

Gaps in Care (compared to recommended guidelines) for the Practice Emphasis Areas:

Cataract/Anterior Segment and Comprehensive Ophthalmology:

1. Reduce post-operative complications in patients with cataract surgery

In patients without ocular co-morbidities, the rate of postoperative complications requiring a return to the operating room should be close to 0%. Studies in the literature have shown that rates are about 2% or more in actual practice. A performance measure has been developed by the American Medical Association-Physician Consortium for Performance Improvement: and approved for the 2010 Medicare Physician Quality Reporting Initiative: Percentage of patients aged 18 years and older with a diagnosis of uncomplicated cataract who had cataract surgery and had any of a specified list of surgical procedures in the 30 days following cataract surgery which would indicate the occurrence of any of the following major complications: retained nuclear fragments, endophthalmitis, dislocated or wrong power IOL, retinal detachment, or wound dehiscence.

2. Enhance likelihood of 20/40 visual acuity outcome after cataract surgery

In patients without ocular co-morbidities, the rate of those achieving 20/40 visual acuity outcome after cataract surgery should be 100%. Studies in the literature have shown that rates are about 86 – 98% in actual practice. A performance measure has been developed by the American Medical Association-Physician Consortium for Performance Improvement: and approved for the 2010 Medicare Physician Quality Reporting Initiative: Percentage of patients aged 18 years and older with a diagnosis of uncomplicated cataract who had cataract surgery and no significant ocular conditions impacting the visual outcome of surgery and had best-corrected visual acuity of 20/40 or better (distance or near) achieved within 90 days following the cataract surgery.

3. Perform appropriate preoperative testing prior to cataract surgery

To ensure that cataract surgery is appropriate and safe, appropriate examinations and tests should be performed. These include the need to select the appropriate IOL to reduce “wrong power IOL” surgery through axial length measurements, determining the likelihood that the patient has a reasonable outcome after surgery (functional indications), and that no other conditions that would impact either the appropriateness or safety of surgery through a comprehensive eye examination. Results from the Cataract Appropriateness Project from RAND and additional studies for AHCP at RAND suggest that the gap for a comprehensive pre-operative assessment range from 10 to 30+%. A performance measure has been developed by the American Medical Association-Physician Consortium for Performance Improvement: and approved for the 2010 Medicare Physician Quality Reporting Initiative: Percentage of patients aged 18 years and older with a procedure of cataract surgery with IOL placement who received a comprehensive preoperative assessment of 1) dilated fundus exam, 2) axial length, corneal keratometry measurement, and method of IOL power calculation; and 3) functional or medical indication(s) for surgery prior to the cataract surgery with IOL placement within 12 months prior to cataract surgery

Cornea/External Disease:

Through consultation with the appropriate subspecialty societies, these gaps in care and community practice have been identified that if implemented, would improve the quality of care by ophthalmologists.

1. Perform a comprehensive assessment of dry eye patients

Documentation of environmental factors, medical history, and medications that contribute to dry eye, documentation of physical examination of the lids, lacrimal system, and ocular surface to include an assessment of tear function and classification of disease severity as mild, moderate or severe are important in the comprehensive assessment of patients with dry eye.

2. Reduce symptoms or signs or documentation of a plan of care for dry eye patients

Documentation of reduction of one or more of the following: 1) subjective dry eye symptoms; 2) vital dye staining of the ocular surface and 3) severity level or documentation of a plan of care are important for the improvement of care of patients with dry eye.

3. Perform a comprehensive assessment of blepharitis patients

Documentation of environmental factors, medical history, and medications that contribute to blepharitis, documentation of physical examination of the lids, lacrimal system, and ocular surface, and classification of the disease as staphylococcal, seborrheic, or meibomian gland dysfunction are relevant in the comprehensive assessment of patients with blepharitis.

4. Reduce symptoms or signs or documentation of a plan of care of the blepharitis patients

Documentation of reduction of subjective symptoms or objective findings or documentation of a plan of care are important for the improvement of care of patients with dry eye.

5. Prescribe topical antimicrobial hourly or more frequently for initial treatment of central corneal ulcer.

There is literature indicating that community treatment of ulcers often falls below the standard of hourly or more frequent drops, and there is also literature indicating that suboptimal initial therapy is a risk factor for poor outcomes.

6. Consider/discuss prophylaxis with oral antiviral medications with patients with a history of recurrent herpes simplex ocular disease.

Acyclovir has been proven to reduce recurrences of HSV keratitis in a large NIH-funded clinical trial, but this may not always be considered in the treatment of patients with recurrent herpes simplex ocular disease.

7. Evaluate/recommend consultation for systemic autoimmune disease/vasculitis for patients with peripheral ulcerative keratitis or scleritis.

Many patients with peripheral ulcerative keratitis or scleritis may have an associated systemic autoimmune disease and a systemic work-up or referral made to an internist or rheumatologist should be considered. Identification of an underlying systemic autoimmune disease/vasculitis in

patients with peripheral ulcerative keratitis or scleritis is critical. If there are associated systemic illnesses that are undiagnosed and untreated, early mortality can occur in these patients.

Glaucoma:

1. **Perform optic nerve head evaluation for patients with primary open-angle glaucoma**

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 even among specialists. A performance measure has been developed by the American Medical Association-Physician Consortium for Performance Improvement: and approved for the 2010 Medicare Physician Quality Reporting Initiative: 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

2. **Reduce intraocular pressure in patients with primary open-angle glaucoma**

Reduction of intraocular pressure has been strongly associated with the reduction of risk of progression of primary-open angle glaucoma. However, there are significant gaps in the care of patients with glaucoma in the community. Based on studies in the literature reviewing documentation of IOP achieved under care, the gap could be as great as 50% or more in the community of ophthalmologists and optometrists treating patients with primary open-angle glaucoma. A performance measure has been developed by the American Medical Association-Physician Consortium for Performance Improvement: and approved for the 2010 Medicare Physician Quality Reporting Initiative: Percentage of patients aged 18 years and older with a diagnosis of primary open-angle glaucoma whose glaucoma treatment has not failed (the most recent IOP was reduced by at least 15% from the pre-intervention level) OR if the most recent IOP was not reduced by at least 15% from the pre-intervention level a plan of care was documented within 12 months.

3. **Counsel patients with glaucoma (or caregiver) about care management**

Involvement of patients and their caregivers in the management of glaucoma is critical. However, there are indications of significant gaps in care. Patient adherence and compliance to therapy are no better in glaucoma than in other chronic diseases, suggesting that most patients are not fully compliant or adherent to their use of medications. In addition, several studies indicate that half of patients with OAG in the Medicare population will have at least one 18 month gap in their continuous care over a 5 year time period (Lee et al, Ophthalmology, 2003), supporting the findings of several single site studies indicating that many patients have failed to keep scheduled appointments. A performance measure has been developed by the American Medical Association-Physician Consortium for Performance Improvement::Percentage of patients aged 18 years and older with a diagnosis of primary open-angle glaucoma or their caregiver who were counseled within 12 months about 1) the potential impact of glaucoma on their visual functioning and quality of life, and 2) the importance of treatment adherence.

4. **Perform gonioscopy in patients with angle-closure glaucoma**

There appears to be a significant gap in documentation of the angle. This is most important in patients with narrow angles or narrow angle suspect. This would improve the quality of patient care.

5. **Perform or review corneal thickness measurement in patients with glaucoma suspect and ocular hypertension**

Corneal thickness measurement is an important part of the glaucoma evaluation. The Ocular Hypertension Study clearly documented the importance of measuring corneal thickness in patients with ocular hypertension. Although this is a one-time measurement for most patients, the value is reviewed at every visit in order to better understand its effect on intraocular pressure and clinical course.

Neuro-Ophthalmology/Orbit:

Through consultation with the appropriate subspecialty societies, these gaps in care and community practice have been identified that if implemented, would improve the quality of care by ophthalmologists.

1. **Counsel patients about use of intravenous corticosteroids upon diagnosing optic neuritis**

80% of people with Multiple Sclerosis (MS) will have at least one episode of optic neuritis, an inflammation of the optic nerve, which results in painful loss of vision. Prompt treatment can result in faster recovery and as MS is a chronic disease, patient knowledge and motivation is vital to ensuring optimal management however, suitable information is not always readily available.

2. **Ordering a magnetic resonance imaging scan with contrast of the brain in optic neuritis patients without a prior history of demyelinating symptoms**

Optic neuritis is a clinical diagnosis, without requiring additional testing for confirmation. However, MRI with contrast of the brain (+/- orbits) is essential for guiding the treatment regimen with intravenous corticosteroids and follow-up immunomodulating therapy in patients without a prior history of demyelinating symptoms. A discussion regarding the relationship of idiopathic demyelinating optic neuritis to multiple sclerosis is often necessary during the course of follow-up in these patients.

3. **Utilize magnetic resonance imaging testing appropriately**

The appropriate use of diagnostic testing is a timely and relevant topic in health care delivery today. Appropriate indications for MRI testing include: Demyelinating disease; Infarct; Neoplasia; Inflammation; Infection; Structural/developmental abnormalities; Nonmetallic foreign body; Extraocular muscle inflammation or infiltration pathology; Parasellar lesions; and Posterior fossa pathology

Oculoplastic/Orbit:

Through consultation with the appropriate subspecialty societies, these gaps in care and community practice have been identified that if implemented, would improve the quality of care by ophthalmologists.

1. Prior to ptosis surgery, document MRD1 (marginal reflex distance 1), MRD2 (marginal reflex distance 2), and BLF (Burke levator function).

For performance of safe and appropriate surgery in ptosis patients, appropriate measurements are needed in the pre-operative evaluation of patients.

2. Advise smokers of risk for patients with thyroid eye disease

Not all individuals are screened for tobacco use or counseled to stop smoking. A meta-analysis of 7 studies found that physician advice to quit smoking is associated with a 30% increase in cessation rates.

3. Screen or refer for screening for skin cancer patients with periorbital skin malignancy

The Consensus Statement of the American College of Preventive Medicine recommends screening for high risk patients.

Pediatric Ophthalmology/Strabismus:

Through consultation with the appropriate subspecialty societies, these gaps in care and community practice have been identified that if implemented, would improve the quality of care by ophthalmologists.

1. Perform a cycloplegic refraction and dilated fundus exam in infants and children with acquired esotropia

A dilated fundus examination is usually required to detect structural abnormalities and cycloplegia is necessary to accurately determine hyperopic refractive error in the highly accommodative pediatric eye.

2. Appropriately prescribe spectacles to children in the amblyopic age range

Prescribing of eyeglasses to children with refractive errors that either place those children at risk for amblyopia or limit their ability to function is essential. However, there is data that suggests that many children receive unnecessary eyeglasses from providers who may not understand the proper medical indications for placing children in glasses or who may have a secondary financial gain from dispensing glasses they prescribe. Recent data by Donahue et. Al. in a large scale photoscreening study suggests a wide discrepancy in the rate of glasses prescribing to normal children who do not have clinically significant refractive errors.

3. Perform cycloplegic retinoscopy/refraction in patients with amblyopia

Patients with amblyopia should receive a cycloplegic refraction either by retinoscopy or by subjective refraction as a determination of refractive errors is important in the diagnosis and

treatment of this condition. An informal survey of pediatric ophthalmologists indicates that lack of a cycloplegic retinoscopy/refraction is a common gap in care.

4. Assess visual acuity in each eye using an age-appropriate testing technique

The method of evaluating visual acuity will vary according to the age of the child and level of cooperation. Distance visual acuity should be determined monocularly whenever possible. Under ideal circumstances, visual acuity testing conditions should be standardized in each examination room and at each visit so that the same viewing distance and lighting conditions are used.

5. Perform ocular motility examinations on new pediatric patients

Ocular alignment is assessed by using the corneal light reflection, the binocular red reflex (Brückner) test, or the cover test. Cover/uncover and alternate cover tests in primary gaze at distance and near accommodative targets are utilized when feasible; these tests require the patient's cooperation and interaction with the examiner in addition to sufficient vision to fixate on the target. Ocular versions and ductions should be tested even in the young infant.

6. Perform dilated fundus examination on new patients with strabismus

Retinal or optic nerve abnormalities may lead to strabismus. Fundus examination is preferably performed with the binocular indirect ophthalmoscope, at which time the relationship between the macula and optic nerve can be assessed.

7. Counsel patients with amblyopia regarding treatment and side effects

Outcome is dependent on patient compliance. Compliance is often compromised because the child may not like the patch, eyeglasses, or drops, or using the amblyopic eye. Parents/caregivers of pediatric patients who understand the diagnosis and rationale for treatment are more likely to adhere to treatment recommendations. In older children, it is also important to obtain their commitment to the proposed treatment program. Written instructions are helpful for the parent/caregiver to understand, remember, and reinforce the plan, because enhanced communication produces enhanced results.

Refractive Management/Intervention:

Through consultation with the appropriate subspecialty societies, these gaps in care and community practice have been identified that if implemented, would improve the quality of care by ophthalmologists.

1. Provide appropriate preoperative counseling about risks and benefits of LASIK

Refractive surgery has a very high rate of success, compared to other types of elective surgery. An international survey of the literature reported a 95% patient satisfaction rate for LASIK surgery. However, there are reports of patient dissatisfaction and reduced quality of vision after LASIK. Appropriate preoperative counseling about the risks and benefits can enhance patient understanding and patient expectations about outcome.

2. Provide appropriate postoperative evaluation and management of quality of vision issues in patients with LASIK surgery

Refractive surgery has a very high rate of success, compared to other types of elective surgery. However, there are reports of reduced quality of vision after LASIK. Appropriate postoperative evaluation and management of quality of vision issues can reduce the likelihood of reduced quality of vision after refractive surgery.

3. Provide appropriate counseling to new patients with contact lenses.

New contact lens patients should receive instructions on their prescribed lens replacement regiment, wear schedule, proper lens insertion, removal and lens care. In addition, these patients should be cautioned to report a red eye or decreased vision to the ophthalmologist.

Retina/Vitreous:

1. Perform a dilated macular examination in patients with age-related macular degeneration

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. A performance measure has been developed by the American Medical Association-Physician Consortium for Performance Improvement: and approved for the 2010 Medicare Physician Quality Reporting Initiative: 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

2. Perform a dilated macular or fundus examination in patients with diabetic retinopathy

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.. 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. A performance measure has been developed by the American Medical Association-Physician Consortium for Performance Improvement: and approved for the 2010 Medicare Physician Quality Reporting Initiative:

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.

3. Communicate the results of the eye exam with the physician managing the ongoing care of the patient with diabetes

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 that 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). There appears to be a significant gap in current communications. A performance measure has been developed by the American Medical Association-Physician Consortium for Performance Improvement: and approved for the 2010 Medicare Physician Quality Reporting Initiative: 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

4. Counsel patients with age-related macular degeneration on benefits/risks of AREDS antioxidant formulation

Antioxidant vitamins and mineral supplements help to reduce the rate of progression to advanced AMD for those patients with intermediate or advanced AMD in one eye. However, surveys have demonstrated that there is significant lag in adoption of study findings, and reports from meetings have noted up to a 50% gap in supplement prescription to appropriate patients. A performance measure has been developed by the American Medical Association-Physician Consortium for Performance Improvement: and approved for the 2010 Medicare Physician Quality Reporting Initiative: Percentage of patients aged 50 years and older with a diagnosis of age-related macular degeneration or their caregiver(s) who were counseled within 12 months on the benefits and/or risks of the AREDS formulation for preventing progression of AMD

5. Perform a peripheral fundus examination with scleral depression in patients with symptoms of posterior vitreous detachment.

There are no symptoms that can reliably distinguish a PVD with an associated retinal break from a PVD without an associated retinal break; therefore, a peripheral retinal examination is required. The preferred method of evaluating peripheral vitreoretinal pathology is with indirect ophthalmoscopy combined with scleral depression.

6. Perform intravenous fundus fluorescein angiography in patients with age-related macular degeneration with symptoms of new metamorphopsia or unexplained blurred vision.

Intravenous fundus fluorescein angiography is indicated when the patient complains of new metamorphopsia or has unexplained blurred vision. If choroidal neovascularization is suspected on the basis of new symptoms or ocular findings, fluorescein angiography should be performed and interpreted expeditiously by an individual experienced in managing patients with neovascular

AMD. Extrafoveal or juxtafoveal lesions can extend rapidly, causing irreversible damage, and subfoveal lesions may grow too large, precluding any treatment benefit.

7. Perform panretinal photocoagulation in patients with proliferative diabetic retinopathy.

The risk of severe visual loss among patients with high-risk PDR can be reduced substantially by means of panretinal photocoagulation as described in the DRS and ETDRS. Most patients with high-risk PDR should receive laser panretinal photocoagulation treatment expeditiously.

Uveitis:

Through consultation with the appropriate subspecialty societies, these gaps in care and community practice have been identified that if implemented, would improve the quality of care by ophthalmologists.

1. Provide appropriate treatment for patients with toxoplasmic retinochoroiditis

Surveys of ophthalmologists in the literature have identified gaps and wide variations in treatment patterns of patients with toxoplasmic retinochoroiditis. Pyrimethamine has been classically employed which can be combined with sulfadiazine or triple-sulfa, azithromycin, or clindamycin, and is usually given with leucovorin to mitigate hematologic toxicity. Trimethoprim-sulfamethoxazole is increasing in use and can be combined with clindamycin for increased efficacy.

2. Communicate with the primary care physician or other specialist providing care for the patient

An important area of care is communication and coordination among physicians, otherwise, there can be gaps and missed opportunities. Uveitis specialists care for many patients with systemic problems and immune diseases which may be treated by the patients' primary care physicians or other specialists.