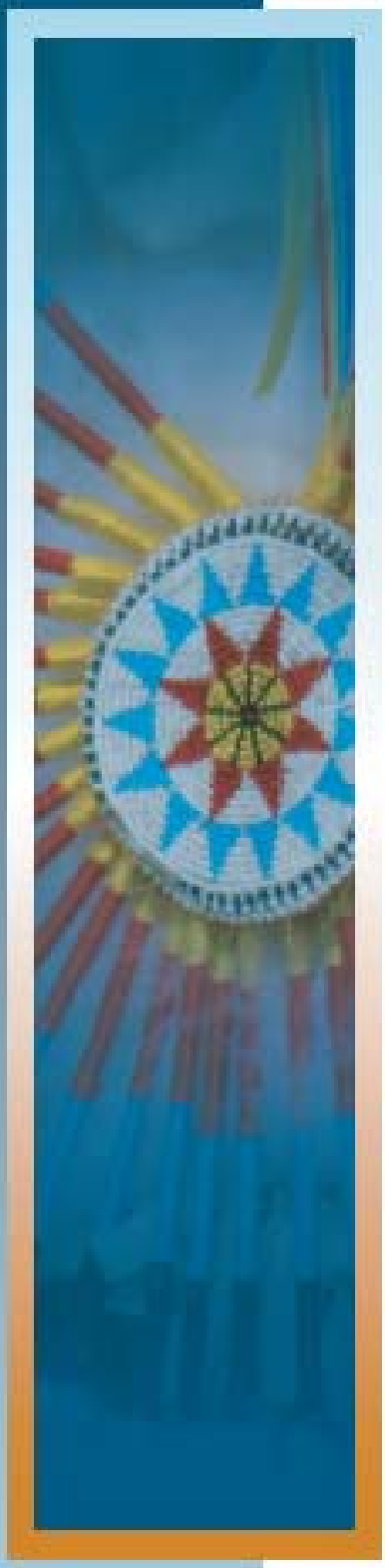

INDIAN HEALTH DIABETES BEST PRACTICE

Eye 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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Table of Contents

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. Provide a diabetic retinopathy (DR) education component in all diabetes education programs for patients and family.

2. Adhere to the evidence-based accepted standards of care for DR surveillance and use a qualifying examination for DR surveillance:
   - Dilated eye examination by an optometrist or ophthalmologist
   - Qualifying photographic retinal examination
     - Dilated seven standard field stereoscopic photographs (Early Treatment Diabetic Retinopathy Study (ETDRS) photos)
     - Other photographic method formally validated to ETDRS

3. Recognize early when to refer patient for consideration of treatment.

4. Monitor risk factors and treatments.

5. Provide ophthalmology referral for all cases determined to be at risk for vision loss and possible candidates for treatment and provide visual rehabilitation for patients with vision loss.

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 may report on other measures as well.

* The following measures are of primary importance:

1. ***Percent of diabetes patients with a documented qualifying eye exam in the past twelve months.

2. *** Percentage of diabetes patients with abnormal retinal screening exam who received appropriate specialty follow up in the past twelve months.

PART 1 Essential Elements of Implementing This Best Practice

Purpose

This Best Practice describes guidelines for programs that seek to improve individual's diabetic eye health status and to enhance the delivery of effective diabetic eye care.

Target Population

The target population to be covered by this Best Practice is persons with type 1 or type 2 diabetes.

Action! See Part 3 – Appendix A. for the importance of eye care.

Intended Users of this Best Practice

The intended users of this Best Practice are all clinical providers serving all persons with type 1 or 2 diabetes, regardless of the patient's age or duration of diabetes, or presence/absence of comorbidities.

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

Definition of Diabetes Eye Care

People with diabetes mellitus (DM) are at lifelong risk for special problems with their eyes and vision. The complications associated with diabetes can affect visual function and virtually every component of the visual system, from the ocular adnexa and precorneal tear layer, throughout every structure in the eye, and finally to the occipital cortex in the brain. These changes can cause several ocular disorders such as retinopathy, cataracts, and glaucoma that may lead to vision loss or blindness, Because effective treatments for these disorders exist, eye care is an essential element of a diabetes program.

Goals of This Best Practice

- Improve diabetic eye care and services for people with diabetes to prevent diabetic retinopathy.
- Decrease vision loss due to diabetic retinopathy.

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. Provide a diabetic retinopathy (DR) education component in all diabetes education programs for patients and family. 2. Adhere to the evidence-based accepted standards of care for DR surveillance and use a qualifying examination for DR surveillance: • Dilated eye examination by an optometrist or ophthalmologist • Qualifying photographic retinal examination ▪ Dilated seven standard field stereoscopic photographs (Early Treatment Diabetic Retinopathy Study (ETDRS) photos) ▪ Other photographic method formally validated to ETDRS 3. Recognize early when to refer patient for consideration of treatment. 4. Monitor risk factors and treatments. 5. Provide ophthalmology referral for all cases determined to be at risk for vision loss and possible candidates for treatment and provide visual rehabilitation for patients with vision loss.

Action! See Part 2 for details on the implementation of each key recommendation.

Planning for Your Program and Evaluation

Key Action Steps

Key action steps in program and evaluation planning 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 who receive annual eye exams.
   - Increase the number of people needing retinal treatment who receive it.

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 number of people with diabetes with documented eye exams in the past twelve months from 70% to 90% by the end of the current fiscal year.
   - By the end of the current fiscal year, we will increase the number of people with diabetes who were identified as needing retinal treatment who have documented treatment by 10%.

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

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 may report on other measures as well.**
***The following measures are of primary importance:** 1. ***Percent of diabetes patients with a documented qualifying eye exam in the past twelve months.** 2. ***Percentage of diabetes patients with abnormal retinal screening exam who received appropriate specialty follow up in the past twelve months.**

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

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! Link to 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 Eye Care Programs Example to assist you with applying Key Recommendations and Key Measures to a program plan.

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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 (pp. 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. Provide a diabetes retinopathy (DR) education component in all diabetes education programs for patients and family.

Why?

Control of comorbidities can substantially reduce the onset and progression of diabetic retinopathy (DR), and timely diagnosis and treatment of high risk DR can nearly eliminate blindness due to DR. Because half of American Indian/Alaska Native people fail to achieve DR surveillance standard of care, even in clinical settings wherein the opportunity for this care is immediately available, this message is not being effectively delivered. Eye complications are frequently asymptomatic and go unrecognized by the patient (Giusti, 2001; Taylor et al., 2004), delaying detection and treatment of high risk DR when treatment is most effective. Patient awareness of their role and opportunities in management of their disease can increase compliance with standards of care and reduce vision loss due to diabetes.

How to Implement the Key Recommendation

A. **Offer annual diabetic eye care/DR education** to all patients with diabetes and reinforce this education during follow-up visits.

B. **Use pre-printed material** such as brochures and structured manuals during initial and follow-up visits (NEHEP, 2011).

C. **Use the patient's current retinal images as an educational tool and clinical demonstration aid** following image acquisition. This education should occur at the time of image acquisition during a conventional eye or physical examination or telemedicine encounter, and should be repeated annually.

D. **Educate patients and family members** about eye guidelines and reinforce the education during visits. The goal and content of the education should emphasize:
   1. The need to maintain blood glucose, blood pressure, and lipid levels as close to normal as possible,
   2. the importance of an annual dilated eye exam (or qualifying photographic retinal surveillance) by an optometrist or ophthalmologist,
   3. the importance of not smoking,
   4. that DR can be totally asymptomatic even at advanced stages, and
   5. that DR is treatable and vision loss preventable in most cases.

E. **Advise when an individual should seek eye care** beyond routine annual examination (e.g., any change in vision, blurred vision, difficulty reading signs or books, seeing double, seeing floaters or spots, apparent distortion or bending of straight lines, loss of side vision, eye pain in one or both eyes, prolonged eye redness, pressure feeling in the eyes, and pregnancy or planned pregnancy).

Team Notes:

Key Recommendation 2. Adhere to the evidence-based accepted standards of care for DR surveillance and use a qualifying examination for DR surveillance.

Why?

The risk of severe vision loss from diabetes can be reduced to less than 5% by timely diagnoses and treatment (ETDRS,1998).

How to Implement the Key Recommendation

A. **Conduct a qualifying retinal examination for DR shortly after the diagnosis of diabetes** (Office of Information Technology, IHS, 2010).
   1. Dilated comprehensive eye examination by an optometrist or ophthalmologist
   2. Seven standard field color stereoscopic photographic method using the Early Treatment Diabetic Retinopathy Study (ETDRS) methodology
   3. Validated photographic method based on ETDRS methodology

B. **Repeat qualifying retinal surveillance annually**.

C. **Conduct eye examinations more frequently** if retinopathy is progressing or risk factors for onset and progression of retinopathy are present.

D. **Among women who have diabetes and become pregnant** (i.e., women with pre-gestational DM, *not* gestational DM), conduct a comprehensive eye examination in the first trimester and follow closely throughout pregnancy.

Team Notes:

Key Recommendation 3. Recognize early when to refer patients for consideration of treatment.

Why?

Controlled clinical trials demonstrate that appropriate treatment (e.g., laser photocoagulation, intravitreal injection, vitectomy) substantially reduces the risk of vision loss due to proliferative DR and diabetic macular edema. Early referral for patients with severe non-proliferative DR is critical because laser treatment at this stage is associated with a significant reduction in the risk of moderate and severe visual loss and need for more invasive procedures such as vitrectomy (ETDRS Research Group, 1991; ETDRS Research Group, 1985).

Recently completed and ongoing clinical trials have elucidated the role of intravitreal injections of anti-VEGF agents and steroids (e.g., triamcinolone) in improving vision or preventing further loss of vision (Browning et al., 2009; DRCR Research Network, 2009, 2010).

How to Implement the Key Recommendation

A. **Refer patients immediately** if they have any level of diabetic macular edema, severe or more advanced non-proliferative DR, or any level of proliferative DR.

B. **Provide care by an ophthalmologist** knowledgeable and experienced in managing and treating DR.

Team Notes:

Key Recommendation 4. Monitor risk factors and treatments.

Why?

Adherence to demonstrated standards of care, i.e., control of blood glucose, serum lipids, blood pressure, kidney function, anemia, and abdominal obesity, reduces the risk of onset and progression of DR, and thereby maximizes and preserves vision (Aiello et al., 2001; Chase et al., 1990; Chew et al., 1996; Cruickshanks et al., 1993; DCCT Research Group, 1993; DCCT/EDIC Research Group, 2008; Fong et al., 1999, 2004; Holman et al., 2008; Keech et al., 2007; Klein et al., 1988, 1993, 1995; Marshall et al., 1993; Sjolie et al., 1997; UKPDS, 1998a; 1998b).

How to Implement the Key Recommendation

A. **Monitor blood glucose control** with a goal A1C of < 7.0% (DCCT Research Group, 1995c; EDIC Research Group, 2003; Holman et al., 2008, UKPDS, 1998a).

B. **Monitor blood pressure control** with a goal blood pressure of < 130/80 (UKPDS, 1998b).

C. **Monitor blood lipids control** (Aiello et al., 2001; Chew et al., 1996).

Team Notes:

Key Recommendation 5. Provide ophthalmology referral for all cases determined to be at risk for vision loss and possible candidates for treatment and provide vision rehabilitation for patients with vision loss.

Why?

Vision rehabilitation services can help maximize vision, allow for gainful employment, and help people perform daily living tasks (Goldzweig et al., 2004).

How to Implement the Key Recommendation

Refer the patient to an optometrist or ophthalmologist trained in vision rehabilitation and low-vision care.

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 codified mechanisms for community-based DR surveillance and referral of persons with threshold DR to eye care and surgery.

Why?

Clinic-based eye care has been successful in achieving DR surveillance standard of care in approximately 50% of American Indian/Alaska Native people. Accessing the patient outside the eye clinic is an effective way to provide standard of care for the remaining 50%. (Wilson et al., 2005). In some settings community-based outreach using eye care providers can help close the gap; however, such programs are expensive in terms of human and logistic resources. Telemedicine provides an opportunity to provide cost-effective qualifying DR evaluations in Indian country (Whited et al., 2005).

How to Implement the Recommendation

A. **Deploy a qualifying DR surveillance telemedicine program** in the primary care clinic of a community-based health facility.

B. If the diabetes prevalence in the catchment area of the facilities serving a region is too small to support a dedicated telemedicine program, **implement a portable or mobile program**. If an existing qualified telemedicine program is located nearby, establish collaboration with the hosting facility to share DR surveillance capacity. This collaborative approach allows a virtual expansion of the catchment areas and user-based sharing of the operational costs.

C. **Establish written or electronic referral mechanisms** to optimize communication among clinic and community programs.

D. **Evaluate outcomes regularly** and modify referral mechanisms if needed.

Team Notes:

Organization Recommendations

A health care organization that wants to improve diabetes eye care must be motivated and prepared for change throughout the entire organization. The organization's leadership must identify diabetic eye care improvement as important work. This identification will encourage the entire organization to make changes that improve diabetic eye care.

Organization Recommendation 1. Develop clearly articulated improvement goals, policies, and effective improvement strategies.

Why?

Improvements in the organization of the health care delivery system may improve the delivery of appropriate diabetes eye care.

How to Implement the Recommendation

A. Support a culture for quality evaluation and improvement.

B. Create incentives for improved eye care practices.

C. Provide programmatic time for continuous quality improvement.

D. Dedicate resources (human and financial).

E. Commit to improve eye health and reduce the burden of diabetic eye complications.

F. Develop specific eye care practice goals and objectives.

G. Adhere to the established and commonly accepted practice guidelines for DR (e.g., American Diabetes Association [ADA], American Academy of Ophthalmology [AAO], or American Optometric Association [AOA] guidelines) (Fong et al., 2004).

H. Incorporate validated, DR surveillance methods that include qualifying methodologies and have documented ability (Wilson et al., 2005) to improve on conventional clinical DR surveillance.

I. Support information technology with appropriate resources to document and track compliance with DR standards of care for diagnosis and treatment.

J. Commit to recruit, retain, and promote staff with the willingness and capacity to implement Best Practice programs effectively.

K. Increase capacity to conduct audits that monitor DR diagnostic and treatment practice.

Team Notes:

Organization Recommendation 2. Develop a diabetes team that includes diabetic eye care.

Why?

A team-based approach to diabetes care can improve outcomes for the patient and operational efficiencies for the health care organization.

How to Implement the Recommendation

A. Incorporate proper eye care into routine diabetes care.

B. Make diabetic eye care available on-site or through a referral mechanism that is convenient and efficient for the patient and provides feedback to the primary care provider.

C. Establish referral mechanisms if eye care services are not available in the facility and have the outcome of these extramural services available in the patient's medical record.

Team Notes:

Organization Recommendation 3. Cascade eye care objectives into annual performance plans.

Why?

Annual performance plans can provide a roadmap for clinical improvement goals and define accountability. Appropriate measures should be developed for clinical objectives related to these goals. Cascading these objectives into annual performance plans of the employees in the organization responsible for DR surveillance can enhance performance against improvement goals and serve as a basis for appropriate recognition.

How to Implement the Recommendation

A. Use Government Performance and Results Act (GPRA) performance goals for DR surveillance.

B. Collaborate with clinic staff involved on how changed clinical processes and provider roles will help meet these goals, and select appropriate objectives and measures to be included in their annual performance evaluation. Fully Successful should be considered the performance for meeting the GPRA goal, and Exceptional for exceeding it.

Team Notes:

PART 3 Appendices, Tools, and Resources

Appendix A. Supplemental Information

1. Importance of a Diabetes Eye Care Program

The most common complications of diabetes that are associated with vision loss include retinopathy, cataracts, and glaucoma. These complications may lead to mild or moderate vision loss or even blindness. **Diabetic retinopathy (DR)** is the most common microvasculopathy associated with diabetes and **the most common cause of new-onset blindness among working age adults in the United States and other industrialized countries. In almost all cases the disease is treatable, but the opportunity for preventing or reversing vision loss is associated with timely diagnosis and treatment.** Approximately 15–40% of people with type 2 diabetes have retinopathy (i.e., damage to the small blood vessels in the retina) at the time diabetes is diagnosed. This early retinopathy may be due to the extended period of time these individuals had clinically significant diabetes, but remained undiagnosed and uncontrolled. The risk factors associated with the severity of retinopathy include high mean fasting blood sugar, elevated A1C level, elevated systolic blood pressure, elevated urinary albumin-to-creatinine ratio, kidney failure requiring dialysis, elevated cholesterol, dyslipidemia, abdominal obesity, anemia, and duration of diabetes.

American Indians and Alaska Natives (AI/AN) with diabetes are at increased risk of developing eye complications and vision loss due to retinopathy, cataracts, and glaucoma. The prevalence of retinopathy among AI/AN adults in Oklahoma and among Pima Indian adults with diabetes ranged from 18–49.3% (West et al., 1980). Among the Sioux Tribe in South Dakota, the prevalence of retinopathy among adults with diabetes was 45.3% (Berinstein et al., 1997). Overall, the prevalence of DR is 2.2 times greater than the non-Hispanic white U.S. population as a whole (CDC, 2011).

Consider these facts:

- The most dangerous eye diseases related to diabetes frequently cause no symptoms until they are advanced and less treatable.
- Diabetic eye disease is the leading cause of new-onset blindness in the United States for people between the ages of 20 and 74 (CDC, 1994).
- People with diabetes have 25 times the likelihood of becoming blind as compared with people without diabetes (CDC, 1991).
- The prevalence of retinopathy increases with duration of diabetes, and eventually almost all individuals with diabetes demonstrate DR. After approximately twenty years of the disease, more than 90% of patients with DM will have some degree of retinopathy (WHO, 1994).
- Diabetes causes 12,000–24,000 cases of new blindness every year. (CDC, 2007).
- People with diabetes have special issues with their eyes beyond DR, such as eye irritation due to abnormal tears and other ocular surface disease of the eye, blurred vision due to diabetes causing refractive changes in their eyes, and double vision.

  Fortunately, these and other more severe eye complications of diabetes can be safely and effectively treated when identified early. Furthermore, controlled trials demonstrate that: (1) early and appropriate treatment substantially reduces the risk of vision loss due to diabetic macular edema and proliferative DR; and (2) control of blood sugar level, serum lipids, blood pressure, kidney function, anemia, and abdominal obesity reduces risk of onset and progression of DR.

2. Benefits and Risks of Implementing This Best Practice

Diabetes eye care carries little or no risk beyond its cost, and successful implementation of this Best Practice will provide a favorable and cost-effective impact of the ocular and visual public health of the population served.

3. Health Questions Addressed by Best Practice

This Best Practice addresses the following questions:

a. How many times a year do people with diabetes need a qualifying retinal examination?
b. What is a qualifying DR examination; what are examples of qualifying and non-qualifying retinal examinations?
c. What interventions effectively protect against vision loss from DR?
d. How can the effectiveness of referrals be enhanced?
e. What new initiatives provide opportunities for enhancing standard of care for DR?

4. Sustaining a Diabetes Eye Care Program

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:

- Obtain financial commitment from the organization's administrative leadership for conventional and technology-based or other enhanced diabetes eye care programs.
- Obtain financial commitment from the organization's administrative leadership for the maintenance and evolution of health care technology.
- Create and obtain support for the infrastructure needed to provide patients living in remote areas with technology-based solutions.
- Secure ongoing funding. Grants and other one-time funding opportunities are useful for program implementation, but ongoing revenue is needed for sustainability. Pursue reimbursement opportunities from all relevant third party payers. Newly implemented programs using innovative processes or technology may require a dialogue with the payer to provide a business case for reimbursement, including evidence supporting cost-effective clinical outcomes. Cost avoidance value should be showcased.
- Share successes with the community by making presentations to the Tribal health board and Tribal council and sharing news with Tribal media.

Appendix B. Key Measures Example

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

Diabetes-related visual problems are increasing among our community. Our health care center and community are concerned about the risk of diabetes-related eye complications that can lead to blindness.

Diabetes team takes action. Our diabetes team talked about addressing this problem and how the team could be more involved. We read the Diabetes Eye Care Best Practice and talked about the key recommendations.

Identified sources of data. Local data included:

- Audit data
- RPMS data
- Medical Record review
- Contract Health data
    - Data indicated:
        - 70% of patients with diabetes are receiving annual eye exams.
        - Current referral rate was unclear from data reviewed.

Selected suitable Best Practice. After thinking carefully about our goals and resources, and reviewing data, we decided the Diabetes Eye Care Best Practice was a good fit for us. We chose to work on two of the Key Recommendations: increasing annual eye examinations and making referrals to ophthalmology care for people who need retinal treatment.

Identified target population. We decided to start implementing this Best Practice by including all current patients listed in diabetes registry.

Identified program goals:

- To increase the number of people who have annual eye exams.
- To increase the number of people who receive appropriate retinal treatment.

Identified SMART objectives based on our resources and data:

- The percent of diabetes patients that receive an annual eye exam will increase from 70% to 85% in the next twelve months.
- Eighty percent of patients with diabetes who are at risk for vision loss will be referred as possible candidates for appropriate retinal treatment 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. Baseline or beginning value (collected prior to starting activities)	C. Most recent value (if applicable)	D. Data source (where did these numbers come from)
1.* Percent of diabetes patients with a documented qualifying eye exam in the past twelve months	70% as of 1/20/2011	73% as of 3/20/2011	RPMS, diabetes registry
2.* Percentage of diabetes patients with abnormal retinal screening exam who received appropriate specialty follow up in the past twelve months.	0% as of 1/20/2011	60% as of 3/20/2011	Contract health data

* Required Key Measure

Appendix C. Improving Diabetes Eye 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 your target population?**
   - The target population to be covered by this Best Practice is persons with type 1 or type 2 diabetes.

2. **What are you trying to accomplish by implementing this Best Practice**?
   - Improve diabetic eye care and services for people with diabetes to prevent DR.
   - Decrease vision loss due to DR in an efficient and cost effective manner.

3. **How will you measure the impact of implementing this Best Practice?**

   Collect and display data on an ongoing basis. Analyze the data and use it to modify current activity and plan next steps.

4. **What additional steps can you take to improve outcomes?**
   - Provide leadership support to improve diabetic eye care.
   - Include DR education components in all diabetes education programs for individuals and families.

Tools and Resources

Web-based Resources

Agency for Healthcare Research and Quality. Diabetes Care Quality Improvement Resource Guide and Workbook. [Updated June 2009].
Online workbooks to help States assess the quality of DM care and create quality improvement strategies. http://www.ahrq.gov/qual/diabqualoc.htm

American Academy of Ophthalmology. Preferred Practice Pattern: Diabetic Retinopathy [Updated September 2008; cited July 2009]. Provides detailed evidence-based recommendations for treatment by stage of retinopathy with and without macular edema and contains an extensive discussion of prevention and early detection of DR.
http://one.aao.org/CE/PracticeGuidelines/PPP_Content.aspx?cid=d0c853d3-219f-487b-a524-326ab3cecd9a

American Association of Diabetes Educators [Updated September 2008]. Online access to the AADE for tools, training, and other resources necessary to help patients with DM change their behavior and accomplish their DM self-management goals.
http://www.diabeteseducator.org/

American Diabetes Association [Updated July 2009]. http://www.diabetes.org

American Optometric Association. Optometric Clinical Practice Guideline: Care of the Patient with Diabetes Mellitus. Reference Guide for Clinicians [Updated September 2009]. Detailed evidence-based recommendations for eye care for patients with DM, including non-retinal eye complications. http://www.aoa.org/documents/CPG-3.pdf

Centers for Disease Control and Prevention (CDC). The National Diabetes Fact Sheet, 2011 [Updated January 2011]. Provides data on how many Americans have diabetes, as well as information on age, racial, and ethnic differences in diabetes, and on complications of the disease.
http://www.cdc.gov/features/DiabetesFactSheet/

Diabetes National Plan for Action [Updated December 2004]. A DHHS publication that provides DM prevention, detection, and treatment information, and includes simple action steps for individuals, families, health practitioners, and others. It also provides screening tools, information on other federal DM programs, and listings of federally funded resources.
http://aspe.hhs.gov/health/NDAP/NDAP04.pdf

Division of Diabetes Treatment and Prevention (IHS) Creating Strong DM Programs: Plan a Trip to Success [38 pages with one page sample in appendix; Updated 2011]. A workbook (with online training course) on effective program planning and evaluation.
http://www.ihs.gov/MedicalPrograms/Diabetes/HomeDocs/Training/WebBased/Basics/Creating/Workbook.pdf

Division of Diabetes Treatment and Prevention (IHS) [Updated 2011]. Information and resources to strengthen your clinical, public health, and community approach to diabetes treatment and prevention.
http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=trainingBasicsCreating

Joslin Clinical Guidelines [Updated May 2010]. A broad range of DM management guidelines including specific reference to DR.
http://www.joslin.org/managing_your_diabetes_joslin_clinical_guidelines.asp

National Eye Health Education Program (NEHEP) [Updated July 2009; cited July 2009]. An National Eye Institute site to increase awareness among healthcare professionals and the public of scientifically based health information that can be applied to preserving sight and preventing blindness. This is an online source for educational material and other resources to educate patients and the public about eye health and the importance of eye examinations. Several specialty sites are available, including one for DR. http://www.nei.nih.gov/NEHEP/

National Eye Institute Diabetes Retinopathy Homepage [Updated 2010]. An online source for patients and their families to search for general information about diabetic retinopathy.
http://www.nei.nih.gov/health/diabetic/retinopathy.asp

Native Diabetes Wellness Program [Updated 2010]. A CDC-sponsored program supporting AI/AN communities in developing effective strategies for DM care and prevention within their communities. http://www.cdc.gov/diabetes/projects/diabetes-wellness.htm

Examples of Current Best Practice Programs

Alaska Federal Health Care Access Network
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This statewide telemedicine program in Alaska provides remote access to care using a broad range of store and forward and real-time modalities. This includes a portable program of DR surveillance using the IHS-JVN (Joslin Vision Network) Teleophthalmology Program.

IHS/JVN (Joslin Vision Network) Teleophthalmology Program
Mark Horton, OD, MD
mark.horton@ihs.gov

This well-established, scalable, and centrally funded program uses validated telemedicine to increase compliance with DR surveillance standards of care in Indian country.

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This evidence-based program integrates web-based case management using patient data, patient behavioral health assessments, and education to optimize care.

Phoenix Indian Medical Center Visiting Professional Program
David Civic, MD
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This program has a long history of successful outreach to bring specialty services to locations with documented barriers to access.

Additional Contacts

Contacting other people involved in diabetes eye 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 tips on how to connect with others:

Area Diabetes Consultants. Contact information can be viewed at: http://www.ihs.gov/MedicalPrograms/diabetes/index.cfm?module=peopleADCDirectory.

Contact the Indian Health Service (IHS) Division of Diabetes Treatment and Prevention for ideas. http://www.ihs.gov/medicalprograms/diabetes/index.cfm?module=peopleDDTP

Review resources from the National Diabetes Education Program (NDEP). NDEP offers materials that will help your program get started, including information specifically for American Indians and Alaska Natives. You can access these resources at the website: http://www.ndep.nih.gov/.

PART 4 References

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