

The health and financial costs of diabetic retinopathy

CONTRIBUTORS

Mark Ruchman, MD Chief Medical Officer, Versant Health

Elizabeth Klunk, RN, BSN, CCM-R Senior Vice President, Medical Management, Versant Health



Deadly. Blinding. Costly. Epidemic.

These are the words used to describe diabetes, a devastating condition affecting more than 30 million Americans (about 9.4% of the population). Worse yet, the American Diabetes Association estimates that more than seven million people aren't even aware that they have this debilitating disease.

Diabetes 101

Diabetes is generally understood by physicians to be one of two types: Type 1 diabetes or type 2 diabetes.

Type 1 diabetes, sometimes referred to as insulin-dependent diabetes, is defined as an autoimmune condition that destroys insulin-producing cells in the pancreas. This results in your body producing little to no insulin, and typically requires insulin to control blood glucose levels.

Type 1 diabetes is often diagnosed in children, adolescents, or people in their early- to mid-20s. Of the 30 million people with diabetes, 1.25 million have type 1 diabetes.

The much more common form of the disease is type 2 diabetes. Unlike type 1, which appears to be autoimmune related, type 2 is arguably a lifestyle disease.

While there are unavoidable risk factors such as age and genetics, lifestyle choices play the largest role in the development of type 2 diabetes. Key among these are a low activity levels, smoking, and a diet high in refined starches, saturated and trans fats, and sugar.

The American Diabetes Association estimates that more than seven million people in the U.S. aren't even aware that they have diabetes.



People with type 1 diabetes often have symptoms such as unexplained weight loss or excessive hunger or thirst. As such, they are typically diagnosed via a blood glucose test. Where normal levels fall between 70-100 mg/dL, it's not uncommon to see type 1 diabetics with readings of 350+ mg/dL. Since they need insulin to reduce these levels (and because their bodies do not produce insulin), they must use insulin shots for the rest of their life.

Type 2 diabetes can be a bit trickier, as there are often few symptoms until the disease has progressed. Given this, there are two ways many people with type 2 diabetes learn they have the disease: (1) a high-fasting blood glucose test with a reading of 150 mg/dL or higher or (2) an eye exam.

During an eye exam, the eye doctor can examine the optic nerve, the retinal blood vessels, and the back of the eye. During this exam, the physician may notice leakages in the small capillaries in the retina, which often indicates diabetic retinopathy.

Even if diabetes has not been diagnosed, those telltale leakages are a sure sign that the patient has the disease. In fact, 20 percent of people first learn that they are diabetic as a result of an eye exam.¹

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From diabetes to blindness

Untreated diabetes can lead to a number of horrific consequences, including neuropathy, amputation, blindness, and even death. In the case of vision, diabetics are at risk for a number of issues, including glaucoma and cataracts, as well as a blinding condition called diabetic retinopathy.

Inflammation, obesity, and diabetes itself all increase the risk of developing diabetic retinopathy.² Diabetic retinopathy occurs when the amount of glucose in the blood is poorly controlled, causing tiny blood vessels in the retina to break, swell, leak, or grow abnormally.

The damage progresses through four phases. Early on, balloon-like swelling occurs in the retina's tiny blood vessels. These are microaneurysms. As the blood vessels become progressively blocked, the retina doesn't get the nourishment it needs and begins sending signals to grow more blood vessels.

The new blood vessels are more fragile, and can leak fluid or blood, causing patients to experience blurred vision, vision loss, and even blindness. These same changes may also occur in patients with poorly controlled blood pressure, in which case the condition is referred to as hypertensive retinopathy.

About 30 percent of people with diabetes have diabetic retinopathy; fortunately, early detection and treatment can reduce the risk of blindness from the disease by 95 percent.³ Recent advances offer hope to those at risk from the devastating effects of blindness due to diabetic retinopathy. In fact, a study from the journal *Diabetes Care* found that the risk of developing diabetic retinopathy was reduced by 76 percent and progression slowed by 54 percent in response to intensive treatment.⁴



Thirty percent of people with diabetes have diabetic retinopathy—with early detection and treatment, the risk of blindness is reduced by 95%



Early detection and intervention are key

Early intervention is central to successful treatment of diabetic retinopathy. In its early stages, when treatment has the greatest likelihood of success, patients are typically asymptomatic. Thus, a regular eye exam is a critical component of any health and wellness program to reduce blindness from this disease.

And yet, even with the threat of blindness, research shows that many diabetics skip that annual eye exam.⁵ In a 2017 study of 1,968 diabetics over the age of 40, researchers found that a mere 40 percent actually adhered to eye care recommendations. That means that despite the encouragement of doctors and health plans, 60 percent of known diabetics fail to get an annual eye examination.

Of course, once someone has developed severe diabetic retinopathy, they are more likely to follow their eye exam schedule.⁵ However, if they had gotten their annual eye exams, they likely could have detected issues sooner and started treatment earlier, before the condition became so severe.

At Versant Health, we have a sophisticated program of community outreach overseen by our healthcare experts whose only responsibility is to reduce blindness due to diabetic eye disease.



Managing diabetes and diabetic retinopathy

At Versant Health, there are several ways we support the overall health of our members with diabetes and strive to reduce the risk for and/or severity of diabetic eye disease.



PROVIDER PORTAL QUESTIONNAIRES

In our eye care professional (provider) portal, when claims are submitted, we ask a number of diabetes-related questions. For those members known to have diabetes, there are several retinopathyrelated questions the eye care professional needs to answer.

However, if no diabetes is indicated, there are a series of questions and a list of conditions indicative of diabetes—such as those noted earlier to help identify patients who may be at risk for the disease and require more intensive oversight.



DIABETES OUTREACH

We developed and administer this premium service to remind diabetic members to get a retinal exam every year to monitor and track the progression (or lack thereof) of their disease. By completing their eye exam annually, the quality measure (DRE) for diabetics is improved, which helps health plans increase their overall HEDIS and Star measures.

MEDICAL MANAGEMENT

For members whose health plans include medical management, we support them from diagnosis all the way through treatment, in some cases, actually helping to diagnose diabetes itself. That's because, when you have comprehensive vision through Versant Health, we see both medical **and** routine claims. This differs from members who have a routine vision plan only, as their vison insurance provider never sees the medical side of the claim.

For this reason, when we review claims from an eye care professional, we are able to use predictive analytics to proactively detect diabetes and/or diabetic retinopathy. For example, does the member have cataracts, yet is under the age of 40? This can be an indicator of diabetes. Similarly, neovascularization with no associated pathology or conditions is another sign of possible diabetes.

By aggregating the collective experience of our extensive eye care professional network, diabetic outreach program, and medical management team, we have the opportunity to create new insights into the management of diabetic eye disease. And that can save money as well as lives.



The high cost of diabetic retinopathy

Diabetes costs the U.S. an estimated \$327 billion annually, with \$237 billion coming from direct medical costs and \$90 billion coming from decreased productivity.⁶ And with nearly 30 percent of diabetics suffering from diabetic retinopathy,² it comes as no surprise that diabetes-related blindness costs can total more than \$500 million per year.⁷

In fact, one study found that medical costs for diabetics were significantly higher for those with diabetic retinopathy (DR) than those without DR.⁸ Specifically, those diabetics with even moderate diabetic retinopathy had notably higher medical costs than those associated with other diabetesrelated conditions, including neuropathy and chronic kidney disease.⁸

Finally, in a study looking at the costs associated with diabetic retinopathy in the Medicare population, researchers examined 5% Medicare claims data from 1997 through 2004.⁹ They identified 178,383 controls (people with diabetes but no evidence of diabetic retinopathy), 33,735 cases of non-proliferative diabetic retinopathy (NPDR), and 6,138 cases of proliferative diabetic retinopathy (PDR).

Researchers found that average annual Medicare payments for **all** care, as well as the average payments for ophthalmic care specifically, were significantly higher for both the NPDR and PDR cases. And of those, payments in both categories was substantially higher for PDR cases than NPDR.⁹

The takeaway? Diabetes and diabetic retinopathy take a toll on your wallet as well as your health. That's why early detection and early treatment are so critical.

And it's why Versant Health is so committed to driving member engagement and disease management proactively, working to exact behaviors desired from members with diabetes and/or diabetic retinopathy.

By working proactively to provide early treatment and possibly even early diagnosis to these debilitating conditions, Versant Health can affect better patient outcomes and lower costs overall.

The cost of diabetic retinopathy in the US



Annual costs of diabetesrelated blindness⁷



Patients with diabetic retinopathy have noticeably higher medical costs than those with other diabetes-related conditions⁸



Average annual Medicare payments for **all** care – not just ophthalmic care – are higher for patients with diabetic retinopathy⁹



About Versant Health

Versant Health is one of the nation's leading managed vision care companies serving more than 33 million members nationwide. Through our Davis Vision plans and Superior Vision plans, we help members enjoy the wonders of sight through healthy eyes and vision. Providing vision and eye health solutions that range from routine vision benefits to medical management, Versant Health has a unique visibility and scale across the total eye health value chain. As a result, members enjoy a seamless experience with access to one of the broadest provider networks in the industry and an exclusive frame collection. Commercial groups, individuals, third parties, and health plans that serve government-sponsored programs such as Medicaid and Medicare are among our valued customers.

For more information visit versanthealth.com.

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881 Elkridge Landing Road, Suite 300 Baltimore, MD 21090