Optimum VA

NAVAO Newsletter Spring 2006

News and Notes

99202

Editor's Box

Web Links

Optometrists and Patients Oppose S.1955

Termed the Health Insurance Marketplace Modernization and Affordability Act of 2005, **S. 1955** is designed to create health plans exempt from state laws aimed at providing coverage for tens of millions of small business employees. In its current form, **S. 1955** would allow these new plans to discriminate against Doctors of Optometry as providers of medical eye care services and to exclude them from medical networks. The AOA views this bill as extremely harmful for ODs and patients, and is at the center of efforts in Washington, DC to either change or defeat it.

Follow the links below for more details.

S. 1955 Fact Sheet
AOA's Stop S.1955 Leglislative Resource Center
S.1955 Text

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Glaucoma Therapy Discussion and Compliance Issues

The article below highlights issues with glaucoma therapy. It is informative and summarizes current treatment modalities and medical therapy concerns:

The assessment of IOP is essential in the management of glaucoma. Robert N. Weinreb, MD, suggested that a goal of IOP reduction is to blunt IOP peaks, and asked the question, “Is 24-hour measurement of IOP more important than we have thought?” “Most studies have measured IOP only in the sitting position,” he said. As he pointed out, we do not sleep in the sitting position, but rather in a supine position. His group has been measuring IOP in their 24-hour sleep lab in healthy, untreated ocular hypertensive and glaucoma patients in the “habitual positions:” sitting during the waking hours and supine during sleeping hours." In the habitual position,” he said, “IOP is actually higher at night than it is during the daytime period in both healthy individuals and in glaucoma patients.”6

“As peak IOP occurs at a time outside of office hours more than two-thirds of time, we often cannot detect the peak during the course of our daily clinical practice.” Weinreb said there are at least two options to facilitate recognition of peak IOP. First, 24-hour IOP profiles can be obtained on all of our patients. Alternatively, a test can be performed during office hours to predict circadian IOP peaks.7 For the vast majority of clinicians, it is not feasible to measure IOP outside of office hours. Moreover, there is no method for reliably estimating peak IOP from office measurements. Therefore, the effectiveness of anti-glaucoma medications for lowering IOP throughout the day and night need to be considered,” Weinreb said. “Beta blockers reduce daytime flow but not nocturnal flow, and have little effect on nocturnal IOP.” Prostaglandin analogues increase uveoscleral outflow and appear to lower IOP throughout the 24-hr period.

In a prospective crossover comparison of 24-hour IOP reduction of timolol versus latanoprost in ocular hypertensive and glaucoma patients performed by with John Liu, PhD at the UCSD Hamilton Glaucoma Center sleep lab, timolol lowered IOP only during the day, whereas latanoprost lowered IOP consistently for 24 hours and was more effective than timolol during the day. 8
David Greenfield, MD, agreed that these differences in IOP lowering efficacy between beta-blockers and prostaglandins are clinically very important. “We’re very familiar with the efficacy and adverse effects of beta blockers. They have represented the mainstay of therapy for glaucoma for 25 years. But has their time come? Should we consider retiring the BB as initial monotherapy for patients with glaucoma?”

Greenfield pointed out that some of the side effects of beta-blockers are merely annoying, while others can be life-threatening. “It isn’t always evident during an office visit which patients are experiencing exercise intolerance, or sexual dysfunction, and we rarely ask about these sorts of adverse effects.”(Figure 4) But they do occur, he said, and they can significantly impact quality of life for glaucoma patients.

Prostaglandins, on the other hand, offer a side effect profile limited mostly to tolerability issues, mild hyperemia, iris darkening, and lash growth being the most common. “And,” he pointed out, “in two of the three Phase III comparisons

of latanoprost to timolol, latanoprost had superior IOP reduction to timolol." 9, 10, 11

With better efficacy and better safety, he suggested that prostaglandins make better first-line drugs than beta-blockers for most patients. He added that beta-blocker monotherapy might still be a reasonable choice for healthy patients unable to afford prostaglandin therapy since generic beta-blockers are relatively inexpensive, and for patients with inflammatory glaucoma, recent intraocular surgery, or previously complicated cataract extraction.

Prostaglandins have become very popular since first appearing in 1996, and they are not the only new drugs to reach the U.S. marketplace recently. According to Kuldev Singh, MD, "There has been an explosion of new drugs in recent years, with far more agents introduced in the past 20 years than in the preceding 100 years."

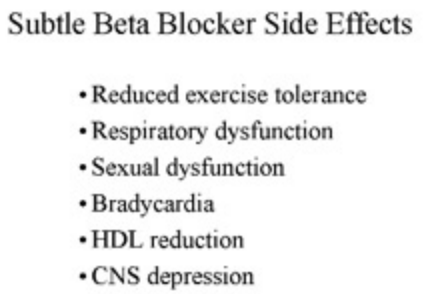

Figure 4

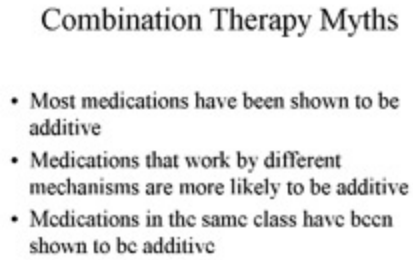

Figure 5

In fact, he said, in constructing a treatment regimen for glaucoma patients using the concept of maximal tolerated medical therapy (MMT), it was recently estimated that there are over 56,000 different unique combinations of drugs available. 12

"This is vastly different from the 1980s," Singh said, "when MMT meant a beta blocker, a miotic, an epinephrine-based compound, and in some patients an oral CAI." With five contemporary classes of IOP-lowering drugs available at the present time, he suggested that the concept of MMT might need to be modified to reflect the fact that trying all possible combinations is rarely practical.
"The concept of Optimal Medical Therapy (OMT) makes more sense." He explained, "OMT is reached when the marginal benefit of further IOP lowering

with an additional medication is outweighed by additional side effects and cost associated with that medication."

While the drug combination that makes up OMT will differ for each individual patient, he did offer a few insights into drug selection (Figure 5). "It is a myth that drugs that work by different mechanisms are more likely to be additive," he said. For example, many people think that an outflow-enhancing drug and an inflow-suppressing drug will work well together. While this makes sense, there is little available evidence to validate this concept. "There are very few good studies of adjunctive therapy, and the strength of evidence for efficacy of most adjunctive therapy especially that added to first line prostaglandins, is weak at best."

Thus, he said, when adding additional medications, it is important to determine that the new drug actually does lower IOP — don't just assume that it will. This is difficult to do, because IOP fluctuates spontaneously over time, and can both mask and mimic drug efficacy.

Also, he said, after substantial reduction with prostaglandin monotherapy, it can be hard to assess incremental IOP reduction with adjunctive therapy — this is the law of diminishing returns.

Singh also raised the important issue of conjunctival toxicity. "If we use more medications, is it possible that our ultimate outcomes with filtration surgery won't be as good?" There is some evidence that using medications may affect conjunctival fibroblasts, he said, but the effects on surgical outcomes have not been fully characterized.13, 14

Singh said that OMT was likely reached with two, or at most three, drugs in any given patient. "It is unlikely that there will be a benefit of adding a fourth or fifth drug-know when to say when." Quoting Joyce Cramer from Yale, Stephen Obstbaum, MD, pointed out one of the few absolutes in glaucoma therapy: "Drugs don't work for patients who don't take them." And the number of patients who don't take their medications as prescribed is surprisingly high. Across all therapeutic areas, Obstbaum said, "Approximately 9% of all prescriptions written are never filled,15 and 20% of prescriptions filled are never picked up by patients. The majority of these are for new or initial treatments."16 He said that glaucoma therapy is largely preventive, and "the benefits of treatment may seem intangible in a disease with no appreciable symptoms. Side effects, inconvenient dosing, increased frequency and complexity of the therapeutic regimen, are all associated with noncompliance."

Several new words have crept into the compliance vocabulary in recent years (see text box), but regardless of what we call it, "Compliance with medical therapy is the single most important thing a glaucoma patient can do to save his or her sight. Remaining on a medication provides a consistently lower IOP that minimizes fluctuations, and likely reduces the risk of progression."

http://www.eyeworld.org/ewweeksupplementarticle.php?id=55

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Nasal Steroids Cause IOP Increase, Study Says

Topical, intraocular, oral, and parenteral steroids might increase intraocular pressure (IOP), but little is known regarding the effect of nasal steroid spray. Researchers at Vanderbilt University in Nashville, TN, sought to examine the effect of discontinuing nasal steroid sprays on IOP in patients with glaucoma.

A retrospective chart review of patients with glaucoma using nasal steroids was performed. Averaged IOP for each pair of eyes was determined for presteroid use, steroid use, and 2 consecutive poststeroid use (poststeroid 1 and poststeroid 2) examinations.

Twenty-four eyes of 12 patients taking nasal steroids were identified. The mean IOP for each pair of eyes was 15.4 +/- 4.3 mm Hg (range, 9-23.5 mm Hg) for the presteroid use examination, 18.0 +/- 3.8 mm Hg (range, 12-24.5 mm Hg) for the steroid use examination, 14.5 +/- 3.3 mm Hg (range, 9.5-20 mm Hg) for poststeroid use examination 1, and 14.8 +/- 3.4 mm Hg (range, 95-22.0 mm Hg) for poststeroid use examination 2. Eleven patients experienced decreased averaged IOP at poststeroid use examination 1 after steroid discontinuation at a mean of 35 +/- 14 days and continued to maintain this decrease on the poststeroid use examination 2 visit at a mean of 191 +/- 150 days.

A significant increase between presteroid and steroid use examination IOPs ($P = .007$) and a significant decrease between steroid use and both poststeroid use 1 ($P < .001$) and poststeroid use 2 ($P = .011$) examination IOPs were observed. No significant difference between presteroid use and either poststeroid use examination IOPs ($P = 1.00$) was found. Many patients met their target pressures and were able to avoid or delay additional glaucoma therapy.

A significant reduction in IOP occurred with nasal steroid discontinuation in patients with glaucoma. Nasal steroids might contribute to IOP increase, and inquiry as to whether a patient has glaucoma before medication initiation is warranted.

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=16275373&dopt=Citation

J Allergy Clin Immunol. 2005 Nov; 116(5):1042-7. Epub 2005 Oct 3

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Injection Nearly as Effected as Surgery, Study Says

Some of us in states that allow ODs to perform injections have already discovered this – intralesional steroid injections for chalazia are almost as effective as incision and curettage. Now researchers at the Eye Department at PNS Shifa, Naval Hospital, Karachi have discovered that the outcome of multiple steroid injections is nearly the same as the surgical outcome.

Researchers selected 141 patients with chalazia and divided them into two groups. Patients received either incision and curettage (surgical treatment/ST group) or intralesional corticosteroid injection treatment (steroid injection/SI group). Successful treatment was achieved in 59 out of 75 patients (79%) in the ST group and 41 of 66 patients (62%) in the SI group at the first visit after two weeks. The success in ST group improved to 89% after the second operation and to 80% in the SI group after the second injection. The authors

concluded that injection for chalazia is safe and effective, though it does carry a risk for skin depigmentation in patients with darkly pigmented skin.

http://www.cpsp.edu.pk/jcpsp/Jan2006/article11.pdf

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VF Defects Associated with Buried Drusen Not as Common

Researchers evaluated the visual field with the use of automated perimetry and evaluated the retinal nerve fiber layer (RNFL) with optical coherence tomography (OCT) in patients with buried optic nerve drusen (OND).

Eyes with buried OND were defined as eyes with ultrasound-proved drusen that were not visible with indirect slit-lamp biomicroscopy. All eyes underwent automated perimetry. Some eyes underwent OCT to evaluate the RNFL.

Fifty-eight eyes of 41 patients with buried OND were evaluated. Three eyes (5%) had inferior arcuate scotomas. The other 55 eyes did not have visual field defects. Twenty-one of the eyes without visual field defects underwent RNFL analysis with OCT. All 21 eyes had normal average RNFL thickness. Some eyes had focal RNFL defects, but it is not clear whether these defects were clinically significant.

Visual field defects are uncommon in eyes with buried OND. Eyes with buried OND may have focal RNFL defects but have normal average RNFL thickness. In patients with buried OND and a visual field defect, consideration should be given to searching for other causes of the defect, especially if the defect is substantial.

http://www.ajo.com/article/PIIS0002939405010597/abstract

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Many Anterior Segment Applications, Company Says

Heidelberg Engineering GmbH (Heidelberg, Germany) has received the Food and Drug Administration's approval for the company's SL-OCT product, a commercial optical coherence tomography (OCT) device used for cross-sectional anterior segment imaging, company officials said. The SL-OCT provides non-contact cross-sectional scans of the anterior segment, officials said. Chamber angle, pachymetry, flap thickness, corneal curvature and comprehensive biometric measurements are possible with the instrument, as well as pre- and post-surgical comparisons, officials said. The SL-OCT was first introduced in Europe, receiving CE mark certification in 2003.

http://www.eyeworld.org/ewweek.php?id=406#

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Glaucoma Noncompliance Can Still Be Physician's Fault

Below is an excellent article about getting sued for glaucoma management and tips on how to avoid a lawsuit.

http://www.ophthalmologymanagement.com/article.aspx?article=86450

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Consider Acanthamoeba

Ophthalmologists at the Wills Eye Hospital, Philadelphia, are warning their colleagues about a recent dramatic increase in cases of *Acanthamoeba* keratitis seen at their institution.

Nineteen patients who had this infection were diagnosed between January 2004 and August 2005. Ten of the cases were seen during the last 5 months of the 20-month study period.

"We are concerned about this recent increase in cases of *Acanthamoeba* keratitis in patients using frequent-replacement contact lenses and multipurpose solutions and believe our experience underlines the importance of maintaining a high index of suspicion for this infection because early diagnosis is important to improve prognosis," explained Dr. Rocha, research cornea fellow, The Wills Eye Hospital.

At the time of presentation to Wills Eye Hospital, nearly three-fourths of the patients had been misdiagnosed as having herpes simplex virus (HSV) keratitis and had received steroids.

"This finding highlights the importance of considering *Acanthamoeba* keratitis in the differential diagnosis of any case of suspected HSV keratitis that is not responding to antiviral treatment," Dr. Rocha said.

Maintaining an index of suspicion for *Acanthamoeba* infection in patients with keratitis is important, irrespective of a history of contact lens wear, because timely diagnosis and prompt treatment initiation are critical for a good prognosis, said John K. Dart, DM, FRCS, FRCOphth, at World Cornea Congress V.

Patients with *Acanthamoeba* keratitis present with redness, tearing, blurred vision, and pain that is often, but not invariably, severe. Radial perineuritis is a hallmark diagnostic feature that is seen early but is present in less than 50% of patients.

Cysts and trophozoites can be identified with wet mounts from contact lens cases and examination of corneal smears using periodic acid-Schiff (PAS), hematoxylin and eosin (H&E), or calcofluor white. However, the laboratory should be told *Acanthamoeba* is suspected to ensure that one of these stains is used.

Although there are many agents with trophocidal activity, medications used to treat *Acanthamoeba* keratitis must be cysticidal. Among available antiamoebic agents, the biguanides, polyhexamethylene biguanide (PHMB) and chlorhexidine, have the lowest minimum cysticidal concentration (MCC) in vitro and are consistently effective against cysts in vitro. Based on MCC values, the

diamidines, propamidine (Brolene) and hexamidine (Désomedine) have reasonable activity, but the cysticidal concentration is variable and many strains are resistant both in vitro and in vivo.

Topical steroids can be extremely helpful for controlling corneal inflammation, but initiation of that treatment should be deferred for at least 2 weeks, Dr. Dart said.

"Studies in a hamster model demonstrate that macrophages and neutrophils are needed to eliminate the organism, and so steroids should be avoided early on. That said, when treatment with an effective antiamoebic has been ongoing for several weeks, adding a steroid can have a dramatic and beneficial effect on the inflammation and pain. Antiamoebic therapy should be continued for 4 weeks after the steroid is discontinued to avoid relapses," he commented.

http://www.ophthalmologytimes.com/ophthalmologytimes/article/articleDetail.jsp?id=279328

http://www.ophthalmologytimes.com/ophthalmologytimes/article/articleDetail.jsp?id=186751

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Advises Continued Patient Education

Researchers conducted a retrospective literature review to asses the evidence for the role of nutritional supplements and herbal medicines in the common causes of visual impairment.

They examined published studies and information found in PubMed, International Bibliographic Information of Dietary Supplements, and selected websites were reviewed for the role of nutritional and herbal medicines in the treatment of age-related macular degeneration, cataract, diabetic retinopathy, and glaucoma. The studies were evaluated systematically for their study design, study population, benefits, risks, biases, and criteria for the categorization of the level of evidence.

The available evidence does support the use of certain vitamins and minerals in patients with certain forms of age-related macular degeneration. For cataracts, the available evidence does not support these supplements to prevent or treat cataracts in healthy individuals. For diabetic retinopathy and glaucoma, the available evidence does not support the use of these supplements. In the category of herbal medicines, the available evidence does not support the use of herbal medicines for any of these ocular diseases.

Because of the widespread use of nutritional supplements and herbal medicines, ophthalmologists should be aware of their use so that they can inform patients properly when the supplements and herbal medicine are being used for eye disease.

http://www.ophsource.org/periodicals/ajopht/article/PIIS0002939405008068/abstract

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May Cause Granular Inflammation

An observational case series was conducted on 4 patients who presented with inflammatory eyelid reactions after receiving permanent eyeliner tattoo. Clinically, the tattoo-associated lesions were typically firm, raised masses underlying the areas of pigmentation. Histopathologic analysis of tissue from all 4 patients demonstrated a granulomatous inflammatory response with negative cultures for any organisms. Treatment approaches varied between a combination of topical steroid creams, local steroid injections, local resection, intramuscular steroid injection, and systemic oral steroids. These treatments were successful in all 4 cases.

The authors concluded that an allergic granulomatous reaction is one of the adverse reactions seen after permanent eyeliner tattoo. Treatment can be challenging and may ultimately require excision of tattoo pigment to remove the inciting factor. Systemic steroids may aid in controlling the inflammation associated with reaction to the tattoo pigment.

http://www.op-rs.com/pt/re/oprs/abstract.00002341-200601000-00011.htm;jsessionid=D3jqoQIlvFDDlaWFHrT0u837pW0TgfH2nIshYDCpTBMa8xLEm2dm!-477899252!-949856144!9001!-1

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Coffee Intake Increases IOP

Researchers have discovered that caffeine intake may affect IOP. Researchers examined the relationship between coffee and caffeine intakes and intraocular pressure (IOP). The Blue Mountains Eye Study examined 3654 participants aged 49+ years in an area west of Sydney, Australia. A detailed medical history questionnaire included average daily intakes of coffee and tea. The eye examination included Goldmann applanation tonometry and automated perimetry. Participants using glaucoma medications or who had previous cataract or glaucoma surgery or signs of pigmentary glaucoma/pigment dispersion, were excluded. Mean and maximum IOP calculations were used.

Participants with open-angle glaucoma (OAG) who reported regular coffee drinking had significantly higher mean IOP (19.63 mm Hg) than participants who said that they did not drink coffee (16.84 mm Hg), after multivariate adjustment, P = 0.03. Participants consuming >=200 mg caffeine per day had higher mean IOP (19.47 mm Hg) than those consuming <200 mg caffeine per day (17.11 mm Hg), after adjusting for age, sex, and systolic blood pressure (SBP), P = 0.06. This association did not reach statistical significance after multivariate adjustment. No association between coffee or caffeine consumption and higher IOP was found in participants with ocular hypertension (OH) and those without open-angle glaucoma.

In participants with open-angle glaucoma, this study identified a positive cross-sectional association between coffee consumption/higher caffeine intakes and elevated intraocular pressure.

http://www.glaucomajournal.com/pt/re/jglaucoma/abstract.00061198-200512000-00016.htm;jsessionid=D3kAnLeelr32DeIu51NbiklcS5XAKEFRC2BJP22eutLe0s8Egb71!-477899252!-949856144!9001!-1?index=1&database=ppvovft&results=1&count=10&searchid=1&nav=search

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Coding for New Technology Procedures

The purpose of Category III codes is to facilitate data collection on and assessment of new services and procedures. These codes are intended to be used for data collection purposes to substantiate widespread usage or in the FDA approval process. As such, the Category III CPT codes may **not** conform to the usual CPT code requirements that:

- services/procedures be performed by many health care professionals across the country;
- FDA approval be documented or be imminent within a given CPT cycle; and
- the service/procedure has proven clinical efficacy.

The service/procedure must have relevance for research, either ongoing or planned.

Category III CPT codes will be assigned an alphanumeric identifier with a letter in the last field (eg, 1234B). These codes will be located in a separate section of CPT, following the Medicine section. Introductory language will be placed in this code section to explain the purpose of these codes.

Requests for Category III CPT codes will follow the existing procedures for new or revised CPT codes. These codes will not require an additional advisory group. The CPT/HCPAC Advisory Committee, as it is currently constituted, is well informed of new and emerging technologies and procedures. If a particular Advisor is not aware of some new technology in their specialty, they can contact colleagues or make use of the specialty society resources. For these reasons, a separate advisory group for Category III CPT codes is not necessary.

Category III CPT codes will not be referred to the RUC for valuation because no RVUs will be assigned.

Once approved by the Editorial Panel, the newly added Category III CPT codes will be made available on a semi-annual (twice a year) basis via electronic

distribution on the AMA/CPT website. The full set of Category III codes will be included in the next published edition for that CPT cycle.

These codes will be sunset after five years if the code has not been accepted for placement in the Category I section of CPT, unless demonstrated that a Category III code is still needed. These codes will not be reused.

New Category III codes for 2006 are:

0123T Fistualization of sclera for glaucoma, through ciliary body
0124T Conjunctival incision with posterior juxtascleral placement of pharmacological agent (does not include supply of medication)
0099T Implantation of intrastromal corneal ring segments
0100T Placement of a subconjunctival retinal prosthesis receiver and pulse generator, and implantation of intra-ocular retinal electrode array, with vitrectomy.

For Medicare, the existence of a category III code does not guarantee payment of that code. It is a local Medicare carrier decision. Code 0124T has not received Food and Drug Administration approval so it may make it more difficult to obtain payment until it does. The drug and its delivery system, Retaane (anecortave acetate) are manufactured by Alcon (Fort Worth, Texas). You may want to check Alcon's web site (www.alconlabs.com) to see if and when the drug has become available.

The retinal prosthesis receiver is in early research development and would not have any clinical application in an ordinary practice as yet.

http://www.eyeworld.org/article.php?sid=2929

http://www.ama-assn.org/ama/pub/category/12886.html

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Help Keep Us Informed

Please don't hesitate to submit news and notes to the Optimum VA. The more you submit, the better our newsletter will be. Such information may include:

- Letters to the editor
- Case reports
- Photos
- Article abstracts (include publication information)
- Upcoming events (CE, meetings, etc.)
- Personal accomplishments
- Internet links

*** Feel free to submit at any time by clicking the link**

Contact Optimum VA which is also located on the front page in the Editor's Box. Submission and publication dates are listed below.

**** Residents and students are also encouraged to submit.**

Issue	Submissions Due	Publication Date
Winter	December 15	January 1
Spring	March 15	April 1
Summer	June 15	July 1
Fall	September 15	October 1

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Associations, Institutes, Organizations, Societies

All About Vision
Alliance for Aging Research
American Academy of Ophthalmology
American Academy of Optometry
American Academy of Pediatrics
American Optometric Association
American Optometric Foundation
Association of Regulatory Boards of Optometry (ARBO)
Council for Refractive Surgery Quality Assurance
Eye Advisory
Eye Surgery Education Council
Glaucoma Research Foundation
Healthy Vision 2010
International Glaucoma Association
NASA Vision Group
National Eye Research Foundation
National Keratoconus Foundation
National Optometric Association
NBEO
Optometric Extension Program
Optometric Refractive Surgery Society
Optometrists.org
ORMS
Parents Active for Vision Education
RGP Institute
Schepens Eye Research Institute
Vision Council of America
World Council of Optometry

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Coding

AHIMA
AMA (CPT)
Centers for Medicare & Medicaid Services
Healthcare Common Procedure Coding System (HCPCS)
ICD-9-CM Coordination and Maintenance Committee
NCHS - Classification of Diseases , Functioning, and Disability
Medicare Carriers by State

- Alabama
- Alaska
- Arizona
- Arkansas
- California
- Colorado
- Connecticut
- Delaware
- District of Columbia
- Florida
- Georgia
- Hawaii
- Idaho
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- Indiana
- Iowa
- Kansas
- Kentucky
- Louisiana
- Maine
- Maryland
- Massachusetts
- Michigan
- Minnesota
- Mississippi
- Missouri (Eastern)
- Missouri (Western)
- Montana
- Nevada
- New England
- New Hampshire
- New Jersey
- New Mexico
- New York
- New York (Queens County)
- New York (Upstate)

North Carolina
North Dakota
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Contact Lens

Acuvue
Bausch & Lomb
British Contact Lens Association
CIBA Vision NIGHT & DAY
CIBA Wesley-Jessen
Contact Lens and Anterior Eye
Contact Lens Council
Contact Lens Manufacturers Association
Contact Lens Spectrum
CooperVision
Innovative Sclerals Ltd.
International Association of Contact Lens Educators (IACLE)
New Zealand Contact Lens Society
Ocular Sciences
Official Site of Silicone Hydrogel Lenses
Virtual Consultant

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Conventions and Meetings

Great Western Council of Optometry
Heart of America Contact Lens Society
Midwest Vision Congress & Expo

OptoEast
OptoWest
Southern Council of Optometrists
Vision Expo East
Vision Expo West

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Foreign Web Sites

American Academy of Optometry (British Chapter)
Association of Optometrists, UK
Australasian College of Behavioural Optometrists (ACBO)
Bradford, University of, Department of Optometry (UK)
Brazilian Optometry Association
Canadian Association of Optometrists
College of Optometrists - UK
Eye Health Council of Canada
Hong Kong Polytechnic University Optometry Section (PRC)
Hong Kong Society of Professional Optometrists
Institute of Optometry - UK
Karolinska Institue - Sweden
Melbourne College of Optometry - Australia
New Zealand Association of Optometrists
Ontario Association of Optometrists
Optometrists Association (Victoria)
Optometrists Association Australia (New South Wales Division)
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Armed Forces Optometric Society
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American Journal of Ophthalmology
American Society of Cataract and Refractive Surgery
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British Journal of Ophthalmology
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Primary Eye Care News
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Low Vision and Vision Therapy

American Foundation for the Blind
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Foundation for Fighting Blindness
Lighthouse International
Low Vision Gateway
NORA - Neuro-Optometric Rehabilitation Association
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State License Renewal Requirements
Vision and Computers

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AMD Alliance International
American Macular Degeneration Foundation
Lutein Information
Macular Degeneration Foundation
Macular Degeneration International
Macular Degeneration Network
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MAXIVISION
Center for Keratoconus

Chua Eye Page
Collaborative Longitudinal Evaluation of Keratoconus Study (CLEK)
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Optical Laboratories Association
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Opticians Association
Polycarbonate Lens Council
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Optometry Schools

Illinois College Of Optometry

Indiana University
Michigan College of Optometry at Ferris State University
New England College of Optometry
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NSU College of Optometry
Ohio State University
Pacific University
Pennsylvania College of Optometry
Southern California College of Optometry
Southern College of Optometry
SUNY State College of Optometry
UAB School of Optometry
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University of Houston
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State Optometry Associations

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