

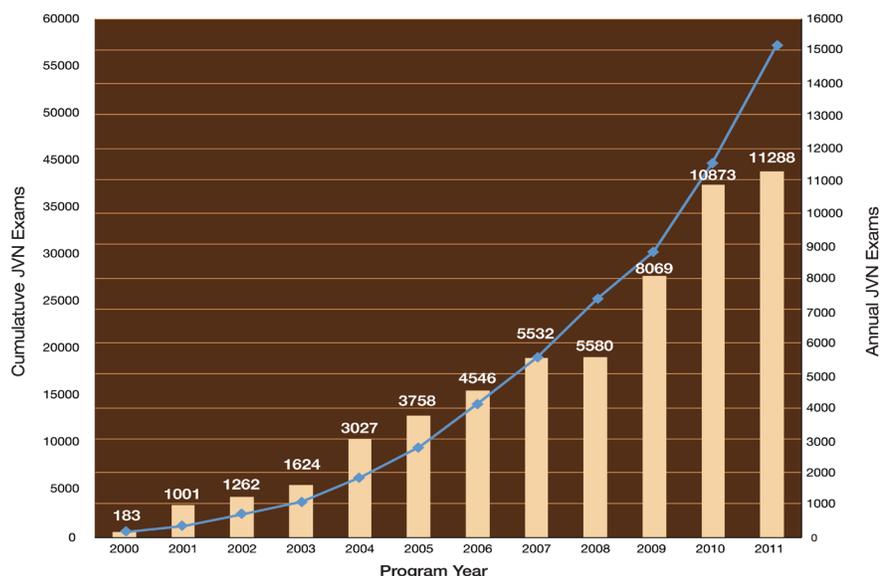
Diabetes is the leading cause of blindness among adults. American Indians and Alaska Natives (AI/AN) with diabetes are particularly susceptible to diabetes-related blindness, largely because only half of them get an annual diabetic eye exam. The Indian Health Service-Joslin Vision Network (IHS-JVN) Teleophthalmology Program was established in 2000 to use telemedicine technology to provide accurate, cost-effective annual eye exams to AI/AN.

## The IHS-JVN Teleophthalmology Program: Increasing access to eye care

The IHS-JVN Teleophthalmology Program addresses this gap in health care by using telemedicine technology to reduce the incidence and severity of diabetes-related vision loss. This innovative technology uses a digital camera with special computer software to transmit special photographs of a patient's eye to the National IHS-JVN Reading Center located in Phoenix. IHS eye doctors, specially trained by the Joslin Diabetes Center, interpret the images and send a report to the patient and primary care physician. The report includes the level of diabetic retinopathy, presence of any non-diabetic eye disease, and a recommended course of treatment.

**Blindness caused by diabetes can be prevented. Early diagnosis and treatment of diabetic retinopathy can reduce severe vision loss by more than 95%. The IHS-JVN Teleophthalmology Program is leading the way to improving early identification of AI/AN at risk of losing their sight.**

**Figure 1. IHS-JVN Retinal Exams, 2000-2011**



Source: JVN Program, 2011

**Results from the IHS-JVN Teleophthalmology Program**  
Since the inception of the IHS-JVN program in 2002, the number of annual retinopathy exams has increased. The IHS-JVN Teleophthalmology Program has provided nearly 60,000 eye exams in over 80 primary care clinics to AI/AN in 23 states.

## Proven effectiveness of the IHS-JVN Teleophthalmology Program

A four-year study of the program (Wilson et al., Diabetes Care 2005; 28:318-22) was conducted at a health care center serving 4,000 individuals with diabetes. This study demonstrated the program's effectiveness at increasing access to nationally accepted standards of eye care and treatment to prevent blindness:

- 50% increase in annual eye exams.
- 51% increase in laser treatments to prevent blindness.
- Lower cost with quality equal to or better than a normal eye exam.

**After nearly 60,000 eye exams across the nation, this program has proven its effectiveness in decreasing diabetes-related vision loss in AI/AN.**

## Spreading quality eye care throughout the Indian health system

The IHS-JVN program currently supports more than 80 sites in 23 states, providing retinal examinations and reducing vision loss due to diabetes. The program continues to develop the JVN technology and program operations with new features including:

- Mobile services to allow support of small or remote facilities.
- Enhanced imaging technology.
- Improved communication of reports and images with the IHS Electronic Health Record (EHR).
- Compliance with evolving regulations regarding meaningful use of the Electronic Health Record.

## What is diabetes-related blindness?

Virtually all people with diabetes eventually develop damage to blood vessels in their eyes. This condition is called diabetic retinopathy. The damage to the blood vessels can sometimes grow to dangerous levels, ultimately leading to blindness. People with diabetic retinopathy usually do not experience visual symptoms until it is too late and blindness has irreparably set in.

The good news is that timely annual eye exams of people with diabetes can help prevent diabetes-related blindness. These exams identify people at high risk for losing their sight who need to be treated to prevent vision loss. Furthermore, eye exams and laser treatment of high-risk individuals are very cost effective, saving hundreds of millions of dollars each year by preventing diabetes-related vision loss.



**Figure 2.** Patient receiving a diabetic eye exam through the IHS-JVN Teleophthalmology Program.