of mothers who had diabetes during pregnancy. The numbers become greater as the youth enter their teen years.
- The **Healthy People 2010** objective is to decrease the proportion of women with gestational diabetes.

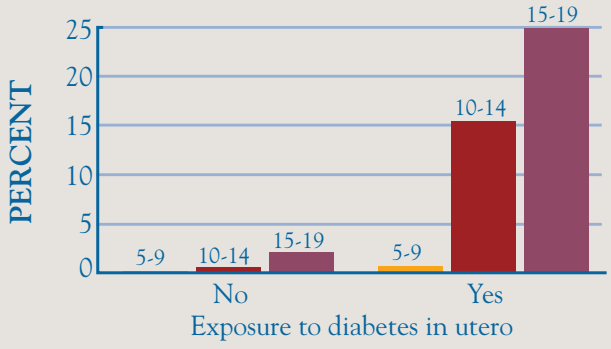
Diabetes and pregnancy in your community

- **Find out your rates of diabetes in pregnancy in your community. What is the trend?**
- **What are the screening and management practices for diabetes in pregnancy in your clinic?**
- **What type of follow-up is available for women with gestational diabetes?**
- **Are support services available for mothers who want to breastfeed?**

You may find that your program wants to focus on diabetes in pregnancy. Here are some things to consider:

- Develop a program that improves access to pregnancy clinics including staffing, space, equipment, and community-based screening programs.
- Develop diabetes and pregnancy education and awareness programs. Identify ways to reach all women of childbearing age.
- Provide supplies and equipment for blood sugar monitoring.
- Develop programs that provide support, education and reinforcement of lifestyle choices to prevent, manage or treat diabetes in women of childbearing age and their families.
- Establish a multidisciplinary program that includes intense education, management by trained providers, and community involvement. Provide staff training.
- Include community networks that support women and families: preschool programs, feeding programs, Head Start, breast-feeding support groups and WIC.

Prevelence of diabetes among Pima children by age and exposure in utero



Source: Diabetes et al. Diabetologia 1998;41:904-910

Phoenix Indian Medical Center Helps Ensure Healthy Pregnancies

The first thing Diana Moreno did when she and her husband decided to have a child was talk with her doctor at the Phoenix Indian Medical Center (PIMC). Diana has had diabetes for three years and knew that having a baby when you have diabetes can be dangerous for both mother and baby.

Through education at the PIMC, Diana knew her blood sugar needed to be in good control before she became pregnant. She was put on insulin when she decided to get pregnant.

Diana had misconceptions about insulin. Like many people, she thought the needle would be big, like a needle to draw blood. "I found out that the needles are very thin. The shots didn't hurt," she says.

She also started working on getting her blood sugar in control. At first, her A1C was 12.4%. The goal was to get it below 7. "I had a lot of work to do," recalls Diana. "At first I didn't think I could do these things. But I wanted to have a healthy baby, so I knew it was worth it."

Diana met regularly with a Diabetes Educator, and started changing her habits. "I began eating more fruits and vegetables. I quit drinking sugar drinks. I started drinking more water. I started exercising," she says. Her A1C number started dropping. It went down to 9, then to 7.

Now Diana's A1C is between 5 and 6. She has developed new habits. She walks at least three times a week for one hour at a park or on a treadmill. She skips high-fat foods like ice cream, chips, and hamburgers.

Diana now has her blood sugar under control. "I feel proud. My blood sugar is in control," she says. Because of the positive results of her hard work her doctor has given her the green light to get pregnant. She has a goal of having a healthy baby.

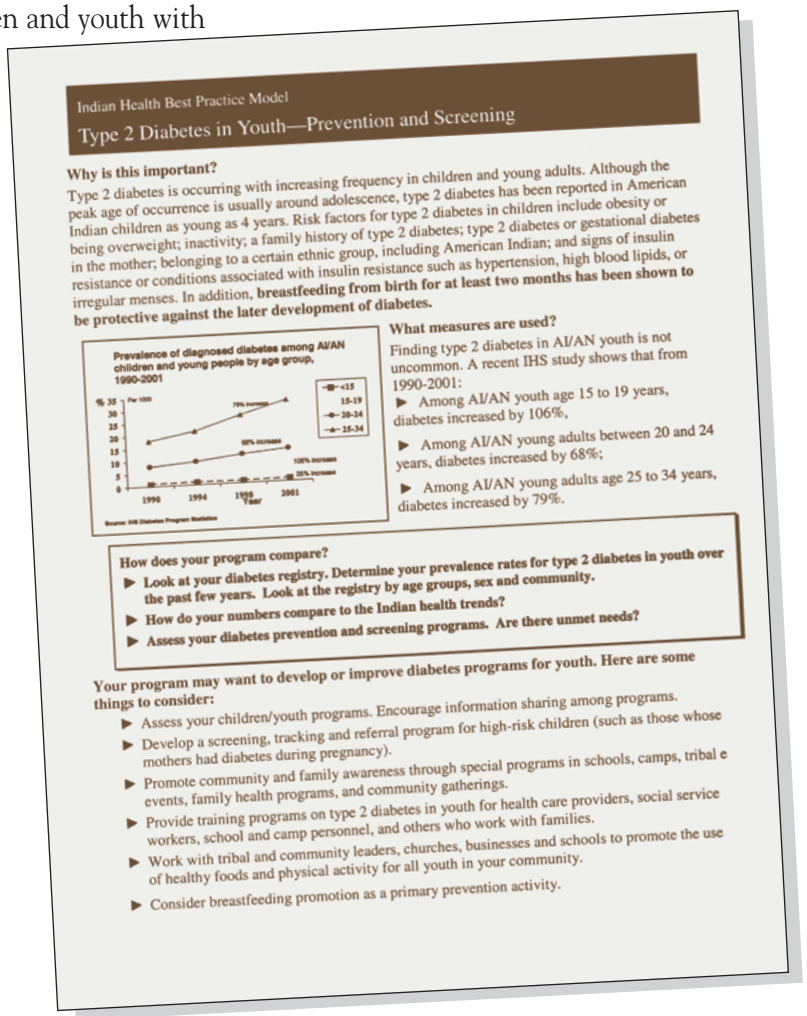
The education Diana is receiving at the PIMC will continue after she gives birth. It is part of an overall program that aims at preventing diabetes complications, ensuring healthy pregnancies, and promoting breast-feeding and healthy children.

Diana Moreno (Yaqui) has diabetes and is working to have a healthy pregnancy. Through education at the Phoenix Indian Medical Center, Diana changed her eating habits, walked daily, and brought her A1C level down to 6.

Best Practice Model for American Indian/Alaska Native Communities: Type 2 Diabetes in Youth – Prevention and Screening

Type 2 diabetes is increasing among children and youth at an alarming rate. Early identification of and intervention in children and youth with risk factors can help to reverse this trend.

A review of Special Diabetes Program for Indians grant applications indicated that **thirty three percent (33%) of grant programs used some or all of the best practice guidance for Type 2 Diabetes in Youth – Prevention and Screening** to design and implement screening and prevention activities for children and youth at-risk for type 2 diabetes.



Indian Health Best Practice Model

Type 2 Diabetes in Youth—Prevention and Screening

Why is this important?

Type 2 diabetes is occurring with increasing frequency in children and young adults. Although the peak age of occurrence is usually around adolescence, type 2 diabetes has been reported in American Indian children as young as 4 years. Risk factors for type 2 diabetes in children include obesity or being overweight; inactivity; a family history of type 2 diabetes; type 2 diabetes or gestational diabetes in the mother; belonging to a certain ethnic group, including American Indian; and signs of insulin resistance or conditions associated with insulin resistance such as hypertension, high blood lipids, or irregular menses. In addition, **breastfeeding from birth for at least two months has been shown to be protective against the later development of diabetes.**

Prevalence of diagnosed diabetes among AI/AN children and young people by age group, 1990-2001

What measures are used?

Finding type 2 diabetes in AI/AN youth is not uncommon. A recent IHS study shows that from 1990-2001:

- Among AI/AN youth age 15 to 19 years, diabetes increased by 106%,
- Among AI/AN young adults between 20 and 24 years, diabetes increased by 68%;
- Among AI/AN young adults age 25 to 34 years, diabetes increased by 79%.

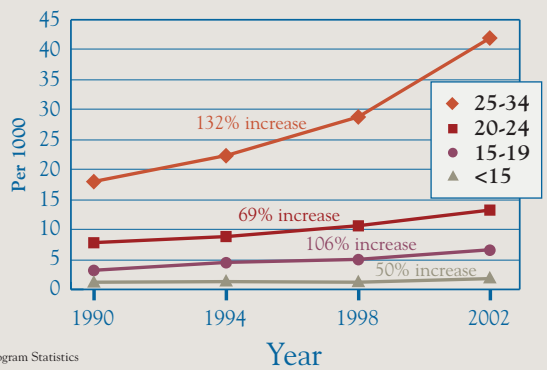
How does your program compare?

- **Look at your diabetes registry. Determine your prevalence rates for type 2 diabetes in youth over the past few years. Look at the registry by age groups, sex and community.**
- **How do your numbers compare to the Indian health trends?**
- **Assess your diabetes prevention and screening programs. Are there unmet needs?**

Your program may want to develop or improve diabetes programs for youth. Here are some things to consider:

- Assess your children/youth programs. Encourage information sharing among programs.
- Develop a screening, tracking and referral program for high-risk children (such as those whose mothers had diabetes during pregnancy).
- Promote community and family awareness through special programs in schools, camps, tribal e events, family health programs, and community gatherings.
- Provide training programs on type 2 diabetes in youth for health care providers, social service workers, school and camp personnel, and others who work with families.
- Work with tribal and community leaders, churches, businesses and schools to promote the use of healthy foods and physical activity for all youth in your community.
- Consider breastfeeding promotion as a primary prevention activity.

Prevalence of Diagnosed Diabetes among Children & Young People by Age Group, 1990-2002



Source IHS National Diabetes Program Statistics

Red Lake Ojibwe Students Learn How to Prevent Diabetes

Diabetes staff Eileen Summer was standing in front of the Red Lake Ojibwe tribal grocery store with a bag of non-fat chips in her hand. An elementary student walked over to her and said, "You shouldn't eat that. Potato chips are high in fat!"

The comment made Eileen smile. "Five years ago, that wouldn't have happened," she said. Just a handful of years ago, tribal youngsters did not know what was low-fat – or what was high-fat.

Eileen credits this increase in nutrition knowledge to the tribe's Workout Low Fat (WOLF) Program, a tribal-wide program that teaches first through fourth graders how to prevent diabetes by staying physically active and eating low-fat, low-sugar food.

Students learn about good health twice a week for eight weeks. The curriculum for first and second graders uses traditional turtle and crane characters and games like tee pee races to educate about good health. The main goal is to teach young students that the things they love to do – run, jump, swim, ride bikes and play ball – are great, and something they need to do their entire lives. And, by the end of the first two years, they learn what are "sometimes" foods and what are "everyday" foods. (French fries are sometimes foods; a small baked potato is an everyday food.)

The curriculum for fourth and fifth graders also uses characters modeled after traditional Indian storytelling. The comic-like characters are named Health Seeker and Bright Spark. They are slim, strong, and energetic. By the end of the fifth grade, the students know that being healthy is desirable and reflects traditional Ojibwe values.

The WOLF program has influenced the school food program and families. The school has switched to providing healthier snacks, such as pretzels and yogurt. Parents are asked to sign off on student's healthy homework and, at the same time, learn about nutrition and exercise.

Robyn Isham is a mother of nine. Two of her children graduated from the WOLF program. "Our whole family learned what everyday foods are, versus foods you should eat only occasionally," she said. The information her children brought home helped the family make small but critical changes like drinking water instead of pop, eating fresh fruits and vegetables everyday, and riding bikes together.

The WOLF program has been implemented at three schools across the reservation, and affects over 450 youngsters and their families. These little health advocates are spreading the word about the benefits of good nutrition and daily exercise. They tell people at stores about the benefits of eating low-fat foods, and they inform their parents and siblings.

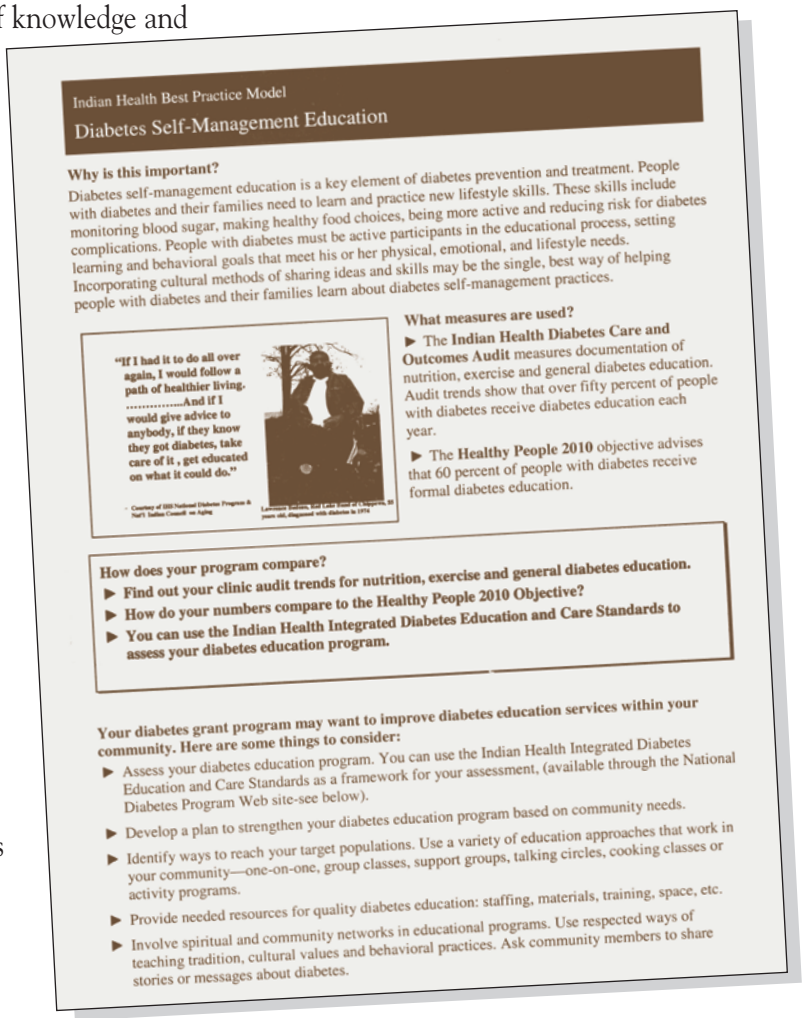
"They have made us more aware that diabetes prevention is a family concern," says parent Robyn Isham.

Robyn Isham (Ojibwe) has two children who learned about diabetes prevention from the tribe's Workout Low Fat Program. The entire family changed eating and exercise habits. Pictures from left to right are: Zachary Stately, Robyn Isham, Antasia Stately, Money Woman Stately, and Rain Stately (Ojibwe students).

Best Practice Model for American Indian/Alaska Native Communities: Diabetes Self-Management Education

Diabetes self-management education is a process that includes a multidisciplinary team in teaching and, through the transfer of knowledge and skills, empowers patients and families to manage their diabetes. Allowing patients and families to participate in clinical and educational decision-making has been shown to have a positive effect on blood sugar control and behavioral outcomes.

A review of Special Diabetes Program for Indians grant applications indicated that **thirty nine percent (39%) of grant programs used some or all of the best practice guidance for Diabetes Self-Management Education** to design and implement diabetes education programs in their communities.



Indian Health Best Practice Model

Diabetes Self-Management Education

Why is this important?

Diabetes self-management education is a key element of diabetes prevention and treatment. People with diabetes and their families need to learn and practice new lifestyle skills. These skills include monitoring blood sugar, making healthy food choices, being more active and reducing risk for diabetes complications. People with diabetes must be active participants in the educational process, setting learning and behavioral goals that meet his or her physical, emotional, and lifestyle needs. Incorporating cultural methods of sharing ideas and skills may be the single, best way of helping people with diabetes and their families learn about diabetes self-management practices.

"If I had it to do all over again, I would follow a path of healthier living. .....And if I would give advice to anybody, if they know they got diabetes, take care of it , get educated on what it could do."

Courtesy of IHS National Diabetes Program & Nat'l Indian Council on Aging

Lawrence Bedeau (Red Lake Band of Chippewa), 55 years old, diagnosed with diabetes in 1974

What measures are used?

- The **Indian Health Diabetes Care and Outcomes Audit** measures documentation of nutrition, exercise and general diabetes education. Audit trends show that over fifty percent of people with diabetes receive diabetes education each year.
- The **Healthy People 2010** objective advises that 60 percent of people with diabetes receive formal diabetes education.

How does your program compare?

- **Find out your clinic audit trends for nutrition, exercise and general diabetes education.**
- **How do your numbers compare to the Healthy People 2010 Objective?**
- **You can use the Indian Health Integrated Diabetes Education and Care Standards to assess your diabetes education program.**

Your diabetes grant program may want to improve diabetes education services within your community. Here are some things to consider:

- Assess your diabetes education program. You can use the Indian Health Integrated Diabetes Education and Care Standards as a framework for your assessment, (available through the National Diabetes Program Web site-see below).
- Develop a plan to strengthen your diabetes education program based on community needs.
- Identify ways to reach your target populations. Use a variety of education approaches that work in your community—one-on-one, group classes, support groups, talking circles, cooking classes or activity programs.
- Provide needed resources for quality diabetes education: staffing, materials, training, space, etc.
- Involve spiritual and community networks in educational programs. Use respected ways of teaching tradition, cultural values and behavioral practices. Ask community members to share stories or messages about diabetes.

"If I had to do it all over again, I would follow a path of healthier living . . . And if I would give advice to anybody, if they know they got diabetes, take care of it, get educated on what it could do."

Lawrence Bedeau (Red Lake Band of Chippewa)
55 years old, diagnosed with diabetes in 1974

Diabetes Self-Management Means Gaining Sense of Control

Keith Haines (Mescalero Apache) and Gayle Eaglewoman (Crow Creek Sioux) have diabetes and learned about diabetes self-management at the Salt Lake City Indian Walk-In Center.

Before receiving diabetes self-management education at the center, both had incomplete information. Keith thought the best way to take care of himself was to take his diabetes pills; he did not consider lifestyle changes. "I figured I could keep on going the way I was. I just took my pills, and ate a lot of pasta, bread, and potatoes. I drank a lot of beer," says Keith. Now Keith limits his carbohydrates, eats lean meats and fish, goes on regular walks, and plays tennis.

Gayle was eating one to two candy bars a day, plus drinking two large sodas. After getting information from the center, she quickly changed her eating habits and dropped the candy and sodas. In three months, Gayle lost 20 pounds and was feeling good.

Besides knowing what to eat, center clients have a good understanding of the need for routine diabetes check-ups and tests. When they visit a clinic, they are not overwhelmed by diabetes language and are not afraid to ask questions. "When the doctor says something about diabetes, I understand," says Gayle. "I am able to understand almost everything my doctor tells me about diabetes," agrees Keith. "I feel a lot better during clinic visits."

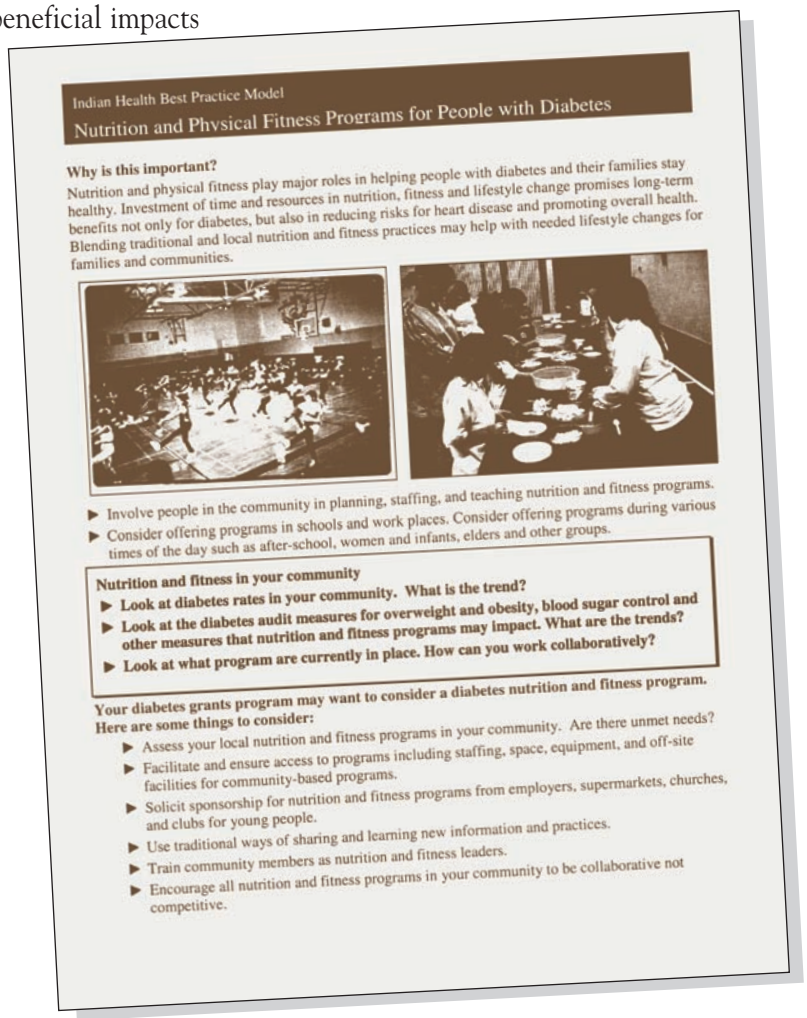
Since self-managing their diabetes, both have seen great improvements in their blood sugar levels. Gayle had blood sugar readings above 250 and her A1C was 9. Now her blood sugar readings are between 90 and 140. She will receive her second A1C test soon. My goal is to get it between 6 and 7," she says. Keith, who has been practicing self-management longer than Gayle, lowered his A1C number from 15 to 7.

Gayle Eaglewoman (Crow Creek Sioux) shops at the "Pantry" of the Salt Lake City Indian Walk-In Center. She knows what kinds of foods to choose to maintain good blood sugar levels. "I know what I'm doing, why I'm doing it, and what the benefits are," says Gale.

Best Practice Model for American Indian/Alaska Native Communities: Nutrition and Physical Fitness Programs for People with Diabetes

Nutrition education and physical activity are cornerstones of effective diabetes management. In addition, they have beneficial impacts upon risk reduction for heart disease and the promotion of overall health.

A review of Special Diabetes Program for Indians grant applications indicated that **seventy five percent (75%) of grant programs used some or all of the best practice guidance for Nutrition and Physical Fitness Programs for People with Diabetes** to design and implement nutrition and fitness programs in their communities.



Indian Health Best Practice Model

Nutrition and Physical Fitness Programs for People with Diabetes

Why is this important?

Nutrition and physical fitness play major roles in helping people with diabetes and their families stay healthy. Investment of time and resources in nutrition, fitness and lifestyle change promises long-term benefits not only for diabetes, but also in reducing risks for heart disease and promoting overall health. Blending traditional and local nutrition and fitness practices may help with needed lifestyle changes for families and communities.

- Involve people in the community in planning, staffing, and teaching nutrition and fitness programs.
- Consider offering programs in schools and work places. Consider offering programs during various times of the day such as after-school, women and infants, elders and other groups.

Nutrition and fitness in your community

- **Look at diabetes rates in your community. What is the trend?**
- **Look at the diabetes audit measures for overweight and obesity, blood sugar control and other measures that nutrition and fitness programs may impact. What are the trends?**
- **Look at what program are currently in place. How can you work collaboratively?**

Your diabetes grants program may want to consider a diabetes nutrition and fitness program. Here are some things to consider:

- Assess your local nutrition and fitness programs in your community. Are there unmet needs?
- Facilitate and ensure access to programs including staffing, space, equipment, and off-site facilities for community-based programs.
- Solicit sponsorship for nutrition and fitness programs from employers, supermarkets, churches, and clubs for young people.
- Use traditional ways of sharing and learning new information and practices.
- Train community members as nutrition and fitness leaders.
- Encourage all nutrition and fitness programs in your community to be collaborative not competitive.

After-school programs implement nutrition education for children and their families

Emotional Health Paves Way for Physical Health at Rapid City Program

At the Rapid City Indian Health Service Diabetes Program, a diabetes patient's first education meeting is long, is one-on-one, and it lasts as long as needed. For American Indians with diabetes who live in and around Rapid City, North Dakota, the style of the meeting is effective. It is not rushed. Information about the emotional side of diabetes, as well as diet and exercise, has time to sink in.

"I spend time with people," says Maria Ramos (Sioux), Physicians Assistant at the program. "During their first meeting, I try to make it as easy to understand as possible. I try to let people know they can live well with diabetes. We throw so much at people and expect them to understand...".

During the first meeting Maria, who has diabetes, empathizes with the patients. She doesn't spend a lot of time talking about specific eating strategies or how many minutes to exercise. If the conversation goes to diet and exercise, Maria simply says that it is better to eat less food and be a little more active.

Patients usually meet with Maria once a week. They discuss whatever the patient needs to talk about. Many times they talk about emotions. "It may take three or four visits for them to admit they are scared," she says. During these early visits, Maria asks less about diet and exercise, instead asking the question, "How are you coping?"

Patients have their own timeline. Some need much time to deal with their feelings of fear and guilt. Others move past these feelings, and are ready to learn about diet and exercise.

When the patient is ready, Maria gives them information to help them eat better and exercise more. She sets up appointments with a nutritionist, and refers them to the Okiciyapi (Helps Another) Wellness Center, located a short walk away. The Center has two floors of exercise equipment, and is staffed with fitness trainers and counselors. Special Diabetes Program for Indians grant funds have helped the program hire two additional staff. The number of people using the Center has doubled.

In addition, special programs have been created to prevent and manage diabetes:

- Weight Assessment and Intervention Team (WAIT), provides screening and exercise plans for patients with diabetes
- Regular wellness walks in the community
- Nutrition education programs that are sensitive to people on budgets

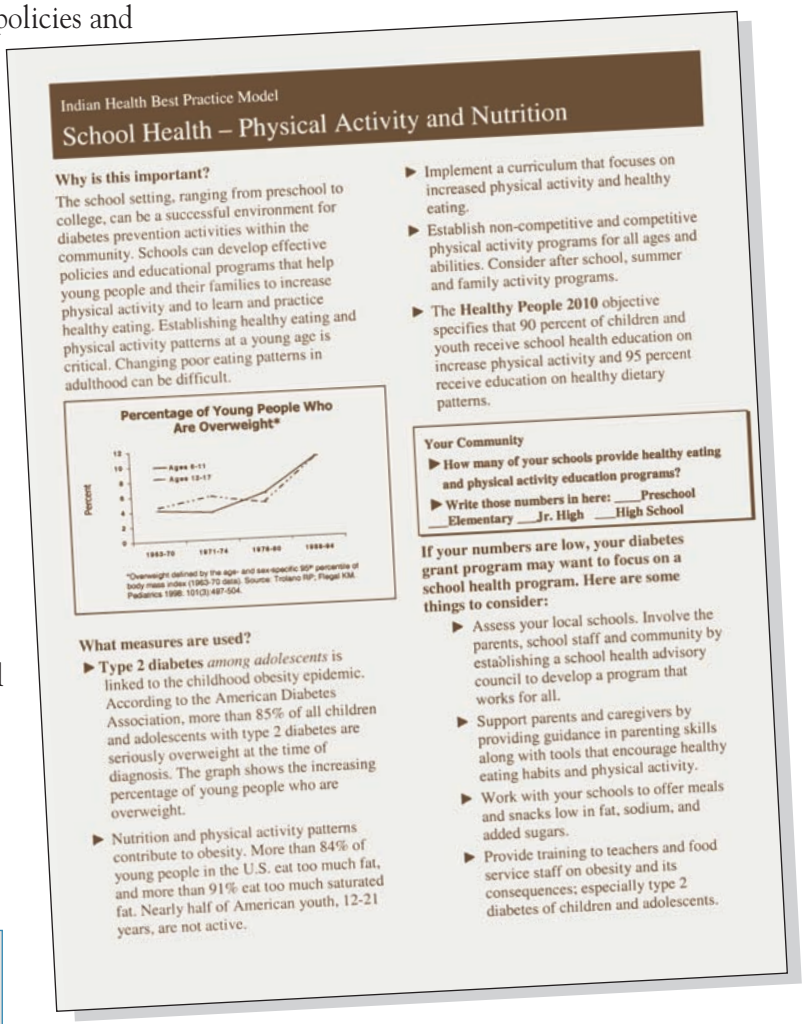
Because of increased education, improved facilities and additional staff, more people with diabetes are keeping their blood sugars in normal ranges. At the Rapid City Diabetes Program, this is possible partly because of the early attention to emotions. Emotional care is the foundation of good physical care.

Megan Webster (Omaha Tribe of Nebraska), Fitness Coordinator, guides Geraldine Goes In Center (Oglala Lakota) on the treadmill. Geraldine does not have diabetes, but has diabetes in her family. She exercises in the Okiciyapi Wellness Center every day. She has lost 15 pounds in 7 months.

Best Practice Model for American Indian/Alaska Native Communities: School Health – Physical Activity and Nutrition

Schools help young people and their families develop healthy eating and physically active lifestyles by implementing effective policies and educational programs focusing on nutrition and physical activity.

A review of Special Diabetes Program for Indians grant applications indicated that **thirty nine percent (39%) of the grant programs used some or all of the best practice guidance School Health – Nutrition and Physical Activity** to partner with their local schools to implement and increase nutrition and physical activity programs for children and youth in their communities.



Indian Health Best Practice Model

School Health – Physical Activity and Nutrition

Why is this important?

The school setting, ranging from preschool to college, can be a successful environment for diabetes prevention activities within the community. Schools can develop effective policies and educational programs that help young people and their families to increase physical activity and to learn and practice healthy eating. Establishing healthy eating and physical activity patterns at a young age is critical. Changing poor eating patterns in adulthood can be difficult.

Percentage of Young People Who Are Overweight*

*Overweight defined by the age- and sex-specific 95th percentile of body mass index (1963-70 data). Source: Trolano RP; Flegal KM. Pediatrics 1998; 101(3):497-504.

What measures are used?

- **Type 2 diabetes** *among adolescents* is linked to the childhood obesity epidemic. According to the American Diabetes Association, more than 85% of all children and adolescents with type 2 diabetes are seriously overweight at the time of diagnosis. The graph shows the increasing percentage of young people who are overweight.
- Nutrition and physical activity patterns contribute to obesity. More than 84% of young people in the U.S. eat too much fat, and more than 91% eat too much saturated fat. Nearly half of American youth, 12-21 years, are not active.
- Implement a curriculum that focuses on increased physical activity and healthy eating.
- Establish non-competitive and competitive physical activity programs for all ages and abilities. Consider after school, summer and family activity programs.
- The **Healthy People 2010** objective specifies that 90 percent of children and youth receive school health education on increase physical activity and 95 percent receive education on healthy dietary patterns.

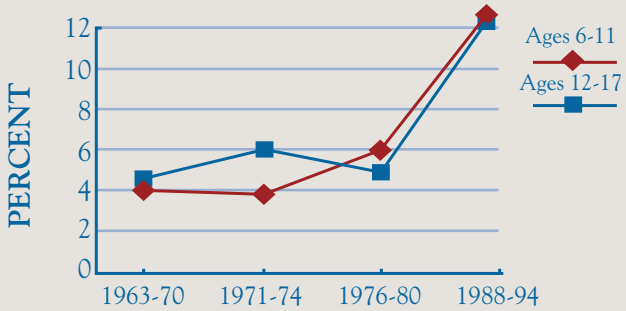
Your Community

- **How many of your schools provide healthy eating and physical activity education programs?**
- **Write those numbers in here: ___Preschool ___Elementary ___Jr. High ___High School**

If your numbers are low, your diabetes grant program may want to focus on a school health program. Here are some things to consider:

- Assess your local schools. Involve the parents, school staff and community by establishing a school health advisory council to develop a program that works for all.
- Support parents and caregivers by providing guidance in parenting skills along with tools that encourage healthy eating habits and physical activity.
- Work with your schools to offer meals and snacks low in fat, sodium, and added sugars.
- Provide training to teachers and food service staff on obesity and its consequences; especially type 2 diabetes of children and adolescents.

Percentage of Young People Who Are Overweight



Overweight defined by age- and sex-specific 95th percentile of body mass index (1963-70)
Source: Trolano RP; Flegal KM. Pediatrics 1998:101(3):497-504.

Students Learn Traditional Ways to Avoid Diabetes

Students at Black Bear Elementary School in Cloquet, Minnesota are learning about how to prevent diabetes through a nutrition and exercise program that emphasizes a return to more traditional ways. The students participate in the Work Out Low Fat (WOLF) Program, and attend a drumming and powwow dance class. "It's important to look at the whole child and total wellness," says principal Sara Montgomery.

The children learn the importance of eating vitamin-packed, low-fat, low-sugar foods, and being active every day. What they learn has also changed the eating and activity habits of teachers. Sara says teachers now eat better. Some have started bringing special, healthy sack lunches to work. Many have worked to improve the lunches and snacks served at school. A diabetes prevention team from the school asked the school board not to sell unhealthy food at school fund-raisers. Now, pop is not sold.

Teacher Meredith Martin says the WOLF Program is successful at Black Bear because it is culturally relevant. Children learn about traditional Native health of body, mind, and spirit. They learn powwow dancing and drumming, and are encouraged to return to more traditional diets. "This is one of the first programs I've seen that is specific to Native Americans," she said.

Timmie Tiessen (Fond du Lac), left, and Christopher Rave (Winnebago) learn powwow drumming and dancing at a Fond du Lac Ojibwe elementary school. The school offers a diabetes prevention program that encouraged a return to traditional ways of eating and physical activity.

Summary

Based on Congressional direction, the IHS National Diabetes Program developed a consensus-based, Indian health best practices approach. The IHS National Diabetes Program established a Best Practices Workgroup that developed 14 Best Practice Models for successful diabetes prevention, treatment, and education practices in AI/AN communities. The diabetes grant programs successfully used the Best Practice Models to identify strengths and gaps in diabetes services and resources, establish program priorities, and develop work plans to implement local best practices for diabetes care and diabetes prevention.

"When a certain beautiful elderly Yupik woman sees me, she always looks me in the eyes and says, 'I know that you will take care of me.' She has said the same thing to me for 20 years. She trusts me to take care of her. I have a big responsibility to her, and to everyone else in my region, and in Indian Country. I also have a big responsibility to take care of myself, stay healthy and be a healthy role model."

Sally Smith, Curyung, Alaska