

<b>Client</b>	HEALTH BENCHMARKS, INC. STANDARD ALGORITHM <i>Implemented for Blue cross Blue Shield of Texas</i>		
<b>Measure Title</b>	DIABETIC RETINAL EXAM		
<b>Disease State</b>	Diabetes, Retinopathy	<b>Indicator Classification</b>	Disease Management
<b>Strength of Recommendation</b>	B		
<b>Organizations Providing Recommendation</b>	American Diabetes Association American Academy of Ophthalmology		
<b>Clinical Intent</b>	To ensure that all diabetic members ages 18-75 receive at least 1 retinal or dilated eye exam during the measurement year.		
<b>Physician Specialties (suggested)</b>	Endocrinology, Family Practice, Geriatric Medicine, Internal Medicine, Nephrology		
<b>Background</b>	<p><b>Disease Burden</b></p> <ul style="list-style-type: none"> <li>• Diabetes is a chronic, serious disease that affects approximately 14.7 million Americans. This disease is the leading cause of new cases of blindness among adults aged 20-74.[1]</li> <li>• After living with diabetes for 20 years, almost all patients with type 1 diabetes and 50 to 80 percent of those with type 2 diabetes will manifest signs of retinopathy.[2]</li> <li>• Retinopathy is a major cause of morbidity in patients with diabetes. The incidence of blindness, for example, is 25 times higher in patients with diabetes than in the general population. Furthermore, diabetic retinopathy is the most common cause of blindness in middle-aged subjects, accounting for at least 12 percent of all new cases in the United States each year.[3]</li> </ul> <p><b>Reason for Indicated Intervention or Treatment</b></p> <ul style="list-style-type: none"> <li>• Evidence supports that screening and early treatment for diabetic retinopathy is associated with a decreased rate of visual loss.[4-6]</li> <li>• Current treatment for diabetic retinopathy may be 90% effective in preventing blindness.[7]</li> </ul> <p><b>Evidence Supporting Intervention or Treatment</b></p> <ul style="list-style-type: none"> <li>• In their cost-effectiveness analyses, Javitt and colleagues have reported that in patients with type 1 diabetes, annual screening (ophthalmoscopy with dilated pupils) for those without retinopathy and screening every six</li> </ul>		

months for those with retinopathy followed by guideline concordant treatment would result in a saving of 70,000 to 80,000 person-years of sight and 60 to 80 million dollars annually in the United States.[8] In patients with type 2 diabetes, the same screening program and treatment would result in saving over 94,000 person-years of sight and over 250 million dollars per year.[9]

- Appropriate screening and early detection of retinopathy preserves vision.[5, 10-12]
- At least three randomized controlled trials have reported that photocoagulation for diabetic retinopathy preserves vision.[13-15]

**Clinical Recommendations**

- The American Diabetes Association recommends:
  - Patients with type 1 diabetes should have a complete examination by an ophthalmologist or optometrist within three to five years after the onset of diabetes. Subsequent examinations should be repeated annually. Less frequent exams (every 2 to 3 years) may be considered if the screening is normal. More frequent exams may be indicated for patients with evidence of retinopathy.[16]
  - Patients with type 2 diabetes should have a complete examination by an ophthalmologist or optometrist beginning at the time of diagnosis. Subsequent examinations should be repeated annually. Less frequent exams (every 2 to 3 years) may be considered if the screening is normal. More frequent exams may be indicated for patients with evidence of retinopathy.[16]
- The American Academy of Ophthalmology recommends:
  - Patients with type I diabetes should have a dilated eye exam 5 years after the onset of diabetes. Patients with type II diabetes should have a dilated eye exam at onset of their diagnosis. A follow-up dilated eye exam is recommended yearly for both groups. Patients with abnormal findings on eye exam may need more frequent follow-ups.[7]

**Source** Healthcare Effectiveness Data and Information Set (HEDIS®) 2008 Technical Specification for Physician Measurement

**Denominator Definition** Continuously enrolled members ages 18-75 years by the end of the measurement year who were identified as having diabetes during the measurement year or year prior.

**Denominator Codes** Diabetes:  
 ICD-9 diagnosis code(s): 250.xx, 357.2x, 362.0x, 366.41, 648.0x  
 DRG code(s): 294, 295  
Outpatient/nonacute inpatient setting:  
 CPT-4 code(s): 92002-92014, 99201-99205, 99211-99215, 99217-99220, 99241-99245, 99301-99313, 99315, 99316, 99318, 99321-99328, 99331-99337, 99341-99345, 99347-99350, 99384-99387, 99394-99397, 99401-99404, 99411, 99412, 99420, 99429, 99455, 99456, 99499

UB revenue code(s): 0118, 0128, 0138, 0148, 0158, 019x, 051x, 052x, 055x, 057x-059x, 066x, 077x, 082x-085x, 088x, 0982, 0983

Acute inpatient or emergency room setting:

CPT-4 code(s): 99221-99223, 99231-99233, 99238, 99239, 99251-99255, 99261-99263, 99281-99285, 99291

UB revenue code(s): 010x, 0110-0114, 0119, 0120-0124, 0129, 0130-0134, 0139, 0140-0144, 0149, 0150-0154, 0159, 016x, 020x-022x, 045x, 072x, 080x, 0981, 0987

**Denominator  
Exclusion  
Definition**

Members in the denominator with a diagnosis of polycystic ovaries at any time in the member's history who did **NOT** have a face-to-face encounter with a diagnosis of diabetes in any setting during the measurement year or year prior, or members diagnosed with gestational diabetes or steroid-induced diabetes during the measurement year or year prior who did **NOT** have a face-to-face encounter with a diagnosis of diabetes in any setting during the measurement year or year prior.

**Denominator  
Exclusion Codes**

Polycystic ovaries

ICD-9 diagnosis code(s): 256.4x

Diabetes:

ICD-9 diagnosis code(s): 250.xx, 357.2x, 362.0x, 366.41, 648.0x

DRG code(s) : 294, 295

Outpatient/nonacute inpatient setting:

CPT-4 code(s): 92002-92014, 99201-99205, 99211-99215, 99217-99220, 99241-99245, 99301-99313, 99315, 99316, 99318, 99321-99328, 99331-99337, 99341-99345, 99347-99350, 99384-99387, 99394-99397, 99401-99404, 99411, 99412, 99420, 99429, 99455, 99456, 99499

UB revenue code(s): 0118, 0128, 0138, 0148, 0158, 019x, 051x, 052x, 055x, 057x-059x, 066x, 077x, 082x-085x, 088x, 0982, 0983

Acute inpatient or emergency room setting:

CPT-4 code(s): 99221-99223, 99231-99233, 99238, 99239, 99251-99255, 99261-99263, 99281-99285, 99291

UB revenue code(s): 010x, 0110-0114, 0119, 0120-0124, 0129, 0130-0134, 0139, 0140-0144, 0149, 0150-0154, 0159, 016x, 020x-022x, 045x, 072x, 080x, 0981, 0987

Steroid-induced or gestational diabetes

ICD-9 diagnosis code(s): 251.8x, 648.8x, 962.0x

**Numerator  
Definition**

Members who received at least 1 screening exam for diabetic retinal disease by an eye-care professional or had at least 1 office visit with an ophthalmologist or optometrist during the measurement year.\*

*\*Eye exams provided by eye care professionals are a proxy for dilated eye examinations because there is no administrative way to determine that a dilated exam was performed. (HEDIS 2008)*

**Numerator Codes**      Screening exam for diabetic retinal disease (including either retinal or dilated eye exam) conducted by an ophthalmologist or optometrist  
CPT-4 code(s) : 67028, 67030, 67031, 67036, 67038-67040, 67101, 67105, 67107, 67108, 67110, 67112, 67121, 67141, 67145, 67208, 67210, 67218, 67220, 67221, 67227, 67228, 92002, 92004, 92012, 92014, 92018, 92019, 92225, 92226, 92230, 92235, 92240, 92250, 92260  
ICD-9 surgical proc code(s): 14.1x-14.5x, 14.9x, 95.02-95.04, 95.11, 95.12, 95.16  
ICD-9 diagnosis code(s) : V72.0  
HCPCS code(s): S0620, S0621, S0625, S3000

Office visit with an optometrist or ophthalmologist  
CPT-4 code(s): 99203-99205, 99213-99215, 99242-99245

Screening exam for diabetic retinal disease (including either retinal or dilated eye exam) conducted by an eye care professional  
CPT category II code(s)\*: 2022F, 2024F, 2026F, 3072F (if available)

Negative retinal exam (no evidence of retinopathy) by an eye care professional according to an electronic result

\*The organization does not need to limit CPT category II codes to an optometrist or an ophthalmologist. These codes indicate an eye exam was performed by an eye care specialist. (HEDIS 2008)

**Physician Attribution Description**

**If client data does not contain PCP:**

Score all physicians (in the selected specialties) who saw the member during the measurement year

**If client data contains PCP:**

Score all primary care physicians who were assigned to the member during the measurement year.

**References**

1. CDC. *National Diabetes Surveillance System*. 2004 [cited 2004 November 17th]; Available from: <http://www.cdc.gov/diabetes/statistics/prev/national/figpersons.htm>
2. Frank, R.N., *Diabetic retinopathy*. N Engl J Med, 2004. **350**(1): p. 48-58.
3. Klein, R., et al., *Association of ocular disease and mortality in a diabetic population*. Arch Ophthalmol, 1999. **117**(11): p. 1487-95.
4. Javitt, J.C. and L.P. Aiello, *Cost-effectiveness of detecting and treating diabetic retinopathy*. Ann Intern Med, 1996. **124**(1 Pt 2): p. 164-9.
5. Malone, J.I., et al., *Prevalence and significance of retinopathy in subjects with type 1 diabetes of less than 5 years' duration screened for the diabetes control and complications trial*. Diabetes Care, 2001. **24**(3): p. 522-6.
6. Chew, E.Y., et al., *The long-term effects of laser photocoagulation*

- treatment in patients with diabetic retinopathy: the early treatment diabetic retinopathy follow-up study.* Ophthalmology, 2003. **110**(9): p. 1683-9.
7. *Diabetic Retinopathy. Preferred Practice Pattern.* American Academy of Ophthalmology.  
[http://www.aaopt.org/education/guidelines/ppp/upload/Diabetic\\_Retinopathy.pdf](http://www.aaopt.org/education/guidelines/ppp/upload/Diabetic_Retinopathy.pdf) 2003 [cited October 19, 2007].
  8. Javitt, J.C., et al., *Detecting and treating retinopathy in patients with type I diabetes mellitus. A health policy model.* Ophthalmology, 1990. **97**(4): p. 483-94; discussion 494-5.
  9. Javitt, J.C., et al., *Preventive eye care in people with diabetes is cost-saving to the federal government. Implications for health-care reform.* Diabetes Care, 1994. **17**(8): p. 909-17.
  10. Singer, D.E., et al., *Screening for diabetic retinopathy.* Ann Intern Med, 1992. **116**(8): p. 660-71.
  11. Fong, D.S., et al., *Retinopathy in diabetes.* Diabetes Care, 2004. **27 Suppl 1**: p. S84-7.
  12. Zoega, G.M., et al., *Screening compliance and visual outcome in diabetes.* Acta Ophthalmol Scand, 2005. **83**(6): p. 687-690.
  13. *Proliferative diabetic retinopathy: treatment with xenon-arc photocoagulation. Interim report of multicentre randomised controlled trial.* Br Med J, 1977. **1**(6063): p. 739-41.
  14. *Photocoagulation for diabetic maculopathy. A randomized controlled clinical trial using the xenon arc. British Multicentre Study Group.* Diabetes, 1983. **32**(11): p. 1010-6.
  15. *Photocoagulation for diabetic macular edema. Early Treatment Diabetic Retinopathy Study report number 1. Early Treatment Diabetic Retinopathy Study research group.* Arch Ophthalmol, 1985. **103**(12): p. 1796-806.
  16. *American Diabetes Association (ADA). Standards of medical care in diabetes. VI. Prevention and management of diabetes complications.* Diabetes Care, 2007. **30**(Suppl 1): p. S15-24.