

**American Academy of Ophthalmology/  
Physician Consortium for Performance Improvement®/ National Committee for Quality Assurance**

**Eye Care  
*Physician Performance Measurement Set***

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**Intended Audience and Patient Population:**

Any ophthalmologist caring for patients aged 18 years and older with primary open-angle glaucoma, age-related macular degeneration, cataracts and diabetic retinopathy

These clinical performance measures are designed for individual quality improvement. All of the measures may also be appropriate for accountability if appropriate sample sizes and implementation rules are achieved.

**Primary Open-angle Glaucoma**

Measure #1 – Optic Nerve Evaluation

**Age-related Macular Degeneration**

**Note:** Measure #2 – Antioxidant Supplement Prescribed/Recommended has been revised and is included in the Eye Care II measurement set.

Measure #3 – Dilated Macular Examination

**Cataracts**

Measure #4 – Assessment of Visual Functional Status

**Note:** Measure #5 – Documentation of Pre-surgical Axial Length, Corneal Power Measurement, and Method of Intraocular Lens Power Calculation and Measure #6 – Pre-surgical Dilated Fundus Evaluation have been removed from this measurement set

**Diabetic Retinopathy**

Measure #7 – Documentation of Presence or Absence of Macular Edema and Level of Severity of Retinopathy

Measure #8 – Communication with the Physician Managing the On-going Diabetes Care

**Eye Care**  
**Measure #1 Primary Open-Angle Glaucoma: Optic Nerve Evaluation**

This measure may be used as an Accountability measure.

Data Elements	Clinical Performance Measure	Feedback
<p><b>Per Patient, Per Year</b>            Yes/No – Patient had an optic nerve head evaluation</p> <p>Yes/No – Documentation of medical reason(s) for not performing an optic nerve head evaluation</p> <p><b>Sources</b>            Electronic medical record</p> <p>Paper medical record</p> <p>Flowsheet</p> <p>Administrative claims data*</p> <p>* adequate data source only if new codes are developed specific to the intent of this measure</p>	<p><b>Numerator:</b> Patients who have an optic nerve head evaluation during one or more office visits within 12 months</p> <p><b>Denominator:</b> All patients aged 18 years and older with a diagnosis of primary open-angle glaucoma</p> <p><b>Denominator exclusions:</b>            Documentation of medical reason(s) for not performing an optic nerve head evaluation</p> <p>Documentation of system reason(s) for not performing an optic nerve head evaluation</p> <p><b>Measure:</b> Percentage of patients aged 18 years and older with a diagnosis of primary open-angle glaucoma who have an optic nerve head evaluation during one or more office visits within 12 months</p>	<p><b>Per Patient</b>            Whether or not the patient aged 18 years and older with a diagnosis of primary open-angle glaucoma had an optic nerve head evaluation during one or more office visits within 12 months</p> <p><b>Per Patient Population</b>            Percentage of patients aged 18 years and older with a diagnosis of primary open-angle glaucoma who have an optic nerve head evaluation during one or more office visits within 12 months</p>
<p><b>The following clinical recommendation statement is quoted <u>verbatim</u> from the referenced clinical guidelines and represents the evidence base for the measure:</b>            The physical exam focuses on nine elements: visual acuity, pupils, slit-lamp biomicroscopy of the anterior segment, measurement of intraocular pressure (IOP), determination of central corneal thickness, gonioscopy, evaluation of optic nerve head and retinal nerve fiber layer, documentation of optic nerve head appearance, evaluation of fundus (through dilated pupil), and evaluation of the visual field. (Level A:II Recommendation for optic nerve head evaluation) (AAO<sup>1</sup>)</p>		
<p><b>Rationale for the measure:</b>            Changes in the optic nerve are one of two characteristics which currently define progression and thus worsening of glaucoma disease status (the other characteristic is visual field). There is a significant gap in documentation patterns of the optic nerve for both initial and follow-up care,<sup>2</sup> even among specialists.<sup>3</sup> Examination of the optic nerve head and retinal nerve fiber layer provides valuable structural information about glaucomatous optic nerve damage. Visible structural alterations of the optic nerve head or retinal nerve fiber layer and development of peripapillary choroidal atrophy frequently occur before visual field defects can be detected. Careful study of the optic disc neural rim for small hemorrhages is important, since these hemorrhages can precede visual field loss and further optic nerve damage. Data elements required for the measure can be captured and the measure is actionable by the physician.</p>		

Instructions: The system reason exclusion may be used if a physician is asked to report on this measure but is not the physician providing the primary management for primary open-angle glaucoma.

**Eye Care**  
**Measure # 3 Age-Related Macular Degeneration: Dilated Macular Examination**

This measure may be used as an Accountability measure.

Data Elements	Clinical Performance Measure	Feedback
<p><b>Per Patient, Per Year</b>            Yes/No – Patient had a dilated macular examination performed which included documentation of the presence or absence of macular thickening or hemorrhage AND the level of macular degeneration severity</p> <p>Yes/No- Documentation of medical reason(s) for not performing a dilated macular examination</p> <p>Yes/No – Documentation of patient reason(s) for not performing a dilated macular evaluation</p> <p><b>Sources</b>            Electronic medical record</p> <p>Paper medical record</p> <p>Flowsheet</p> <p>Administrative claims data*</p> <p>* adequate data source only if new codes are developed specific to the intent of this measure</p>	<p><b>Numerator:</b> Patients who had a dilated macular examination performed which included documentation of the presence or absence of macular thickening or hemorrhage AND the level of macular degeneration severity during one or more office visits within 12 months</p> <p><b>Denominator:</b> All patients aged 50 years and older with a diagnosis of age-related macular degeneration</p> <p><b>Denominator exclusion:</b>            Documentation of medical reason(s) for not performing a dilated macular examination</p> <p>Documentation of patient reason(s) for not performing a dilated macular examination</p> <p>Documentation of system reason(s) for not performing a dilated macular examination</p> <p><b>Measure:</b>            Percentage of patients aged 50 years and older with a diagnosis of age-related macular degeneration who had a dilated macular examination performed which included documentation of the presence or absence of macular thickening or hemorrhage AND the level of macular degeneration severity during one or more office visits within 12 months</p>	<p><b>Per Patient</b>            Whether or not the patient aged 50 years and older with a diagnosis of age-related macular degeneration had a dilated macular examination performed which included documentation of the presence or absence of macular thickening or hemorrhage AND the level of macular degeneration severity during one or more office visits within 12 months</p> <p><b>Per Patient Population</b>            Percentage of patients aged 50 years and older with a diagnosis of age-related macular degeneration who had a dilated macular examination performed which included documentation of the presence or absence of macular thickening or hemorrhage AND the level of macular degeneration severity during one or more office visits within 12 months</p>
<p><b>The following clinical recommendation statement is quoted <u>verbatim</u> from the referenced clinical guidelines and represents the evidence base for the measure:</b>            A stereo biomicroscopic examination of the macula should be completed. Binocular slit-lamp biomicroscopy of the ocular fundus is often necessary to detect subtle clinical clues of CNV. These include small areas of hemorrhage, hard exudates, subretinal fluid, or pigment epithelial elevation. (Level A:III Recommendation) (AAOError! Bookmark not defined.)</p>		

**Rationale for the measure:**

A documented complete macular examination is a necessary prerequisite to determine the presence and severity of AMD, so that a decision can be made as to the benefits of prescribing antioxidant vitamins. Further, periodic assessment is necessary to determine whether there is progression of the disease and to plan the on-going treatment of the disease, since several therapies exist that reduce vision loss once the advanced "wet" form of AMD occurs. While no data exists on the frequency or absence of regular examinations of the macula when patients are under the care of an ophthalmologist for AMD, parallel data for key structural assessments for glaucoma and cataract and diabetic retinopathy suggest that significant gaps are likely. Data elements required for the measure can be captured and the measure is actionable by the physician.

Instructions: The system reason exclusion may be used if a physician is asked to report on this measure but is not the physician providing the primary management for age-related macular degeneration.

Eye Care  
Measure #4 Cataracts: Assessment of Visual Functional Status

This measure may be used as an Accountability measure.

Data Elements	Clinical Performance Measure	Feedback
<p><b>Per Patient, Per Year</b> Yes/No –Patient was assessed for visual functional status</p> <p>Yes/No- Documentation of medical reason(s) for not assessing for visual functional status</p> <p><b>Sources</b> Electronic medical record</p> <p>Paper medical record</p> <p>Flowsheet</p> <p>Administrative claims data*</p> <p>* adequate data source only if new codes are developed specific to the intent of this measure</p>	<p><b>Numerator:</b> Patients who were assessed for visual functional status during one or more office visits within 12 months</p> <p>Medical record must include: Documentation that patient is operating well with vision or not operating well with vision based on discussion with the patient Or Documentation of use of a standardized scale or completion of an assessment questionnaire [e.g., VF-14, ADVS (Activities of Daily Vision Scale), VFQ (Vision Function Questionnaire)]</p> <p><b>Denominator:</b> All patients aged 18 years and older with a diagnosis of cataract(s)</p> <p><b>Denominator exclusion:</b> Documentation of medical reason(s) for not assessing for visual function status</p> <p>Documentation of system reason(s) for not assessing for visual function status</p> <p><b>Measure:</b> Percentage of patients aged 18 years and older with a diagnosis of cataracts who were assessed for visual functional status during one or more office visits within 12 months</p>	<p><b>Per Patient</b> Whether or not the patient aged 18 years and older with a diagnosis of cataract(s) was assessed for visual functional status during one or more office visits within 12 months</p> <p><b>Per Patient Population</b> Percentage of patients aged 18 years and older with a diagnosis of cataract(s) who were assessed for visual functional status during one or more office visits within 12 months</p>
<p>The following clinical recommendation statement is quoted <u>verbatim</u> from the referenced clinical guidelines and represents the evidence base for the measure: The initial physical examination should include visual acuity, refraction, ocular alignment and motility, pupil reactivity and function, IOP measurement, external examination, slit-lamp biomicroscopy, evaluation of the fundus through dilated pupil, assessment of general and mental health. (Level A:III Recommendation) (AAO<sup>4</sup>)</p>		

**Rationale for the measure:**

The primary reason for cataract surgery is to improve the patient's visual functional status and quality of life, since there is no scientific threshold for measures such as visual acuity when cataract surgery is or is not indicated on a population basis. Data indicate that actual measured performance on important activities varies linearly with visual acuity and contrast sensitivity,<sup>5</sup> two visual parameters directly affected by cataracts. The impact of such decrements varies from person to person. As such, it is vital to assess functioning related to vision prior to cataract surgery. Outcomes of cataract surgery, such as patient satisfaction, have been found to vary directly with the degree of pre-operative impairment.<sup>6,7</sup> Data elements required for the measure can be captured and the measure is actionable by the physician.

Instructions: The system reason exclusion may be used if a physician is asked to report on this measure but is not the physician providing the primary management for cataracts.

Eye Care

Measure #7 Diabetic Retinopathy: Documentation of Presence or Absence of Macular Edema and Level of Severity of Retinopathy

This measure may be used as an Accountability measure.

Data Elements	Clinical Performance Measure	Feedback
<p><b>Per Patient, Per Exam</b>                      Yes/No – Patient had a dilated macular or fundus exam performed which included documentation of the level of severity of retinopathy AND the presence or absence of macular edema</p> <p>Yes/No- Documentation of medical reason(s) for not performing a dilated macular or fundus exam</p> <p>Yes/No – Documentation of patient reason(s) for patient not receiving a dilated macular or fundus exam</p> <p><b>Sources</b>                      Electronic medical record</p> <p>Paper medical record</p> <p>Flowsheet</p> <p>Administrative claims data*</p> <p>* adequate data source only if new codes are developed specific to the intent of this measure</p>	<p><b>Numerator:</b> Patients who had a dilated macular or fundus exam performed which included documentation of the level of severity of retinopathy AND the presence or absence of macular edema during one or more office visits within 12 months</p> <p>Medical record must include:                      Documentation of the level of severity of retinopathy (eg, background diabetic retinopathy, proliferative diabetic retinopathy, nonproliferative diabetic retinopathy)                      AND                      Documentation of whether macular edema was present or absent</p> <p><b>Denominator:</b> All patients aged 18 years and older with a diagnosis of diabetic retinopathy</p> <p><b>Denominator Exclusions:</b>                      Documentation of medical reason(s) for not performing a dilated macular or fundus examination</p> <p>Documentation of patient reason(s) for not receiving a dilated macular or fundus examination</p> <p>Documentation of system reason(s) for not receiving a dilated macular or fundus examination</p> <p><b>Measure:</b> Percentage of patients aged 18 years and older with a diagnosis of diabetic retinopathy who had a dilated macular or fundus exam performed which included documentation of the level of severity of retinopathy AND the presence or absence of macular edema during one or more office visits within 12 months</p>	<p><b>Per Patient</b>                      Whether or not the patient aged 18 years and older with a diagnosis of diabetic retinopathy had a dilated macular or fundus exam performed which included documentation of the level of severity of retinopathy AND the presence or absence of macular edema during one or more office visits within 12 months</p> <p><b>Per Patient Population</b>                      Percentage of patients aged 18 years and older with a diagnosis of diabetic retinopathy who had a dilated macular or fundus exam performed which included documentation of the level of severity of retinopathy AND the presence or absence of macular edema during one or more office visits within 12 months</p>

The following clinical recommendation statement is quoted verbatim from the referenced clinical guidelines and represents the evidence base for the measure:

Since treatment is effective in reducing the risk of visual loss, detailed examination is indicated to assess for the following features that often lead to visual impairment: presence of macular edema, optic nerve neovascularization and/or neovascularization elsewhere, signs of severe NPDR and vitreous or preretinal hemorrhage. (Level A:III Recommendation) (AAO<sup>8</sup>)

**Rationale for the measure:**

Several level 1 RCT studies demonstrate the ability of timely treatment to reduce the rate and severity of vision loss from diabetes (Diabetic Retinopathy Study - DRS, Early Treatment Diabetic Retinopathy Study - ETDRS). Necessary examination prerequisites to applying the study results are that the presence and severity of both peripheral diabetic retinopathy and macular edema be accurately documented. In the RAND chronic disease quality project, while administrative data indicated that roughly half of the patients had an eye exam in the recommended time period, chart review data indicated that only 19% had documented evidence of a dilated examination. **Error! Bookmark not defined.** Thus, ensuring timely treatment that could prevent 95% of the blindness due to diabetes requires the performance and documentation of key examination parameters. The documented level of severity of retinopathy and the documented presence or absence of macular edema assists with the on-going plan of care for the patient with diabetic retinopathy. Data elements required for the measure can be captured and the measure is actionable by the physician.

Instructions: The system reason exclusion may be used if a physician is asked to report on this measure but is not the physician providing the primary management for diabetic retinopathy.

Eye Care

Measure #8 Diabetic Retinopathy: Communication with the Physician Managing Ongoing Diabetes Care

This measure may be used as an Accountability measure.

Data Elements	Clinical Performance Measure	Feedback
<p><b>Per Patient, Per Year</b>            Yes/No – Documented communication to the physician who manages the ongoing care of the patient with diabetes regarding the findings of the dilated macular or fundus exam</p> <p>Yes/No – Documentation of medical reason(s) for not communicating the findings of the dilated macular or fundus exam to the physician who manages the ongoing care of the patient with diabetes</p> <p>Yes/No – Documentation of patient reason(s) for not communicating the findings of the dilated macular or fundus exam to the physician who manages the ongoing care of the patient with diabetes</p> <p><b>Sources</b>            Electronic medical record</p> <p>Paper medical record</p> <p>Flowsheet</p> <p>Administrative claims data*</p> <p>* adequate data source only if new codes are developed specific to the intent of this measure</p>	<p><b>Numerator:</b> Patients with documentation, at least once within 12 months of the findings of the dilated macular or fundus exam via communication to the physician who manages the patient's diabetic care</p> <p>Communication may include:            Documentation in the medical record indicating that the results of the dilated macular or fundus exam were communicated (e.g., verbally, by letter) with the physician managing the patient's diabetic care            Or            A copy of a letter in the medical record to the physician managing the patient's diabetic care outlining the findings of the dilated macular or fundus exam.</p> <p><b>Denominator:</b> All patients aged 18 years and older with a diagnosis of diabetic retinopathy who had a dilated macular or fundus exam performed</p> <p><b>Denominator exclusions:</b>            Documentation of medical reason(s) for not communicating the findings to the physician who manages the ongoing care of the patient with diabetes</p> <p>Documentation of patient reason(s) for not communication the findings to the physician who manages the ongoing care of the patient with diabetes</p> <p>Documentation of system reason(s) for not communication the findings to the physician who manages the ongoing care of the patient with diabetes</p> <p><b>Measure:</b> Percentage of patients aged 18 years and older with a diagnosis of diabetic retinopathy who had a dilated macular or fundus exam performed with documented communication to the physician who manages the ongoing care of the patient with diabetes regarding the findings of the macular or fundus exam at least once within 12 months</p>	<p><b>Per Patient</b>            Whether or not the patient aged 18 years and older with a diagnosis of diabetic retinopathy who had a dilated macular or fundus exam performed had documented communication to the physician who manages the ongoing care of the patient with diabetes regarding the findings of the macular or fundus exam at least once within 12 months</p> <p><b>Per Patient Population</b>            Percentage of patients aged 18 years and older with a diagnosis of diabetic retinopathy who had a dilated macular or fundus exam performed with documented communication to the physician who manages the ongoing care of the patient with diabetes regarding the findings of the macular or fundus exam at least once within 12 months</p>

**The following clinical recommendation statement is quoted verbatim from the referenced clinical guidelines and represents the evidence base for the measure:**

Communicate with the attending physician, e.g., family physician, internist, or endocrinologist, regarding eye findings. (Level A:III Recommendation) (AAO<sup>8</sup>)

While it is clearly the responsibility of the ophthalmologist to manage eye disease, it is also the ophthalmologist's responsibility to ensure that patients with diabetes are referred for appropriate management of their systemic condition. It is the realm of the patient's family physician, internist or endocrinologist to manage the systemic diabetes. The ophthalmologist should communicate with the attending physician. (Level A:III Recommendation). (AAO<sup>8</sup>)

**Rationale for the measure:**

The primary care physician should be aware of the patient's dilated eye examination and severity of retinopathy to manage the on-going diabetes care. Such communications is important in assisting the primary care physician to better manage the diabetes. Several studies have shown t hat better management of diabetes is directly related to lower rates of development of diabetic eye disease (Diabetes Control and Complications Trial - DCCT, UK Prospective Diabetes Study - UKPDS). Data elements required for the measure can be captured and the measure is actionable by the physician.

Instructions: The system reason exclusion may be used if a physician is asked to report on this measure but is not the physician providing the primary management for diabetic retinopathy.

## References for Clinical Recommendations for Eye Care

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- <sup>1</sup> American Academy of Ophthalmology. Preferred Practice Patterns Committee. *Primary Open-Angle Glaucoma. Limited Revision*. 2005.
- <sup>2</sup> Fremont AM, et al. Patterns of Care for Open-angle Glaucoma in Managed Care. *Arch Ophthalmol*. 2003;121:777-783.
- <sup>3</sup> Lee PP, et al. A Multicenter, Retrospective Pilot Study of Resource Use and Costs Associated With Severity of Disease in Glaucoma. *Arch Ophthalmol*. 2006;124:12-19.
- <sup>4</sup> American Academy of Ophthalmology. Preferred Practice Patterns Committee. *Cataract in the Adult Eye*. 2001.
- <sup>5</sup> West SK, Rubin GS, Broman AT, Muñoz B, Bandeen-Roche K, Turano K for the SEE Project Team. How does visual impairment affect performance on tasks of everyday life?: The SEE Project. *Arch Ophthalmol*. 2002;120:774-780.
- <sup>6</sup> Schein OD, et al. Predictors of outcome in patients who underwent cataract surgery. *Ophthalmology*. 1995; 102:817-823.
- <sup>7</sup> Tielsch JM, et al. Preoperative functional expectations and postoperative outcomes among patients undergoing first eye cataract surgery. *Arch Ophthalmol*. 1995;113:1312-1318.
- <sup>8</sup> American Academy of Ophthalmology. Preferred Practice Patterns Committee. *Diabetic Retinopathy*. 2003.

### AAO Level Definitions

Level A, defined as most important

Level B, defined as moderately important

Level C, defined as relevant but not critical

Level I includes evidence obtained from at least one properly conducted, well-designed, randomized, controlled trial. It could include meta-analyses of randomized controlled trials.

Level II includes evidence obtained from the following:

Well-designed controlled trials without randomization,

Well-designed cohort or case-control analytic studies, preferably from more than one center,

Multiple-time series with or without the intervention

Level III includes evidence obtained from one of the following:

Descriptive studies,

Case reports,

Reports of expert committees/organization,

Expert opinion (e.g., Preferred Practice Patterns panel consensus)