

INDIAN HEALTH DIABETES BEST PRACTICE

Oral Health Care

Revised April 2011

Note! Please review the Best Practice Addendum, which provides the most current information on the Required Key Measures along with examples of ways to obtain the measures. The Best Practice Addendum can be found here: http://www.ihs.gov/MedicalPrograms/Diabetes/HomeDocs/Tools/BestPractices/BP_2011_Table_RKM_508c.pdf

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Instructions for Using This Best Practice

The Best Practices are organized into topics on how to plan for and successfully implement a Best Practice in your community.

- **Part 1** provides background information on planning for your program and evaluation, Key Recommendations, and Key Measures.
- **Part 2** provides details on implementation of the Key Recommendations.
- **Part 3** includes appendices, tools, and resources.
- **Part 4** provides a list of references.

As you prepare to select, implement, and evaluate a Best Practice, consider these planning guidelines:

- Meet with your diabetes team to discuss which Best Practice(s) is best suited for your situation and resources.
- Use data from your *Diabetes Care Outcomes and Audit* and/or from a community needs assessment to guide your selection of the Best Practice(s).
- Determine your program goal(s) as a team. For example, your team may decide to work toward increasing the number of people who receive eye exams.
- Print out at least Part 1 of the Best Practice(s) your team feels is most appropriate to implement.
- Work with your diabetes team to review and discuss the Best Practice(s). You may choose to read it together as a team.
- Choose at least one Best Practice after carefully considering your goals and resources (funding, staff, and time).
- **Review the entire Best Practice(s) you have selected with your diabetes team:**
 - Confirm that you have selected a Best Practice(s) appropriate for your community needs and resources and that you are confident that your team can successfully implement, evaluate (measure), and document progress and outcomes.
 - Target the population your team wants to improve outcomes for with the Best Practice(s). Remember, you probably do not have resources to do everything for everyone.
 - Carefully consider the Key Recommendations. The recommendations are based on evidence and have been proven to be effective. You may already be doing some of the recommendations and can easily fit these into your plan, or you may want to consider some new recommendations to enhance and strengthen your program. Identify those your team can implement.
 - Carefully review the Key Measures. Choose those that best fit with your goals and the Key Recommendations you have chosen to implement.
 - If one Best Practice does not fit, then review another Best Practice until you find one that fits.

Throughout the document you will find links that draw your attention to important items within the Best Practice pdf. Here is a list of the items:

- **Action!** Indicates a **link**. Please use the link to access more detailed descriptions.
- **Note!** Indicates an **important** item. Pay special attention to this **important** item.

Summary of Key Recommendations and Key Measures

These are evidence-based actions that will lead to improved outcomes in the community. **Action!** See [Part 2](#) for details on the implementation of each key recommendation.

1. Primary care and dental care team members provide patient education to prevent and reduce adverse oral health outcomes.
2. Primary care team members evaluate for the presence of periodontal disease and refer for dental examination/treatment as needed.
3. Dentist conducts a risk assessment and comprehensive annual dental examination including prevention, early detection, and treatment of periodontal disease and caries in all patients with diabetes.
4. Establish priorities for dental treatment and oral health education for people with diabetes.
5. Provide dental treatment and periodontal therapy, including:
 - conducting annual dental examinations and cleanings,
 - restoring caries in all people with diabetes, and
 - providing recalls (follow-up visits) to maintain periodontal and dental health.

These are specific measures that can be used to document changes in outcomes related to implementing the Best Practice.

Note! All SDPI grant programs that choose this Best Practice must report **as required in the terms and conditions attached to the notice of award** on the **indicated Measures**. Programs can report on other measures as well.

*The following measures are of primary importance:

1. *Percent of diabetes patients who had documented dental-related patient education during the fiscal year.
2. *Percent of diabetes patients who had a documented dental exam during the fiscal year.
3. Percent of diabetes patients identified as needing dental treatment (cleaning and caries) who received it within the past twelve months.

PART 1 Essential Elements of Implementing This Best Practice

Purpose and Target Population

This Best Practice describes oral health care recommendations for any person with type 1 or type 2 diabetes, regardless of age or duration of diabetes.

Action! See [Part 3](#) – Appendix A. for the importance of oral health.

Intended Users of This Best Practice

- Primary health care providers,
- dental care teams,
- community workers who provide oral health education, and
- leaders of health care organizations.

Action! See [Part 3](#) – Appendix A. Supplemental Information for discussion of the benefits and risks of implementing this Best Practice.

Definition of Oral Health

Oral health care for people with diabetes includes clinical and community-based oral health interventions, consisting of:

- patient and community oral self-care education,
- oral health assessment,
- primary health and dental interventions that address improving oral health,
- preventing the onset of periodontal disease and dental caries, and
- treating existing disease and preventing its progression.

Dental caries, also known as tooth decay or cavities, is a disease where bacterial acids damage the tooth structure. Periodontal (or gum) disease is an infection of the tissues that support the teeth. It is a common complication of diabetes that can result in the loss of teeth and poor diet. Both caries and periodontal disease remain two of the most common diseases throughout the world, and both can be prevented.

Goals of This Best Practice

This document provides guidance for programs that seek to improve individuals' oral health and enhance delivery of effective oral health care.

- To increase the percent of people with diabetes who:
 - o receive an annual dental examination
 - o receive appropriate treatment for oral health issues
 - o receive education on effective oral health self-care,
- To include a dental provider on the diabetes team,
- To establish a referral system between primary care and dental teams, and
- To increase resources (such as funding, staff, and equipment) to provide effective and accessible dental services.

Key Recommendations

These are evidence-based actions that can lead to improved outcomes for persons with type 1 or type 2 diabetes.

These are evidence-based actions that will lead to improved outcomes in the community.

1. Primary care and dental care team members provide patient education to prevent and reduce adverse oral health outcomes.
2. Primary care team members evaluate for the presence of periodontal disease and refer for dental examination/treatment as needed.
3. Dentist conducts a risk assessment and comprehensive annual dental examination including prevention, early detection, and treatment of periodontal disease and caries in all patients with diabetes.
4. Establish priorities for dental treatment and oral health education for people with diabetes.
5. Provide dental treatment and periodontal therapy, including:
 - conducting annual dental examinations and cleanings,
 - restoring caries in all people with diabetes, and
 - providing recalls (follow-up visits) to maintain periodontal and dental health.

Action! See [Part 2](#) for details on the implementation of each key recommendation.

Planning for Your Program and Evaluation

Key Action Steps include:

1. **Identify your program's goal(s).** There are many program goals consistent with the Key Recommendations of this practice. Choose program goals that fit with the Key Recommendations and your resources. Examples of program goals include:

- Increase the number of people with diabetes who receive dental-related patient education
- Increase the number of people with diabetes who receive annual dental exams

2. **Define program objectives** that will be met to reach the program goal(s) in the **SMART format** (specific, measurable, action-oriented, realistic, and time-bound).

Examples of SMART objectives for this Best Practice:

- Increase the percent of people with diabetes with documented dental-related education in the past twelve months from 75% to 85% by the end of the fiscal year.
- Increase the number of people with diabetes with documented dental exams in the past twelve months from 60% to 75% by the end of the fiscal year.

3. **Use Key Measures.** The following Key Measures can be used to monitor progress and the effectiveness of implementing this Best Practice. Results of measures will indicate the degree of success in implementing the **Key Recommendations** and meeting program goals.

Measures of progress need to occur before the intervention (baseline) and at designated times thereafter. Measurement needs to be frequent enough to provide meaningful information for planning and evaluation.

Key Measures

Note! All SDPI grant programs that choose this Best Practice must report **as required in the terms and conditions attached to the notice of award on the indicated Measures**. Programs can report on other measures as well.

*The following measures are of primary importance:

1. *Percent of diabetes patients who had documented dental-related patient education during the fiscal year.
2. *Percent of diabetes patients who had a documented dental exam during the fiscal year.
3. Percent of diabetes patients identified as needing dental treatment (cleaning and caries) who received it in the past twelve months.

4. **Collect, record, and analyze data** on an ongoing basis; share with the team and the organization leadership.

Action! See [Part 3 – Appendix E](#). Measures and Data Sources for Monitoring Progress and Outcomes for additional tracking ideas for this best practice.

Note!

- Data on percent of diabetes patients who had **documented dental-related patient education** during the fiscal year can be documented from the list of patients with diabetes with a dental code of D1330 Oral Hygiene Education.
 - Data on percent of diabetes patients who had a **documented dental exam** during the fiscal year can be obtained using dental code D0150 or D0120.
 - Data on percent of diabetes **patients identified as needing dental treatment (cleaning and caries) who received it** can be obtained using a D9990 code. Any code D1000 or higher would signify some dental treatment provided other than just evaluation.
5. **Use creative ways to display data and measure outcomes, such as graphs or charts.** This helps the team understand the data and know whether there are improvements.

6. **Think about what the data are telling you.** What changes are you seeing? Are they improvements? Use data for planning next steps.

Action! See the following resources to help your program improve.

See [Part 3](#) – **Appendix B. Key Measures Example** to assist you with identifying ways to choose Key Measures that incorporate your community data.

See [Part 3](#) – **Appendix C. Improving Oral Health Care Programs Example** to assist you with applying Key Recommendations and Key Measures to a program plan.

Action! See [online training](#) and a **[workbook](#)** to get more ideas about setting goals and objectives and developing a program plan. Available from:
<http://www.ihs.gov/MedicalPrograms/Diabetes/HomeDocs/Training/WebBased/Basics/Creating/Workbook.pdf> (see pages 23-28).

Team Notes:

PART 2 Key Recommendations

Note! Part 2 provides **important** detail on the “why?” and “how?” of implementation of each Key Recommendation.

Key Recommendation 1. Primary care and dental care team members provide patient education to prevent and reduce adverse oral health outcomes.

Provide dental treatment and periodontal therapy including conducting annual dental examinations and cleanings, restoring caries in all people with diabetes, and providing recalls (follow-up visits) to maintain periodontal and dental health.

Why?

Patients with diabetes who receive education and support for oral self-care demonstrate: (CDC, 2004; NDEP, 2009)

- improved glucose control,
- reduced risk of periodontal disease, and
- less severe periodontal disease when it is present.

How to Implement the Key Recommendation

1. **Dental provider participates in the diabetes team** to address oral health and diabetes-related issues.
2. **Primary care team members (physician, nurse practitioner, physician's assistant, and/or nurse) inform patients** about diabetes and oral health management during clinical visits.
3. **Dental team members** (dentist, registered dental hygienist, and/or dental assistant) **offer oral health education** during each dental visit. The content of the education should include:
 - information about good oral self-care and appropriate tools to use (toothbrush, floss, interproximal brush, pick, etc.) and
 - diabetes and oral health facts, and when and how to seek dental care.
4. **Collect or create a set of diabetes oral health patient action sheets** that are readily available for team members to give to patients.
5. **Establish a process for providing and documenting** oral health self-care education. This process should include:
 - Provide instruction to enhance patients' understanding of oral health and daily home care as part of their overall treatment plan and diabetes self management.
 - Ensure that patients understand the correlation between poor oral health and the negative effect it can have on glycemic control and diabetic complications.
 - Involve patients in their health care decisions and planning.
 - Document patient education in the dental clinic with ADA-certified dental procedure codes. (Current Dental Terminology 2009-2010).
 - Document patient education using Indian Health Service (IHS) Patient Education Codes (PEPC).

Action! See IHS PEPC online at: <http://www.ihs.gov>. Click on "Nationwide Programs and Initiatives" and select "Patient Education Protocols and Codes" under "Section Highlights."

Team Notes:

Key Recommendation 2. Primary care team members evaluate for the presence of periodontal disease and refer for dental examination/treatment as needed.

Why?

Regular oral evaluation may help to prevent, detect, and treat periodontal disease and dental caries early (Eke et al., 2005; NDEP 2009).

How to Implement the Key Recommendation

Provide regular oral screenings, advise patients about daily oral care, and refer individuals with oral health problems to the dentist.

Primary Care Team Oral Health Roles
Determine patient's history of dental disease.
Determine date of last dental examination.
Examine teeth and gums for plaque, gingival inflammation, and caries.
Assess oral symptoms that require urgent referral (e.g., periodontal infection and swelling, dental caries, <i>candidiasis</i> , and <i>lichen planus</i>).
Refer to dental care provider if any signs of infection are detected such as sores, swollen or bleeding gums, loose teeth, mouth ulcers or growths, decayed teeth, or pain.
Refer patient for annual dental examinations.
Educate patient about the need for getting dental examinations annually or more frequently if needed.

Team Notes:

Key Recommendation 3. Dentist conducts a risk assessment and comprehensive annual dental examination including prevention, early detection, and treatment of periodontal disease and caries in all patients with diabetes.

Why?

Risk assessment with regular dental screenings and examinations can improve clinical decision making, reduce the need for complex periodontal therapy, improve patient outcomes, and ultimately reduce oral health care costs (Douglass, 2006).

How to Implement the Key Recommendation

- A. **Conduct risk assessments** to identify patients at increased risk of developing periodontal disease.
- B. **Conduct annual comprehensive dental examinations.**
- C. **When resources allow and there is an interested dental team member, provide training and laboratory certification for that person to conduct blood glucose testing** in the dental clinic to determine a patient's blood glucose level.

Team Notes:

Key Recommendation 4. Establish priorities for dental treatment and oral health education for people with diabetes.

Why?

After screening with the Community Periodontal Index of Treatment Needs/Periodontal Screening and Recording (CPITN/PSR) patients with diabetes and periodontal disease scores of “4” in two or more sextants should have priority for treatment because they are at higher risk of developing severe periodontal infections and tooth loss (Grossi, 1998).

How to Implement the Key Recommendation

Prioritize dental treatment using the system presented in table below.

Establish Priorities for Dental Treatment for People With Diabetes*
<ol style="list-style-type: none">1. Emergency care (e.g., trauma, acute pain, infections, etc.)2. Control of rampant dental caries and imminent pulpal involvement3. Initial periodontal therapy (full-mouth treatment)4. Restorative treatment5. Re-evaluate oral health6. Elective surgical treatment (e.g., third molars, periodontal, etc.)7. Prosthetics8. Other higher levels of care9. Recall or follow-up
<p>*When demand exceeds the resources available, patients may not receive all services above. All patients with diabetes should receive at least treatment through initial periodontal therapy and be placed on a recall based on risk for disease progression.</p>

Team Notes:

Recommendation 5. Provide dental treatment and periodontal therapy, including:

- **conducting annual dental examinations and cleanings,**
- **restoring caries in all people with diabetes, and**
- **providing recalls (follow-up visits) to maintain periodontal and dental health**

Why?

Dental treatment, and specifically periodontal therapy, has been associated with improved blood glucose control in people with type 2 diabetes. Harmful bacteria may begin to re-colonize the periodontal pockets in patients with diabetes six months after initial therapy. Periodontal treatment should be continued at this time to maintain periodontal health and remove pathogenic plaque and calculus build-up (Grossi, 1999; Stewart, 2001).

How to Implement the Key Recommendation

In those patients with moderate to advanced periodontal disease:

1. Provide initial periodontal treatment.

Action! See [Part 3](#) – Appendix D. for detailed clinical documents.

2. Provide a periodontal examination at the first recall visit: three to six months post-therapy.
3. Individuals with diabetes and periodontal disease will require regular monitoring and periodontal therapy. The treatment protocol described here allows the dental provider to effectively manage patients with diabetes who are at higher risk for periodontal breakdown and tooth loss. A continuous six-month recall treatment for life is recommended for most patients with periodontal exams annually; those who continue to break down may need to be recalled every three months.

Action! See [Part 3](#) – Appendix D. for detailed clinical documents.

4. In those individuals with mild periodontal disease, a CPITN/PSR screening and cleaning is also recommended every six months to prevent progression to more advanced periodontal disease.
5. If the patient presents to the dental clinic and has no idea of what his or her blood glucose level is, and an invasive dental procedure such as a deep cleaning or extraction is planned, the ideal protocol would have the patient obtain a blood glucose level prior to treatment. If the patient presents without his/her glucose meter and no knowledge of his/her blood sugar levels, a member of the dental staff that has been certified by his/her lab in the use of a clinic glucose meter can determine the blood glucose level easily in the dental clinic in less than five minutes. If the blood glucose is determined to be “high,” as determined by appropriate guideline, dental treatment may need to include providing an antibiotic and/or referring to a primary care provider. A determination as to the patient’s current compliance with medical follow up may initiate a referral to the appropriate outpatient clinic.

6. Though prosthetics are a higher and often costly level of service, when few or no teeth remain, patients find it more difficult to eat healthful foods such as meat, hard bread, fruits, vegetables, and other foods high in fiber. An unhealthful diet becomes increasingly detrimental in our patients with diabetes. Every attempt should be made to replace missing teeth with dental prosthetics when there is significant loss of chewing function with many missing teeth.

Team Notes:

Additional Recommendations

Working Together with Your Community and Organization

In addition to implementing the **Key Recommendations**, programs need to work on broader community and organizational support of the goals they are trying to achieve.

Community Recommendation

Develop and implement culturally appropriate oral health messages.

Why?

Dental health education can have a positive effect on oral health and a reduction in plaque, but to remain effective, efforts need to be ongoing (Kay and Locker, 1996).

How to Implement the Key Recommendation

- A. Increase knowledge of the link between oral health and blood glucose control.
- B. Increase daily oral care such as brushing and plaque removal between the teeth.
- C. Have regular dental examinations and cleanings.
- D. Increase knowledge about signs of infection, including sore gums, open sores, swollen or bleeding gums, loose teeth, bad taste in mouth, bad breath, teeth with cold or sweet sensitivity, or pain.
- E. Increase access to dental services by including community outreach efforts, service activities, and provider participation.
- F. Educate on the effects of smoking and diabetes with respect to periodontal disease and assist current smokers with referral to a Smoking Cessation Program.

Team Notes:

Organization Recommendations

Organization Recommendation 1. Provide education to providers, patients, and community educators to prevent and reduce adverse oral health outcomes.

Why?

Improved outcomes can be expected by training health care providers to conduct oral screenings as part of routine physical exams, to make appropriate referrals, and to promote interdisciplinary training of medical, oral health, and allied health professional personnel in counseling patients about how to reduce risk factors common to oral and general health (DHHS, 2003).

How to Implement the Key Recommendation

- A. Educate providers and community educators about the importance of oral health care in patients with diabetes.
- B. Support continuing education to include content on the association between oral health and general health, and the association between oral health and glycemic control.
- C. Support training for health care providers to conduct oral health screenings as part of routine physical exams and make appropriate referrals.

Team Notes:

Organization Recommendation 2. Support health care team members as they work continuously to improve the quality of dental care and patient experience of care.

Why?

Allocations of health service resources are needed to provide the largest benefits for the population (Kay, 1996; CDC, 2007).

How to Implement the Key Recommendation

- A. Keep current regarding program accomplishments, barriers/problems, and support that is needed to enhance both quality, quantity, efficacy, and the patient care experience.
- B. Work with administration and the team to obtain needed resources such as supplies, equipment, and personnel.
- C. Establish strategies to address barriers/problems.
- D. Urban programs can implement the recommendations provided in this Best Practice by supporting clinical services, effective program management, and prevention activities.
- E. Provide support and technical assistance (e.g., staffing, program management, staff development, clinical support).
- F. Provide support and technical assistance for community-based prevention initiatives to improve Tribal infrastructure to deliver community-based primary prevention and oral health education programs, and to conduct current community oral health assessments.
- G. Provide support and technical assistance for clinic-based preventive programs, by including clinical protocols for prevention techniques and developing appropriate oral health education materials.

Team Notes:

6. Organization Recommendation 3. Establish a multi-disciplinary diabetes team that includes dental providers.

Why?

A multi-disciplinary, coordinated approach to patient care achieves better results for diabetes management. Many people with diagnosed diabetes, with undiagnosed diabetes, or those who are at risk for diabetes, may visit a dental provider but not the medical provider. Therefore, dental providers are well-positioned to deliver prevention messages, identify high-risk patients, communicate the need for metabolic control, and facilitate multi-disciplinary diabetes care (California Diabetes Program, 2009; CDC, 2007). Additionally, many people with diabetes do not regularly see a dentist and need to be educated on the importance of oral health to their diabetes and general health.

How to Implement the Key Recommendation

Promote a collaborative approach to comprehensive diabetes care:

- A. Diabetes team and/or coordinator should establish a line of communication with dental providers.
- B. Invite interested dental providers to be on the diabetes team and/or diabetes advisory council.
- C. Establish guidelines and a referral system from the primary care clinic and community health program to the dental clinic and vice versa, to avoid patients “falling through the cracks.”
- D. Establish a protocol to alert dental and primary care providers that a patient has diabetes (e.g., use a Red Flag on his or her chart).
- E. Establish health care policies and procedures to coordinate system services across dental and primary care.
- F. Agree on consistent language and messages for diabetes education across health disciplines.
- G. Work together to identify and prioritize gaps in oral health care, and develop a plan to eliminate gaps.
- H. Conduct joint education and training programs and presentations to keep lines of communication open (e.g., dental to primary care and vice versa).

Team Notes:

PART 3 Appendices, Tools, and Resources

Appendix A. Supplemental Information

1. Importance of Oral Health

People with diabetes can have special issues with their teeth and gums, especially if their blood glucose is high. The higher the blood glucose, the greater the risk of developing advanced periodontal disease. American Indians and Alaska Natives with diabetes have two to three times more advanced periodontal disease than persons who do not have diabetes. Periodontal disease results in the loss of all teeth in approximately one-third of American Indians and Alaska Natives with diabetes. People without teeth can suffer emotionally and also nutritionally because they may not have the ability to eat many important types of foods (DHHS, 2001). Periodontitis can also negatively affect the diabetic condition. The infection and inflammation associated with periodontitis can aggravate blood sugar control and increase risk for many of the complications of diabetes such as cardiovascular disease, coronary artery disease, and chronic kidney disease. (Grossi, 1998; Saremi, 2005; Taylor, 1996, 2008)

People with diabetes have oral health issues beyond periodontal disease and dental caries. Other oral health issues observed in people with diabetes include: burning mouth syndrome and potential difficulty in wearing dental prosthetics, salivary gland dysfunction/dry mouth, fungal infections, *lichen planus*, and lichenoid reactions, delayed healing, and taste disorders.

2. Benefits and Risks of Implementing This Best Practice

Regarding potential benefits associated with this Best Practice, organizations and communities that implement these recommended practices should expect the following benefits:

- Oral health care practices are based on current medical evidence.
- Periodontal disease and dental caries in the population is prevented through self-care, primary health care, and dental treatment interventions.
- The burden of existing periodontal disease is reduced.

Regarding potential harms associated with implementing this Best Practice, oral health care has some risks, such as allergic reactions or stomach upset with antibiotics and analgesics, and sensitivity to cold after a deep cleaning or deep filling.

Implementing this Best Practice, however, will likely do more good than harm to patients with diabetes. Treatment performed under the guidelines of these Best Practices will be rendered under *Informed Consent*, and therefore the person undergoing treatment will be made aware of all risks, benefits, and options.

3. Sustaining an Oral Health Care Program

Organizational challenges of implementing the Best Practice may include inadequate facility size, funding, staffing, and competing priorities, and should be addressed in the organization's strategic plan. Implementing a Best Practice has cost implications that may require the organization to prioritize funding to include this Best Practice. There are critical issues that must be addressed to enhance program success and sustainability.

It is common for new initiatives to require a certain level of maturity before care goals can be achieved. This maturational process may require more than a few years to produce the desired outcomes in a stable and self-sustaining fashion. Sustainability is a critical issue for programmatic success, and can be an elusive target.

The following recommendations may be useful in fostering sustainability in newly implemented diabetic eye care programs:

- strong leadership and organizational support that includes funding for staff, training, and resources
- establishing policies that support an effective oral health program
- ensuring that the organization strategic plan addresses dental care
- primary care staff mentoring by dental champions
- active participation by dental staff in the diabetes care team (for example, initiate a dental care workgroup within the diabetes team)
- use of multi-year audit results to identify the effectiveness of activities and plan next steps
- ongoing assessment of patient satisfaction with dental care
- using what is learned to make improvements
- technical assistance for patient and community education
- data systems that provide timely access to relevant clinical information.

Appendix B. Key Measures Example

Remember—this is an example! Apply this process to your community using your data.

Periodontal disease is increasing in our community. Our health care center and community are concerned about the increasing number of people with oral health issues.

Diabetes team takes action. Our diabetes team talked about addressing this problem. We read the Oral Health Care Best Practice and talked about the key recommendations.

Identified sources of data. Local data included:

- *Diabetes Care Outcomes and Audit* data that includes dental examination.
 - o 66% of people with diabetes had a dental exam in the past year.
- RPMS data for PEPC for oral health education.
 - o 50% of people with diabetes had oral health education in the past year.

Selected suitable Best Practice. After thinking carefully about our goals and resources, and reviewing data, we decided the Oral Health Care Best Practice was a good fit for us. We chose to work on two of the Key Recommendations: providing annual dental examinations and providing patient education on oral health care.

Identified target population. We decided to start implementing this Best Practice with the current patients listed in the diabetes registry.

Identified program goals:

- To increase the number of people with diabetes who have annual dental exams.
- To increase the number of people with diabetes who have oral health education.

Identified SMART objectives based on our resources and data.

- The percent of patients who receive an annual comprehensive dental exam will increase from 66% to 80% in the next twelve months.
- The percent of diabetes patients who have documented oral health education will increase from 50% to 60% in the next twelve months.

Selected Key Measures. We chose the corresponding Key Measures for these Objectives and Key Recommendations. Data will be collected and reviewed at baseline and mid-year.

Table 1. Selected Key Measures

A. Measure	B. <u>Baseline</u> or beginning value and date (collected prior to starting activities)	C. Most recent value and date (if applicable)	D. Data source (where did these numbers come from)
1. * Percent of diabetes patients who had documented dental exams in the past twelve months	66% as of 12/15/2010	68% as of 2/12/2011	RPMS
2. * Percent of diabetes patients who had a documented dental-related patient education in the past twelve months	50% as of 12/15/2010	55% as of 2/12/2011	RPMS

* Required Key Measure

Appendix C. Improving Oral Health Care Programs Example

Remember—this is an example! Ask these questions in your community, thinking about your local needs, resources, and tracking systems.

There are four fundamental questions to ask as you plan and implement your best practice. These questions (and sample answers) are:

1. Who is the target population?

- People in our community with diabetes or at risk for diabetes.

2. What are you trying to do?

- Improve dental care and services for people with diabetes and at risk for diabetes, to prevent oral disease, particularly dental caries and periodontitis, and to improve dental and health outcomes.

3. How will you know if what we do makes things better?

- Collect and display data on an ongoing basis.
- Analyze the data and use it to plan next steps.
- Improved data results suggest that things are getting better. Examples include:
 - o Over one year, there is a 15% increase in dental exams in quarterly diabetes audit results.
 - o Within six months, there is a 10% increase in the number of patients who rate the quality of their dental services as “good” or “great.”

4. What can we do to make things better?

- Receive leadership support to improve diabetes oral health care.
- Include dental providers on diabetes team.
- Diabetes team members identify gaps in oral health care and identify realistic solutions.
- Diabetes team works together to increase the number of annual dental examinations performed for people with diabetes and at risk of diabetes.

Appendix D. Detailed Clinical Documents

Modified from “Periodontal disease treatment protocol for individuals with type 2 diabetes mellitus.” IHS Oral Health Program Guide, Chapter 4-P-1-10.

Appendix D.1. Provide Initial Periodontal Treatment

The periodontal treatment protocol for dental patients with diabetes and generalized moderate-to-severe periodontitis uses a combination of non-surgical ultrasonic instrumentation with systemic antibiotic and anti-infective agents. It is used in patients with deep probing depths (≥ 6 mm) and bleeding in multiple sextants of the mouth. It is often helpful to make two one-hour treatment appointments for the patient following his or her dental examination. The two appointments should be within a fourteen-day period of time and preferably in the morning. Have a sugary snack available such as orange juice if there is any probability of hypoglycemia. A description of the treatment protocol follows.

A. Initial Treatment Procedure

Oral hygiene education. Provide the patient with oral hygiene instructions, emphasizing the use of a soft bristle brush. There are many tools that can be used to clean between the teeth. Pick the most appropriate one that your patient can and will use. This can be floss, one of the new floss-holding devices, rubber tips, or interproximal brushes or picks. Demonstrate how to use it and provide one for your patient. To avoid overwhelming the patient at the first visit, it is helpful to phase the oral hygiene instructions. Simple techniques of brushing and use of a rubber tip can be introduced initially, while more advanced home care instructions, such as proxabrush and floss use, can be taught at subsequent visits.

Set up equipment. Set up the ultrasonic machine and have a mirror, explorer, and probe available.

Anesthesia and probing. Anesthetize upper and lower quadrants on the same side of the mouth. Use nerve blocks or regional anesthesia as appropriate. Following anesthesia, a periodontal exam can be started on the half-mouth to be treated. If the patient can tolerate the probing of the non-anesthetized half of the mouth, complete the full-mouth probing and recording at this time. However, if the patient is too sensitive for probing on the non-anesthetized side, complete the probing at the next treatment visit when the patient is anesthetized.

Ultrasonic debridement. Start on the distal of the most posterior tooth of the given quadrant and proceed around the buccal aspects to the midline with the ultrasonic scaler. Although the procedure emphasis is on root debridement, all supragingival calculus should also be removed. Repeat the ultrasonic debridement from the lingual, again debriding each tooth for one minute. It is important to go to the depths of the pocket and completely around (360 degrees) each tooth to remove all plaque and calculus in the lateral and apical projections of the pockets.

Treatment of overhangs. All overhangs should be removed at this time with the dental hand piece and a flame-shaped or other appropriate bur.

Extractions. If possible, extract all periodontally hopeless teeth at this time.

Fluoride varnish if any recent caries noted or restored.

B. Postoperative Care

Antibiotic treatment. If no contraindications (e.g., pregnancy, allergy), prescribe doxycycline (100 mg bid) for 14 to 21 days at the end of the second debridement visit if severe inflammation is present and/or if the patient's diabetes isn't well-controlled.

Oral hygiene. The patient should rinse two times per day with 10 ml of 0.12% chlorhexidine solution for one week after each debridement procedure. Thereafter, use of an antiplaque/antigingivitis mouthrinse, such as one of the essential oil mouthrinses, can be used as part of a daily home care regimen of brushing, interproximal cleaning, and mouthrinsing.

Pain relief. Patients should take appropriate analgesics (e.g., ibuprofen 400 mg, acetaminophen 650 mg, etc.) either before or immediately after the debridement procedure(s). A seven-day supply of these analgesics can be prescribed.

Post-operative emergencies. Treat abscesses of periodontal origin with incision and drainage or with closed debridement and local irrigation using povidone iodine (10%) and hydrogen peroxide. Alternatively, a small open-flap surgical debridement procedure can often be helpful in gaining access to the affected tooth root as well as encouraging drainage.

Appendix D.2. Provide Continuous Periodontal Therapy

First recall or follow-up with periodontal re-evaluation:

Provide a periodontal examination and dental caries check at the first recall visit, two to six months post-therapy. Patients who received the initial treatment will return for this recall in a variety of clinical conditions. This periodontal examination will document the post-therapy periodontal health status, which, in turn, provides the clinical evidence to determine additional therapy needs as well as the appropriate recall interval.

Reinforce and motivate the patient to maintain excellent oral hygiene.

Remove calculus. Heavy subgingival calculus should not be expected at this recall appointment. However, light supragingival calculus may be present, particularly in mandibular anterior areas, as well as small islands of subgingival calculus.

Assess for additional root planing if deep pockets persist. Evaluate for extractions, use of local antibiotics in isolated defects, and/or prescription of a systemic enzyme suppressor.

Assess for referral. A referral for the patient to see a periodontal specialist is indicated in cases that did not respond well to dental therapy. The recommendation for the referral should be documented. This is a service that in many cases the IHS cannot provide, and would need to be provided by the private sector at the patient's own expense.

Appendix D.3. Twelve Months and Beyond (Continuous six-month recall or follow-up)

Individuals with diabetes and periodontal disease will require constant monitoring and regular periodontal therapy. The treatment protocol described above allows the dental provider to effectively manage patients with diabetes who are at higher risk for periodontal breakdown and tooth loss.

A continuous six-month recall treatment for life is recommended for most protocol patients, with annual comprehensive dental exams. For individuals who practice excellent oral hygiene and whose periodontal tissues remain healthy, you may consider recall intervals longer than six months. Each dental provider will have to assess the status and progress for these periodontal patients at each appointment. However, even for periodontally stable patients, periodic monitoring of periodontal status is essential for the maintenance of healthy gums.

Providing an effective treatment protocol for individuals with diabetes and periodontal disease is important. However, clinic management activities are also essential to carry out the treatment program. Establishing the following systematic approach to support the treatment protocol is suggested:

Diabetes and periodontal patient register. Establishing a method to identify and follow periodontal patients with diabetes is necessary for tracking patients and their recall needs, and for long-term patient success. Currently, dental software or the Resource and Patient Management System (RPMS) and Dental Data System are available, allowing the development of a diabetes and periodontal patient register and tracking system. Any number of other systems are possible, including the use of a notebook and a pencil.

Patient monitoring. To determine the long-term success of the treatment, you will need to obtain clinical status measurements for each patient at a regular time interval. Unfortunately, the CPITN serves only as a crude indicator of periodontal status. For a more definitive measure of periodontal health, a full-mouth probing and recording is recommended at least annually for patients on the diabetes and periodontal patient protocol register, particularly those with a history of moderate to severe periodontitis.

“Back to go.” At some point, the following question will occur for ‘protocol drop-outs’ who periodically present to the dental clinic: “Shouldn’t this patient start all over with the treatment?” The clinical conditions that would indicate starting the treatment protocol over are somewhat variable. Here are some general rules to follow:

- Patients who did not finish the initial treatment—For patients who received only partial initial treatment and then dropped out (and it has been *less than two years*), perform the initial treatment protocol on the untreated portion of the mouth using chlorhexidine and doxycycline according to the protocol. The previously treated area of the mouth can be debrided according to the six-month recall instructions (i.e., based on presence or absence of deep pockets). From this point on, six-month recall visits should be scheduled.
- Patients who finished the initial treatment, then dropped out for *less than two years* since the initial treatment—Schedule the patient for six-month recall treatment procedures (based on CPITN scores), with six-month recall.
- Patients who finished the initial treatment, then dropped out for *more than two years* since the initial treatment, and deep pockets with bleeding remain—Schedule the patient to begin the initial treatment protocol again, with six-month recall.

Appendix E. Measures and Data Sources for Monitoring Progress and Outcomes

The following measures can be used to monitor the effects of implementing the oral health best practice:

- **Access to dental services**
 - Clinical Reporting System (CRS) currently tracks “access to dental services.”
- **Dental recall system**
 - Presence and effectiveness of a dental recall system for patients with diabetes (e.g., conduct chart review to verify).
- **Functioning referral system**
 - Presence and effectiveness of a referral system between primary care and dental teams.
- **Patient satisfaction**
 - Patient experiences with dental services (e.g., conduct patient surveys or targeted interviews).
- **Staff satisfaction**
 - Staff satisfaction with care provided (e.g., conducts dental and primary health care staff surveys or targeted interviews).

Note! Dental-related patient education can be tracked and reviewed using Patient and Family Education Protocols and Codes (PEPC).

Tools and Resources

Patient Handouts

“**Prevent diabetes problems: Keep Your Teeth and Gums Healthy**” is an excellent brochure for patients describing how diabetes affects gums and teeth, signs and symptoms of gum disease, necessary home care, and dental treatment.

http://diabetes.niddk.nih.gov/dm/pubs/complications_teeth

This link is to the **International Diabetes Federation’s** information release to the public on the importance of oral health to diabetes management, including the importance of regular checkups and a description of dental treatments.

<http://idf.org/diabetes-and-oral-health-information-public>

Tips for Good Oral Health (print and laminate):

Tips for Good Oral Health
<ul style="list-style-type: none">• Brush teeth twice a day (with a fluoride toothpaste).• Clean between the teeth daily with floss or interdental cleaners.• Visit a dentist routinely for a checkup and professional cleaning twice a year.• Eat a well-balanced diet.• Maintain good blood glucose control by following your physician’s treatment plan for diet, exercise, medications, and monitoring.• Taking good care of teeth and gums through prevention and treatment can improve your blood glucose control. Gum infections can make blood glucose control more difficult.• If you smoke, quit! To quit, call 1-800-QUIT-NOW. It’s a free call. You get a free coach and a free quit plan.

Watching for Symptoms (print and laminate):

Watching for Symptoms
<p>I will contact _____ at _____ right away if I experience any of the following symptoms:</p> <ul style="list-style-type: none">• bad breath that will not go away• red or swollen gums• tender or bleeding gums• painful teeth or painful chewing• loose teeth• sensitive teeth

Provider Handouts

Diabetes Prevention

This dental brochure describes how dental professionals can help educate patients on preventing or delaying the onset of diabetes.

http://ndep.nih.gov/media/PPOD_Dental_Brochure.pdf

Diabetes Management—Diabetes Numbers at-a-Glance 2009 (Standards of Care at-a-Glance) Two pages. Laminate and post or use in field. National Diabetes Education Program. http://ndep.nih.gov/media/NumAtGlance_Eng.pdf

Working Together to Manage Diabetes: A Guide for Pharmacists, Podiatrists, Optometrists, and Dental Professionals. This guide includes signs and symptoms of periodontal disease and other common problems of the mouth as well as eye and foot complications. The guide focuses on the importance of team care and the critical concepts these health care professionals should understand about diabetes. All members of the health care team need to recognize potential complications and know what to do to intervene. National Diabetes Education Program. http://www.ndep.nih.gov/media/PPODprimer_color.pdf

Organizational Tools

Logic model for an oral health program. Practical information and examples and worksheets on how to develop a logic model can be found at:

http://www.cdc.gov/OralHealth/state_programs/infrastructure/activity8.htm.

Web-based Resources

IHS Division of Diabetes Treatment and Prevention [Internet]. Creating Strong Diabetes Programs: Plan a Trip to Success. An on-line training course on effective program planning and evaluation. [Developed July 2009]

<http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=trainingBasicsCreating>

IHS Division of Diabetes Treatment and Prevention [Internet]. Creating Strong Diabetes Programs: Plan a Trip to Success. A workbook (to accompany on-line training course above) on effective program planning and evaluation. [Developed July 2006]

<http://www.ihs.gov/MedicalPrograms/Diabetes/HomeDocs/Training/WebBased/Basics/Creating/Workbook.pdf>

American Academy of Periodontology <http://www.perio.org/>

The American Academy of Periodontology is the professional association of periodontists committed to the public's periodontal health, as well as ethics, science, and professional advancement.

American Dental Association <http://www.ada.org>
http://www.ada.org/sections/publicResources/pdfs/patient_18.pdf

The American Dental Association is the professional association of dentists committed to the public's oral health, as well as ethics, science, and professional advancement. It provides continuing education and a monthly journal for dentists, in addition to consumer education on oral health topics. This web page discusses considerations for treating the dental patient with diabetes.

American Dental Hygienists Association <http://www.adha.org/>

The American Dental Hygienists Association is the largest professional organization representing the interests of dental hygienists. It provides continuing education through its Institute for Oral Health, as well as information on oral health topics, careers in dental hygiene, and professional issues.

American Diabetes Association <http://www.diabetes.org/>

The American Diabetes Association funds research; publishes scientific findings; provides information and other services to people with diabetes, their families, health care professionals, and the public; and advocates for scientific research and for the rights of people with diabetes.

American Dietetic Association <http://www.eatright.org>

The American Dietetic Association is the nation's largest organization of food and nutrition professionals. Its mission is to promote optimal nutrition and well-being for all people by advocating for its members.

Centers for Disease Control and Prevention (CDC), Division of Diabetes Translation
<http://www.cdc.gov/diabetes>

CDC's Division of Diabetes Translation aims to reduce the nation's burden of diabetes by strengthening public health surveillance systems, conducting applied translational research, developing and supporting state-based diabetes control programs, implementing the National Diabetes Education Program, and providing public information.

Centers for Disease Control and Prevention (CDC), Oral Health Resources
<http://www.cdc.gov/OralHealth/>

CDC is the lead federal agency responsible for promoting oral health through public health interventions.

HRSA Health Disparities Collaboratives <http://www.healthcarecommunities.org/>

The Health Disparities Collaboratives is a program that includes the Bureau of Primary Health Care, Institute for Healthcare Improvement, National Association of Community Health Centers, Inc., and other strategic partners to generate and document improved health outcomes for underserved populations; transform clinical practice through models of care, improvement, and learning; develop infrastructure, expertise, and multi-disciplinary leadership to support and drive improved health status; and build strategic partnerships.

National Diabetes Education Program

<http://www.YourDiabetesInfo.org>

<http://www.ndep.nih.gov>

<http://www.cdc.gov/diabetes/ndep>

<http://www.diabetesatwork.org>

<http://www.betterdiabetescare.nih.gov>

The National Diabetes Education Program (NDEP), jointly sponsored by the National Institutes of Health and the Centers for Disease Control and Prevention, brings together public and private partners to improve treatment and outcomes for people with diabetes, to promote early diagnosis, and to prevent the onset of type 2 diabetes. NDEP promotes awareness and education activities and quality care for people with diabetes and people at risk for the disease. The website provides tools for educating health care providers and patients about diabetes prevention and control, including information about oral health.

National Diabetes Information Clearinghouse <http://diabetes.niddk.nih.gov>

The National Institute of Diabetes and Digestive and Kidney Diseases' (NIH) National Diabetes Information Clearinghouse is an information and referral service designed to increase knowledge about diabetes among patients and their families, health care professionals, and the public.

National Institute of Dental and Craniofacial Research <http://www.nidcr.nih.gov>

The National Institute of Dental and Craniofacial Research (NIDCR) conducts and supports research and training of researchers to promote the oral, dental, and craniofacial health of the American people, to prevent oral diseases and conditions, and to develop new diagnostics and therapeutics. Two useful publications developed for consumers are *Diabetes: Dental Tips* and *Prevent Diabetes Problems: Keep Your Teeth and Gums Healthy*.

Contacting other people involved in diabetes oral health care is important because they can help you get started. Your peers at other health care organizations can share their expertise, materials, and ideas, and can also tell you what has worked for them and what has not. This can help you avoid reinventing the wheel. Here are some people and programs to connect with:

Examples of Current Best Practice Programs

ACL Dental Program

Edwina Lee, RDH

(505) 552-5310

This program recently began using the treatment protocol outlined in this Best Practice.

HuHuKam Memorial Hospital Dental Program

Jody Herschenhorn, DDS
(602) 528-1209

The clinic and staff have many years of experience with the treatment approach outlined in this Best Practice and can offer advice to new programs.

Phoenix Indian Medical Center (PIMC)

Gregory Todd Smith, DDS, MSD
IHS National Consultant, Periodontics
(602) 263-1200 ext.1470
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PIMC has vast clinical experience and a comprehensive oral health care program and can offer advice to new and existing programs.

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Area Diabetes Consultants.

<http://www.ihs.gov/MedicalPrograms/diabetes/index.cfm?module=peopleADCDirectory>

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