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Consistent IOP control

Compliance—priority for patient care

By Cheryl Guttmann Krader
Reviewed by J. James Thimons, OD

Salt Lake City—The prevalence of non-adherence with IOP-lowering medications underscores the need for optometrists to frequently re-assess medication use in glaucoma patients and consider therapies that will enable compliance and prevent it from becoming an efficacy-limiting issue, said J. James Thimons, OD, at Optometry’s Meeting.

“Reinforcing the importance of using IOP-lowering drops as directed may be the most important thing we can do to maintain disease control and prevent visual loss from glaucoma. Therefore, in addition to reviewing IOP results and findings from imaging and functional studies, eye care providers should be sure to take some time to discuss medication compliance,” he said.

Tried and true

Reap the benefits of scleral lenses

By Liz Meszaros
Reviewed by Elliott H. Myrowitz, OD, MPH

Baltimore—Scleral lenses can be particularly helpful in certain subsets of patients who cannot wear contact lenses or who cannot achieve proper correction with glasses, said Elliott H. Myrowitz, OD, MPH, here at the annual Evidence-Based Care in Optometry Conference.

“There are things that we do sometimes that make a world of difference. These are what I call ‘wow’ moments, and they often involve the fitting of scleral lenses,” began Dr. Myrowitz, of The Johns Hopkins Wilmer Eye Institute, Baltimore.

Two patient groups that are not helped with glasses or conventional contacts and who may benefit from scleral lenses are those with advanced irregular corneas and advanced ocular surface disease.

“If you have a patient with advanced corneal keratoglobus, for example, you won’t be very successful in getting a lens to stay on that cornea or do very well. Also, for the patient with Stevens-Johnson syndrome with severe ocular surface disease, the patient with disfigured lids including entropia and very low tear film to support a contact lens, these will be difficult eyes to fit with a contact lens, but are often successful with scleral lenses,” he said.

The advantages of scleral lenses include:

- They provide an optical neutralization of an irregular corneal surface and retain a precorneal fluid reservoir that provides corneal hydration.
- They cannot be dislodged by the lids and are usually very comfortable.
- They are usually designed to have minimal or no corneal contact.

“This all seems very exciting and very futuristic, but if we look at the history of contact lenses, we see that these large lenses have been here all along,” Dr. Myrowitz noted.

In fact, the first reported contact lenses were made in 1888. They were 15 to 22 mm in size and made of glass. “Optically, these worked well, but because there was no permeability to them, hypoxia was a big problem,” he said.

In the 1940s, hard polymethylmethacrylate lenses became available, but they also created significant corneal hypoxia. In 1983, gas permeable material became available and reduced the risk of hypoxia. The highly permeable materials used today make hypoxia even less of a problem.

“What we’re concerned about today are mechanical issues, involving suction or mechanical trauma,” Dr. Myrowitz said. “Lenses that are well designed have minimal or no corneal contact.”

See Scleral lenses on page 22
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How to Contact Optometry Times

Editorial
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North Clarendon, OH 44707
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Production
131 W. First St, Duluth, MN 55802-2065
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- Providing management information that allows optometrists to enhance and expand their practices.
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Editor-in-Chief Mark L. Druggos
mdruggos@advanstar.com 440/891-2703

Senior Editor Paul Mathies
pmathies@advanstar.com 440/891-2606

Editorial Assistants Julia Brown, Miranda Hester

Art Director Quinn Williams
qwilliams@medialumina.com 218/740-7136

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Publisher/Director of Sales Leo Avilla
lavilla@advanstar.com 732/546-3067

National Account Manager Erin Schlussel
eschlussel@advanstar.com 732/546-3078

National Account Manager Rebecca Novack
rnovack@advanstar.com 415/971-4650

Account Manager, Classified/
Display Advertising Heather J.W. Schlosser
hschlosser@advanstar.com 440/891-2779

Account Manager, Recruitment Advertising Jacqueline Moran
jmoran@advanstar.com 800/225-4569 Ext. 2762

Sales Coordinator Samyu Ganesh
sganesh@advanstar.com 732/546-3077

Production

Production Manager Terri Johnstone
tjohnstone@medialumina.com 218/740-6310

Circulation

Audience Development Manager Kristina Bildeaux
kbildeaux@advanstar.com 507/895-6758

Permissions/International Licensing Maureen Cannon
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Osmolarity system granted CLIA waiver

San Diego—TearLab Corp. received a waiver under Clinical Laboratory Improvement Amendments (CLIA) for its Osmolarity System to diagnose dry eye. Based on a supervisory review of the company’s appeal, the FDA granted the company’s petition for a waiver. Upon TearLab’s submission of labeling acceptable to the FDA, the CLIA waiver will be issued.

“This marks the achievement of our third and final major milestone,” said Elias Vamvakas, chief executive officer, TearLab.

“We believe that in order for the TearLab Osmolarity System to become widely adopted, it is essential that it be accessible at the point-of-care. Now, with the CLIA waiver obstacle overcome, this groundbreaking test is free to start growing to its potential,” Vamvakas said.

The TearLab Osmolarity System uses a lab-on-a-chip approach that requires less than 50 nL of tear fluid to measure tear osmolarity, producing a sample-to-answer result in less than 30 seconds. The system eliminates the challenges that previously prevented point-of-care osmolarity testing for dry eye disease.

Last spring, TearLab failed to gain FDA approval for submitting insufficient data. With the CLIA waiver, eligible offices can receive reimbursement for the test. The waiver was granted after regulators changed the classification of the test from “moderately complex” to “simple.”

Without the CLIA waiver, an eye-care practice would have to obtain CLIA certification through a 20-hour continuing medical education course, which was an impediment to adopting the system.

Safety alert

FDA escalates recall of Avaira CLs to class 1

Fairport, NY—CooperVision has expanded its recall of certain Avaira contact lenses (CLs) after wearers reported hazy vision and discomfort, including severe eye pain and injuries that required medical treatment.

The FDA said the lenses contained “the unintended presence” of silicone oil residue on certain lots of the single-use, disposable Avaira lenses. It has issued a class 1 recall, the most serious type, indicating a reasonable probability that these products will cause serious adverse health consequences. CooperVision is collaborating with the FDA on the recall.

Initially, the company believed only its toric line of CLs was impacted, and initiated a recall on Aug. 19. Notifications were sent to more than 9,000 Avaira Toric customers and more than 7,000 U.S. eye-care practitioners (ECPs) who had received or sampled the lenses. All Avaira Toric lenses were pulled from distributors to ensure the affected lots were removed, the company said in an Oct. 13 release.

However, on Nov. 19, CooperVision expanded the recall to include the Avaira Sphere CL and sent letters to worldwide distributors and healthcare practitioners.

The recall affects about 778,301 Avaira Toric soft CLs manufactured Nov. 1, 2010, through Aug. 3, 2011, according to the FDA’s recall notice. CooperVision said 6,600,000 Avaira Sphere lenses are affected by the recall, and 4,900,000 of those were shipped to customers globally.

The Avaira Sphere soft CLs were manufactured Feb. 1 through Aug. 24 and distributed worldwide March 2 through Nov. 15, the FDA said.

Patients experiencing problems are encouraged to stop wearing the lenses immediately and contact their ECP for advice. Patients also may contact CooperVision on its toll-free hotline, 855/526-6737, or visit www.coopervision.com/international-recall to enter the package lot number on the carton or blister label to determine if their lenses were recalled.

CooperVision said it has identified the problem with the toric lenses and taken corrective action through its quality system process. The company said it intends to replace the recalled Avaira Sphere lenses with lenses from lots not impacted by the recall.

“The company is confident we found the problem and have taken corrective action to fix the problem,” Christine Moench, vice president, global regulatory affairs and quality assurance, CooperVision, said in a prepared statement. “The health and safety of our customers is our top priority.”

Industry bids farewell

David Weeks retires

RPB chairman retires after 50 years of promoting vision research

By Jennifer A. Webb

New York—David F. Weeks was a quartermaster in the U.S. Army, earned a business administration degree, and raised funds for philanthropic causes before Jules Stein, MD, hired him in 1961 to lead the newly formed Research to Prevent Blindness (RPB).

His career path, which combined leadership training and insight into legacy-building causes, proved a successful formula for the fledgling organization.

Fifty years later, Weeks is stepping down from RPB’s helm, having helped raise millions of dollars for vision research and leading the drive—against tremendous odds—to form the National Eye Institute (NEI). His retirement, most recently as the organization’s volunteer chairman, is effective this month.

During his tenure, RPB’s year-end net asset balance grew from $13,500 in 1960 to more than $250 million in 2010. Today, RPB gives unrestricted eye research grants of $100,000 to each of 56 medical schools and provides individual grant support at every stage of a scientist’s career. The organization has given more than $300 million in grants to departments of ophthalmology during his tenure.

“David has provided outstanding leadership...”
ship for vision research throughout his career at RPB, which he has led to be the single most important private philanthropic organization in vision research,” said Stephen J. Ryan, MD, the Grace and Emery Beardsley chairman in ophthalmology, Keck School of Medicine, University of Southern California, and president, Doheny Eye Institute.

An uphill battle
Weeks, 85, joined RPB after steering the March of Dimes’ fundraising efforts, first in his home state of Idaho and later at its national headquarters in New York City. He became the assistant national director of fundraising for the organization, but left after the development of the polio vaccine had, in his opinion, rendered his job moot. He briefly worked as a university fundraiser before learning that Dr. Stein was seeking an executive director.

At the time, very little vision research was being done in the United States. In fact, only 15 basic scientists were working on ophthalmology in the mid-1960s, Weeks said.

Dr. Stein and RPB’s trustees hoped to stimulate more emphasis on vision research by giving money only to departments of ophthalmology. Initially, RPB gave grants of $5,000 to 11 schools, Weeks recalled. Other schools noticed this funding source, and soon developed departments of ophthalmology.

“RPB introduced a golden age of eye research,” Weeks said.

Birth of the NEI
At the national level, eye research was lumped with neurological diseases at the National Institutes of Health (NIH) and received only 17%, approximately $14 million, of the total money designated for that group, Weeks said. That spurred RPB to seek an independent body within the NIH for eye research.

The Johnson administration, however, disliked the idea of adding more institutes and tried to block the effort, Weeks said. Working with a sympathetic congressman, Weeks drafted the bill to create the NEI, then lobbied legislators for support. Despite some interest, the effort stumbled when a number of medical organizations, including the American Medical Association and the predecessor to the American Academy of Ophthalmology, cited conflicts of interest and refused to endorse it, Weeks said.

Without their help, the legislation was dead. So Weeks—along with A. Edward Maumenee, MD, of Johns Hopkins University’s Wilmer Eye Institute—decided to create a medical group to back the effort. They formed the Association of University Professors of Ophthalmology (AUPO) with the chairmen of the nation’s departments of ophthalmology as its members. In the next session of Congress, AUPO endorsed the legislation and it easily passed.

“In a very real way, the NEI and funding for vision research changed the world as we know it,” Dr. Ryan said. “We cannot overstate the critically important contributions of David as he travelled back and forth between New York and Washington. There was tremendous organized resistance, including from the NIH itself, to the establishment of the NEI. David’s leadership was essential.”

Continued support
Since then, RPB has helped push the boundaries of understanding by funding scientists willing to challenge existing doctrine. As a result, the organization is associated with most of the major advancements of the past half-century, Weeks said.

For example, RPB gave the first grants to adapt use of a laser to treat visual disorders, supported work on vitrectomy instrumentation, and helped fund the initial VEGF research as a treatment for macular degeneration. That research became of particular interest to Weeks, who was diagnosed 2 years ago with the degenerative disease. “I was pleased I had something to do with affecting treatment,” Weeks said.

Unlike most philanthropic organizations, Weeks never sought RPB funding from the general public. Weeks preferred to concentrate on ophthalmologists—who join as associate members—and their grateful patients. Benefits are the organization’s largest source of income.

RPB continues to accept grant requests only from department chairmen to support scientists, not projects. “What we’re interested in is supporting the individual who might be interested in developing something new,” he said.

Barry J. Mondino, MD, chairman of the department of ophthalmology, University of California, Los Angeles, and director of the Jules Stein Eye Institute (JSEI), said RPB has contributed $8 million to JSEI since 1960, citing 131 RPB awards for career development, senior investigators, physician-scientists, fellowships, professorships, and more. This fall, RPB donated $500,000 to a JSEI building fund for a vision proteomics center.

RPB spokesman Matthew Levine said the organization is still mulling a successor to Weeks. Whoever takes on the role will inherit a legacy of work in which Weeks became synonymous with the organization.


Distinguished contributions
SCO professor receives Feinbloom annual award
Memphis—Glen Steele, OD, a Southern College of Optometry (SCO) professor, earned the William Feinbloom Award from the American Academy of Optometry. The award recognizes individuals who made a distinguished, significant contribution to clinical excellence, and the direct clinical advancement of visual and optometric service.

Steele earned the award for his role in creating and advancing the InfantSEE program, offering eye and vision exams for infants at no cost. The program is available nationwide.

“We’re very proud of Dr. Steele’s being chosen to receive the Feinbloom Award,” said Richard Phillips, OD, president of SCO. “The InfantSEE program is truly remarkable, having provided thousands of exams to infants each year since its inception in 2005.”

For more information on the William Feinbloom Award, please visit www.aaopt.org.

Vision basics
New PBA series to help promote vision health
Chicago—Prevent Blindness America (PBA) launched its “Healthy Eyes Educational Series” to help build public awareness of eye and vision basics, common adult vision disorders, eye safety precautions, and proactive behaviors that promote healthy vision.

Visit the Healthy Eyes Educational Series on the PBA Web site and download modules for customizable formal and informal sessions. Module topics include adult eye disorders, contact lens safety, eye anatomy, healthy living, home safety, low vision, refractive errors, sports safety, and workplace safety.

“Through the Healthy Eyes Educational Series, we provide those who are concerned with protecting vision with the essential tools they need to educate others on the importance of taking steps today to preserve sight in the future,” said Hugh R. Parry, president and chief executive officer, PBA.

For more information on the PBA Healthy Eyes Education Series, call 800/331-2020 or visit http://preventblindness.org/healthy-eyes-education-series.
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Successful diagnostics, timing

Simple tips help address diplopia

Applying a few pointers and tests can make quick work of an otherwise difficult diagnosis

By Ron Rajecik
Reviewed by Lisa P. Rovick, MHSc, CO, COMT

Minneapolis-St. Paul, MN—Diplopia patients can be enormous consumers of time in a busy practice, said Lisa P. Rovick, MHSc, CO, COMT. Don’t be afraid to schedule these patients for late in the day to avoid throwing off your entire schedule. It takes savvy, well-trained staff to identify these patients when they contact the office.

According to Rovick, assistant professor and program director, orthoptics major, St. Catherine University, Minneapolis-St. Paul, MN, patients will appreciate your rescheduling of their appointment so you can spend the appropriate amount of time to accurately diagnose and treat their condition.

When a patient presents with diplopia, it’s important to measure his or her eye alignment in gazes other than straight ahead. “Get these patients out of the phoropter and measure them in free space with cover testing,” she said.

Diagnosis and treatment

Rovick offered several other tips for diagnosing and treating diplopic patients:

- The measurement of how far out of alignment a patient’s eyes are and how much prism is needed for comfortable single vision aren’t always the same. “People like to use their own fusional ability, so you often don’t need to give them every bit of prism that you measure,” Rovick said. “You just have to give them enough to make them see single. Less is more.”
- A single Maddox rod is a simple and handy tool to identify very small deviations in alignment, especially in patients who have vertical diplopia. “Sometimes patients come in with a huge complaint of vertical diplopia, but your measurements don’t bear out their complaint,” Rovick said. “That’s when the Maddox rod is helpful because it will help you identify things like a one diopter vertical misalignment that you would not always be able to see with cover testing.”
- Be aware that patients who present with diplopia may have an epiretinal membrane. This membrane can cause a “pucker” or “winkle” on the retina, often in the patient’s central vision. “This membrane causes a competition between central fusion, where patients put the stereo images together in the center of their vision, and peripheral fusion, where the peripheral vision of their two eyes lock in,” Rovick said. “Because one or both of the retinas are wrinkled, the patient can’t make both sets of images single. They can’t use their central vision and their peripheral vision at the same time and create one image.”

An Amsler grid is a simple tool to make the diagnosis, Rovick said. When patients see a “wavy” grid, it’s a big clue that they may have an epiretinal membrane.

Even though you might be sure of your diagnosis in such cases, patients may need some convincing, Rovick continued. She suggested using the “lights on/lights off” test to help patients understand their condition. This test requires having a vision testing system in which the screen can reverse and show white letters on a black background, as well as the standard black letters on a white background.

‘Get these patients out of the phoropter and measure them in free space with cover testing.’

Lisa P. Rovick, MHSc, CO, COMT

Eliminate all sources of light in the room, including lights on equipment and from under the exam room door—except the screen for the visual acuity test. “If it’s completely dark and the patient is looking at a white image on a black background, he or she will see a single image. Then, when you turn the lights on and the peripheral fusion kicks back in, the patient will see double,” Rovick explained.

To help these patients deal with their diplopia, Rovick advised applying a filter—just a dot or a small strip of satin tape—to the center of the lens in their glasses. This will “fog out” the central vision in one eye and allow the patient to use his or her peripheral vision.

“Once you’ve demonstrated this to patients, you can use this filter to basically help them pay attention to clearer image and ignore the blurry one,” Rovick said. “But they have to believe you. You’re not actually ‘fixing’ anything; you’re helping them adjust to what they have to live with.”

Use Fresnel press-on prisms on the lens over the non-dominant eye to let patients test out the use of prism in the real world.

‘[The patient] can’t use their central vision and their peripheral vision at the same time, and create one image.’

Lisa P. Rovick, MHSc, CO, COMT

“Rather than ordering a pair of glasses, having the patient try them, then remaking the glasses and changing the prisms again and again, let them ‘test drive’ the prism by using press-ons,” Rovick said. “If the prism works, they don’t even need to come back, you can simply mail them the prescription. If it doesn’t work, they’ll need to come back and you’ll need to adjust it. But it avoids having a lot of remakes on glasses.”

In addition, patients will not only appreciate the opportunity to try out the prism, they’ll appreciate that you’re sensitive to the fact that what happens in the office may be different than what happens in the real world.

Reference


F.Y.I.

Lisa P. Rovick, MHSc, CO, COMT
Phone: 651/690-7778
E-mail: lprovick@stkate.edu
Ms. Rovick has no financial disclosures related to the subject matter.
Indication: LUMIGAN® 0.01% and 0.03% (bimatoprost ophthalmic solution) is indicated for the reduction of elevated intraocular pressure in patients with open-angle glaucoma or ocular hypertension.

Important Safety Information

Warnings and Precautions: Pigmentation: Bimatoprost ophthalmic solution has been reported to cause changes to pigmented tissues: most frequently, increased pigmentation of the iris, eyelid, and eyelashes. Increases are expected as long as bimatoprost is administered. Iris color change may not be noticeable for several months to years. After discontinuation of bimatoprost, iris pigmentation is likely to be permanent, while eyelid and eyelash changes have been reported to be reversible in some patients. Patients should be informed of the possibility of increased pigmentation. The long-term effects of increased pigmentation are not known.

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Pigmentation: Bimatoprost ophthalmic solution has been reported to cause changes to pigmented tissues. The most frequently reported changes have been increased length, thickness, and number of lashes. Eyelash changes are usually reversible upon discontinuation of treatment. Pigmentation of the periorbital tissue and eyelash changes have been reported to be reversible in some patients. Patients who receive treatment should be informed of the possibility of increased pigmentation. The long-term effects of increased pigmentation are not known.

Iris color change may not be noticeable for several months to years. Typically, the brown pigmentation around the pupil spreads concentrically towards the periphery of the iris and the entire iris or parts of the iris become more brownish. Neither new pigmented nevi nor freckles of the iris appear to be affected by treatment. While the brown pigmentation around the pupil spreads concentrically towards the periphery of the iris and the entire iris or parts of the iris become more brownish. In some patients, the brown pigmentation can be permanent, while pigmentation of the periorbital tissue and eyelash changes are usually reversible upon discontinuation of treatment.

Intraocular Inflammation: LUMIGAN® 0.01% and 0.03% should be used with caution in patients with active intraocular inflammation (eg, uveitis) because the inflammation may be exacerbated.

Macular Edema: Macular edema, including cystoid macular edema, has been reported in patients with active intraocular inflammation (eg, uveitis) because the inflammation may be exacerbated.

Bacterial Keratitis: There have been reports of bacterial keratitis associated with the use of multiple-dose containers of topical ophthalmic products. These containers had been inadvertently contaminated by patients who, in most cases, had a concurrent corneal disease or a disruption of the ocular epithelial surface.

Use With Contact Lenses: Contact lenses should be removed prior to instillation of LUMIGAN® 0.01% and 0.03% and may be reinserted 15 minutes following its administration.

ADVERSE REACTIONS
Clinical Studies Experience: Because clinical studies are conducted under widely varying conditions, adverse reaction rates observed in the clinical studies of a drug cannot be directly compared to rates in the clinical studies of another drug and may not reflect the rates observed in practice.

In clinical studies with bimatoprost ophthalmic solutions (0.01% or 0.03%), the most common adverse event was conjunctival hyperemia (range 25%-45%). Approximately 0.5% to 3% of patients discontinued therapy due to conjunctival hyperemia with 0.01% or 0.03% bimatoprost ophthalmic solutions. Other common events (> 10%) included growth of eyelashes and vellus hair in the treated eye. These changes include increased length, thickness, and number of lashes. Eyelash changes are usually reversible upon discontinuation of treatment.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Bimatoprost did not impair fertility in male or female rats up to doses of 0.6 mg/kg/day and 1 mg/kg/day respectively (at least 192 and 291 times the recommended human exposure based on blood AUC levels respectively) for 104 weeks.

Nonclinical Toxicology
Carcinogenesis, Mutagenesis, Impairment of Fertility: Bimatoprost did not cause carinogetic in either mice or rats when administered by oral gavage at doses of up to 2 mg/kg/day and 1 mg/kg/day respectively (at least 192 and 291 times the recommended human exposure based on blood AUC levels respectively) for 104 weeks.

Potential for Pigmentation: Patients should be advised about the potential for increased brown pigmentation of the iris, which may be permanent. Patients should also be informed about the possibility of eyelid skin darkening, which may be reversible after discontinuation of LUMIGAN® 0.01% and 0.03% (bimatoprost ophthalmic solution).

Patients with a history of liver disease or abnormal ALT, AST, and/or bilirubin at baseline, bimatoprost 0.03% had no adverse effect on liver function over 48 months.

PATIENT COUNSELING INFORMATION
Potential for Pigmentation: Patients should be advised about the potential for increased brown pigmentation of the iris, which may be permanent. Patients should also be informed about the possibility of eyelid skin darkening, which may be reversible after discontinuation of LUMIGAN® 0.01% and 0.03% (bimatoprost ophthalmic solution).

Potential for Eyelash Changes: Patients should also be informed about the possibility of eyelash and vellus hair changes in the treated eye during treatment with LUMIGAN® 0.01% and 0.03%. These changes may result in a disparity of hair in the treated eye.

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Symbiotic relationships

Be proactive when co-managing patients

Fostering relationships with surgeons and patients is key to successful outcomes

By Nancy Groves
Reviewed by Paul C. Ajamian, OD, FAAO

Salt Lake City—Co-management relationships with ophthalmologists differ from community to community, but it’s often best for the optometrist to take a proactive role in the pre- and postoperative decision-making and care, according to Paul C. Ajamian, OD, FAAO, at the annual meeting of the American Optometric Association.

When performing exams and taking patient histories, optometrists must be vigilant for anything that might adversely affect outcomes and report it in writing to the surgeon, said Dr. Ajamian, center director of Omni Eye Services of Atlanta, the oldest true co-management center in the United States. Doctors of optometry also should educate their patients about the co-management relationship as well as the patient’s lens options.

“Make sure patients are aware that you’re in a co-management relationship with a surgeon, and that they’re in agreement with doing that. Most patients want to see their OD for post-op care, once you explain how it works,” he noted.

Dr. Ajamian also advised optometrists to explain all lens options to patients scheduled for cataract surgery, including multifocal and toric intraocular lenses. Not all patients will want or be able to afford these lenses, and some will be poor candidates. For medico-legal reasons, it is important to describe all choices and document this discussion, he added.

A two-way street

The doctor-to-doctor relationship also needs to be fostered. Let the surgeon know about any pertinent findings that may affect outcomes, such as blepharitis or medication use. It’s better to recommend delaying surgery for a few weeks while you treat a problem such as dry eye rather than send the patient in with a condition that could affect the post-op acuity, he said.

Optometrists also must learn the surgeon’s preoperative and postoperative protocols.

“You want to look like a team,” said Dr. Ajamian, adding that the optometrist should spend time in the surgeon’s office and be present during at least one surgery session to become familiar with the medications used and instructions given to the patient.

“It means a lot to patients when you can tell them exactly what will happen on surgery day because you witnessed it yourself,” he explained.

“The best marketing you can ever do is to scrub in with your patient. Patients appreciate the effort and may be more comfortable if they sense that their optometrist is more than a passive bystander. If the surgeon doesn’t welcome you, there’s something wrong,” he added.

Remember that co-management is a two-way street, and the surgeon has responsibilities to the optometrist, Dr. Ajamian said.

First, the surgeon must provide a consent form indicating the patient’s willingness to have the optometrist provide postoperative care. The surgeon is expected to inform the optometrist if problems arose during surgery. If you’ve been briefed, you won’t be caught off guard if a patient returns to you with 20/200 corneal edema; you will be able to reassure the patient that you can manage the situation.

Document everything

Successful co-management also depends on good documentation. “Treat your charts as well as, if not better than, you treat your patients. As a profession, we treat our patients well, but our charting is sometimes lacking,” he said.

Dr. Ajamian also advised clinicians to justify any extra work they do on a premium lens by carefully documenting additional imaging scans, topography, or extra time providing tips for reading or dealing with lens glare. When it comes to reimbursement, having this information in the chart is proof that the fee was earned for specific, relevant services and was not a kickback.

During the preoperative exam, record the history, acuity, external examination, slit lamp, and fundus measurements. Take a functional history as well as a medical history.

“The most important thing that should be documented is not the acuity but how it affects their daily living. And that starts with you,” he said. “If you can’t get a complaint that the patient is having significant difficulty with driving at night, reading, or seeing the television, then you shouldn’t be sending the patient. If the surgeon can’t document something similar, then the insurance isn’t going to cover it. This could result in embarrassment for all parties concerned.”

Particularly when premium lenses are to be used, be mindful of a history of chronic depression, bipolar disorder, or anxiety disorders. These conditions, as well as certain behaviors, could indicate that the patient is a poor candidate for surgery. Ambivalence, excessive questioning, unrealistic expectations, and a desire for guaranteed success could be warning signs.

Finalize the patient history

Complete the history by recording medication use (particularly of tamsulosin [Flomax] for benign prostatic hyperplasia) and contact lens wear. Ask for details about a history of diabetes or hypertension, noting when it was last checked and whether it’s under control. Also take patients’ blood pressure routinely.

In addition to the standard measurement of visual acuity, a pinhole test is recommended, especially if the patient has monocular diplopia. Perform glare testing or use a brightness acuity tester, if you have it, on the medium setting for any patient who is 20/40 or better.

“When in doubt about what’s going on behind the eye and the degree of cataract doesn’t make sense based on the level of acuity, then look at the retina. If you have one, get an OCT, especially with a premium lens,” he said.

After the exam and history are complete, write down your impressions and plan. “The old days of not thinking about what kind of lens implant the patient needs are over,” he said. “Who understands the refractive error and the visual needs of these patients better than you, the patient’s primary eye-care provider? So be sure to transmit that information to the surgeon so that the final refractive result ends up the way you and the patient want it to be.”

Dr. Ajamian also reminded optometrists to be accessible to patients after hours. “If you’re going to take this responsibility, please be available to your patients. Make sure they know how to reach you and that you know how to get hold of the surgeon in case of an emergency.”

Take-Home Message

The nature of co-management relationships between ophthalmologists and optometrists differ from region to region. Generally, optometrists would be best served by taking a proactive role in both the pre- and postoperative decision-making and care of patients.
**More options available for corneal repair**

Endothelial keratoplasty procedures less invasive, becoming more de rigueur to better suit candidates

By Nancy Groves
Reviewed by David Stanfield, OD, FAAO

Chehalis, WA—Corneal transplantation is moving away from penetrating keratoplasty (PK) toward less invasive endothelial keratoplasty (EK) procedures in which only the damaged portion of the cornea is removed and replaced with donor cells, according to Dr. Stanfield, OD, FAAO.

While PK is a well-established procedure that generally produces excellent visual results, it has several drawbacks that have spurred surgeons to develop and modify EK techniques, said Dr. Stanfield, Pacific Cataract and Laser Institute, Chehalis, WA.

Following PK, the possibility that the wound will reopen is a concern for at least a year and potentially for the patient’s lifetime. Other issues include corneal irregularities and the risk of infection from sutures. A major drawback with conventional PK is that patients usually develop significant amounts of induced corneal astigmatism, prolonging visual recovery.

Despite the growing popularity of EK procedures, there are cases where PK is preferable. Candidates for whom PK is preferable are those with full thickness corneal scars or severe corneal irregularity. For EK, the indications include endothelial decompensation originating from Fuchs’, congenital hereditary endothelial dystrophy, other corneal dystrophies, trauma, surgery, and failed PK.

**EK options**

EK was first performed in the 1950s, but was not pursued aggressively until the late 1990s. Descemet’s stripping automated endothelial keratoplasty (DSAEK) and Descemet’s stripping endothelial keratoplasty (DSEK) are the most commonly performed EK procedures today, Dr. Stanfield said.

“Early EK procedures—including posterior lamellar keratoplasty (PLK) and deep lamellar endothelial keratoplasty (DLEK)—have been refined as surgeons gained experience. The current menu of procedures includes DSAEK, DSEK, and Descemet’s membrane endothelial keratoplasty (DMEK). DSEK and DSAEK have a good track record,” he said.

Postoperative visual recovery is usually excellent, and with DMEK, a greater percentage of patients have 20/20 visual acuity compared with traditional PK, DSEK, and DSAEK. Visual rehabilitation typically occurs within a few weeks, compared to a year or more with penetrating keratoplasty.

In DSAEK, donor tissue is transferred to an artificial chamber, an automated microkeratome is activated, and donor tissue is trephined. During DSEK procedures, the donor is manually prepared. Steps for preparing the recipient cornea are stripping and removing the Descemet’s membrane, folded insertion of the donor through a small, temporal incision, unfolding the tissue with an air bubble, and removal of some of the air.

In patients undergoing DSAEK or DSEK, the donor endothelium is attached to a small layer of stroma. Although the cornea can be remarkably clear postoperatively in these patients, vision may be less than anticipated, probably due to the fact that the extra stromal layer creates a more irregular optical interface.

**Complications and follow-up**

DMEK may produce better visual acuity outcomes since no stroma is transplanted. However, it is a more complicated technique with challenges such as getting the Descemet’s membrane to stick to the cornea. Most surgeons prefer DSEK or DSAEK, Dr. Stanfield said.

Potential complications of DSEK and DSAEK include infection, graft dislocation, cleft formation, elevated intraocular pressure (IOP), angle closure, epithelial defects, and wound leaks. Infections, such as endophthalmitis, are rare. While peripheral clefts are common, they don’t affect visual acuity.

Since DSAEK and DMEK require frequent injections of air to maintain graft position, most of the follow-up is performed in a surgical setting. Measures to be taken on the same day as surgery include checking IOP and observing graft position. The following day, check visual acuity and tension and observe graft position and corneal clarity.

Patients should be observed for pupillary block, which can occur when a large air bubble is left in the anterior chamber. The bubble can obstruct the pupil, causing angle closure with markedly elevated IOP. In this case, treatment is to position the patient’s head so that the bubble does not block the pupil, remove air, or perform an inferior laser peripheral iridotomy.

Patients should use a topical corticosteroid and an antibiotic every 2 hours for the first week, then discontinue the antibiotic and taper steroid use over a period of several months, depending on the degree of ocular inflammation. Unless a steroid complication is noted, patients will be maintained on a low dose of topical steroid indefinitely. If a steroid response is observed, options include treatment with Lotemax (loteprednol etabonate, Bausch + Lomb) Q.D., or discontinuation of the steroid, followed by observation for signs of graft rejection.

‘While EK may never completely replace PK, the newer, less invasive procedures are likely to become more widespread.’

David Stanfield, OD, FAAO

If there is any suggestion of graft rejection, which may occur even if the patient is asymptomatic, it is critical to start the patient on a frequent regimen of corticosteroids until the rejection has been resolved.

“While EK may never completely replace PK, the newer, less invasive procedures are likely to become more widespread,” Dr. Stanfield said. “This procedure is going to get better and better with time,” he added, citing advancements in donor tissue preparation and the potential of using embryonic stem cell-derived endothelial cells.

**FYI**

David Stanfield, OD, FAAO
Phone: 360/748-8632
E-mail: david.stanfield@pcli.com
Dr. Stanfield has no financial disclosures.
IN MY PATIENT’S EYES, I AM THE ONE

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Enhanced armamentarium

Expanded surgery options address limitations of trabeculectomy

Trab remains the gold standard for now, but new procedures may offer safety advantages

By Cheryl Guttman Krader
Reviewed by Kathy Williams, OD

Boston—The glaucoma surgery armamentarium has increased in recent years to include several alternatives to trabeculectomy with potential safety advantages. Trabeculectomy, however, remains the gold standard, as surgeons await more robust outcomes data for the newer techniques, said Kathy Williams, OD, at the annual meeting of the American Academy of Optometry.

“Trabeculectomy continues to be the preferred procedure when glaucoma patients need surgical intervention, and particularly when more aggressive IOP lowering is needed,” said Dr. Williams, a private practitioner in Seattle.

“The potential for serious complications in the early postoperative period after trabeculectomy and the ongoing risk for bleb-related complications, however, have motivated interest in identifying safer alternatives,” she continued.

“Several new procedures are now available and each has its own advantages and disadvantages. Limited efficacy data, however, is one of the major factors influencing their adoption,” Dr. Williams noted.

“While the number of publications for these procedures is growing, these reports tend to be interventional case series with relatively short follow-up and using varying criteria for defining surgical success. Therefore, it is hard to know how the new procedures compare with trabeculectomy or with each other and to determine what procedure is best for individual patients,” she said.

Dr. Williams discussed a penetrating procedure using a proprietary glaucoma minishunt (EX-PRESS, Alcon) that diverts aqueous humor from the anterior chamber to the subconjunctival space, and two nonpenetrating surgeries—a canoloplasty with tensioning suture placement and ab interno trabeculectomy using a microcatheter device (Trabectome, NeoMedix).

She explained that although the minishunt procedure is still penetrating surgery, it is less invasive than trabeculectomy and carries less risk of bleeding because there is no need for performing sclerectomy or iridectomy. In addition, because the device creates a standardized, consistent opening through the sclera, there is less chance for postoperative hypotony compared with trabeculectomy.

‘The potential for serious complications in the early postoperative period after trabeculectomy and the ongoing risk for bleb-related complications, however, have motivated interest in identifying safer alternatives.’

Kathy Williams, OD

Dr. Williams noted that the procedure for implantation of the minishunt has evolved over time. It was originally implanted under the conjunctiva, but now the device is placed under a scleral flap. This approach has been associated with a high success rate, along with a reduced chance of postoperative hypotony and device erosion compared with the earlier technique.

Canaloplasty opens Schlemm’s canal to restore circumferential flow of aqueous from the canal to the collector channels. It is

Ab interno trabeculectomy performed using a proprietary electrocautery device (Trabectome, NeoMedix). (Photo provided by NeoMedix Inc.)
performed using a flexible microcatheter (iTrack 250A, iScience Interventional) that goes circumferentially around Schlemm’s canal. Then, the canal is dilated using a viscoelastic agent (Healon GV, Abbott Medical Optics). Next, the surgeon passes a 10-0 polypropylene tensioning suture through the circumference of the canal to create tension on the inner wall of the canal for sustained IOP reduction.

“The technically challenging nature of the procedure has been a factor limiting its adoption despite data demonstrating its efficacy and safety.”

Kathy Williams, OD

“Although the rationale for the suture placement during canaloplasty is to stent open Schlemm’s canal in order to reduce IOP, its mechanism of IOP-lowering action is still not completely understood,” Dr. Williams said.

She added that there is a significant learning curve involved in performing successful canaloplasty in terms of identifying the entrance into Schlemm’s canal during dissection of the deep scleral flap and exposure of Descemet’s window.

“The technically challenging nature of the procedure has been a factor limiting its adoption despite data demonstrating its efficacy and safety,” Dr. Williams noted.

Positive 3-year outcome data from a prospective, international clinical trial of canaloplasty were recently reported showing sustained IOP control with reduced patient dependence on medications, a low rate of complications, and minimal need for postoperative intervention [J Cataract Refract Surg 2011;37:682-690].

Ab interno trabeculectomy is performed using a proprietary electrocautery device to selectively ablate trabecular meshwork tissue and the inner wall of Schlemm’s canal in order to restore aqueous outflow. The ablation targets the juxtacanalicular region that is considered the site of greatest resistance to aqueous outflow in patients with primary open angle glaucoma, Dr. Williams explained.

The procedure is based on goniotomy, which historically has been the treatment of choice for pediatric patients with congenital glaucoma, and it is performed using a direct goniolens to identify the surgical site. Data from postmarketing studies show that IOP can be maintained in the 15 to 17 mm Hg range over a period of 5 to 6 years after surgery.

“Ab interno trabeculectomy has significant advantages in that it is essentially a blebless procedure without risk of bleb infection, and it also spares the conjunctiva in the event that additional surgery will be required at a later date,” Dr. Williams said.

In conclusion, she said, “Compared with canaloplasty, the ab interno trabeculectomy procedure has a steeper learning curve and, for that reason, it has been relatively well adopted not only by glaucoma surgeons, but also by cataract surgeons. For patients with cataract who require a moderate reduction in IOP, a combined procedure with phacoemulsification and ab interno trabeculectomy can be done through the same clear corneal temporal incision.”

Focal Point
Canaloplasty opens Schlemm’s canal to restore circumferential flow of aqueous from the canal to the collector channels. It is performed using a flexible microcatheter (iTrack 250A, iScience Interventional) that goes circumferentially around Schlemm’s canal.

A proprietary glaucoma minishunt (EX-PRESS, Alcon) diverts aqueous humor from the anterior chamber to the subconjunctival space. (Photo provided by Alcon Laboratories Inc.)

Histopathology of tissues before, at left, and after, right, following ab interno trabeculectomy using a microcautery device (Trabectome, NeoMedix). (Photo provided by NeoMedix Inc.)

Kathy Williams, OD
E-mail: kyangwilliams@gmail.com
Dr. Williams has no relevant financial disclosures.
DRY EYE IS A DISEASE WHICH MAY PROGRESS AND IMPACT PATIENTS’ LIVES

Dry Eye is a multifactorial disease that may result in discomfort, visual disturbance, and tear film changes. Inflammation, hormonal imbalance, age, and environmental triggers all play a role. These factors set in motion a self-perpetuating series of events that affect the ocular surface, lacrimal glands, meibomian glands, and the neural network. This changes tear quantity and quality, which can damage the corneal epithelium, the tissue protected by the tear film, resulting in:

- **Increasing symptoms** As the disease alters the tear film and the ocular surface, patients can experience grittiness, foreign body sensation, burning, and itching.

- **Increasing visual alterations** Small changes—such as reduced viscosity or thickness—may significantly impact vision quality, primarily contrast sensitivity. These changes to the tear film and corneal irregularity may be responsible for blurred and fluctuating vision.

- **Impact on daily activities** These visual alterations and symptoms can significantly increase difficulty with work, night driving, computer use, reading, and contact lens wear. Working on a computer can become challenging as the eyes constantly strain to correct tear film changes. Driving at night can become difficult due to fluctuating vision, reduced contrast sensitivity, and increased glare.

INITIATE THE DRY EYE DISCUSSION WITH YOUR NEXT PATIENT

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Dry eye impacts my computer use, reading, driving...
Diagnostic possibilities

Functional testing plays central role in care of glaucoma patients

Practitioners should ensure that visual field testing remains the cornerstone of care

By Cheryl Gutman Krader
Reviewed by Michael Chaglasian, OD

Salt Lake City—Visual field testing (VFT) can be frustrating for patients, but it should remain a core component of patient care because it provides essential information about glaucoma progression, said Michael Chaglasian, OD, at Optometry’s Meeting.

Take-Home Message

Despite advances in structural imaging technology for evaluation of glaucomatous damage, visual field testing continues to play a critical role for detection of disease and its progression.

“Recently, a lot of emphasis has been placed on the use of structural analysis using optical coherence tomography (OCT) technology, but [VFT], while subjective and reliant upon patient cooperation, is here to stay. Although results of the Ocular Hypertension Treatment Study (OHTS) showed progression to glaucoma was most often diagnosed by optic disc changes, a repeatable change on the visual field was the first indication of glaucoma in 35% of patients. In addition, at this point in time, progression analysis for perimeter outperforms structural analysis of disease change with OCT instruments,” said Dr. Chaglasian, chief of staff, Illinois Eye Institute, Chicago.

“As a bottom line,” he continued, “identifying progression in glaucoma is difficult, and no single modality of evaluation should be used in isolation. Monitoring requires a combination of visual fields, structural analysis, and clinical and photographic assessment. Clinicians should become comfortable with all of these tools and know the strengths and limitations of the systems they are using in order to optimize individual patient care.”

VFT, the gold standard

Currently, standard automated perimetry—white-on-white—remains the gold standard for VFT in glaucoma. Dr. Chaglasian recommended using threshold algorithms, noting he most frequently uses the 24-2 SITA-standard program (Humphrey Field Analyzer [HFA], Carl Zeiss Meditec). Programs with a similar test pattern and number of stimulus locations are available on instruments from other manufacturers.

“A 30-2 visual field with more test points than a 24-2 is not necessary for identifying early change in glaucoma and faster algorithms, such as SITA-Fast, do not have the best accuracy because they produce too many false positives. Standard 24-2 threshold perimetry is quick and efficient enough and is more reliable due to the shorter test time,” Dr. Chaglasian said.

In evaluating serial visual fields, clinicians must recognize that in eyes with early glaucomatous functional loss, fluctuation in the location of defects is not uncommon. Data on the repeatability of visual function testing from the large, randomized, controlled OHTS showed that 86% of abnormal and reliable fields were not confirmed on retesting.

Other data from OHTS showed that a visual field abnormality confirmed by three consecutive, reliable results offered greater specificity. Yet, some eyes with three abnormal tests still

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Figure 1. Visual Fields as presented with Guided Progression Analysis (Carl Zeiss Meditec) showing a nasal step in a patient with uncontrolled glaucoma that increases in severity over 9 years. The Visual Field Index (VFI) trend lines clearly display the negative slope of progression. The patient had been non-compliant with his medications. Laser trabeculoplasty was recommended. (Chart provided by Michael Chaglasian, OD.)
had a normal test on subsequent follow-up. “This reminds us of the need to carefully evaluate any field abnormality and to be cautious about making a diagnosis just based on a single visual field for a patient,” Dr. Chaglasian told *Optometry Times*.

Software help

Fortunately, validated software for analysis of visual field progression (e.g., Guided Progression Analysis for the HFA; Eyesuite Progression Analysis for Octopus, Haag-Streit) is widely available and represents a valuable tool for tracking glaucoma patients over time and guiding clinical decision-making. Discussing Guided Progression Analysis (GPA), Dr. Chaglasian noted that the statistical program minimizes effects of random variability and was developed using data from the Early Manifest Glaucoma Trial. However, he cautioned that while the software is excellent, nothing is perfect.

‘At this point in time, progression analysis for perimetry outperforms structural analysis of disease change with OCT instruments.’

Michael Chaglasian, OD

“It is still important for the clinician to look at the details, including reliability indices, of the visual field test results,” Dr. Chaglasian said.

Part of the GPA software for the HVFA is the Visual Field Index (VFI), which graphically and numerically represents a summary measurement of the individual’s visual field expressed as a percent of a normal age-adjusted visual field. The VFI weighs central points more heavily than those in the periphery, and it reduces cataract contribution to the measurement of visual field loss.

“Essentially it is an enhanced mean deviation index. A trend analysis using the VFI provides a 5-year prediction of future rate of progression for the patient and so, for the first time, practitioners have a tool for helping them understand what is likely to happen to their patient if the management plan is changed and IOP lowered,” Dr. Chaglasian said. In order to get this extrapolation of future change, the patient must have completed five reliable tests. In general, patients become noticeably functionally impaired once the VFI falls to 60%.

Other new developments

Carl Zeiss Meditec also has introduced a new image management system software product (Forum Viewer). This PC program holds and displays many types of printouts and images from a variety of imaging devices. It centralizes images from OCTs, fundus and anterior segment cameras, perimeters, and other devices, and allows them to be organized and viewed at the doctor’s discretion.

Similar software is available from other manufacturers and others will be forth-coming. The ability to view patient’s visual fields along with OCTs and photos simultaneously on a PC monitor makes it a little easier for clinicians who are trying to correlate and compare functional loss with structural damage.

“Considering the variability in functional test results, correspondence when combining structure and function can increase one’s confidence about diagnosing progression. Ultimately, however, we would like to see software that performs an actual analysis of correlations between structure and function data,” Dr. Chaglasian said.

Looking ahead, optometrists can expect to see some new developments in selective functional testing, including enhancements to frequency doubling technology (Humphrey Matrix, Carl Zeiss Meditec), and possibly the introduction of a new platform (Heidelberg Edge Perimeter, Heidelberg Engineering) offering standard white-on-white automated perimetry, plus a new form of perimeter that uses a unique stimulus (Flicker-Defined-Form).

The latter technology preferentially tests the magnocellular system, and appears to pick up visual field defects earlier than white-on-white perimeter, and more accurately than frequency doubling technology with less test-retest variability, Dr. Chaglasian said.

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**FYI**

Michael Chaglasian, OD

E-mail: mchaglas@icu.edu

Dr. Chaglasian has received research support from Heidelberg Engineering and is on the speakers’ bureau for Carl Zeiss Meditec.
Data patterns are predictors of glaucoma medication use

Ophthalmic drug use patterns can help target patients at risk for non-use, non-compliance

**NHANES analysis**

By Cheryl Guttman Krader
Reviewed by Mark Swanson, OD, MSPH

**Boston**—Research investigating the epidemiology of IOP-lowering medication use in the U.S. population will hopefully suggest targets for efforts designed to improve medication access and patient care, said Mark Swanson, OD, MSPH, at the annual meeting of the American Academy of Optometry.

The study analyzed pooled data from two capture periods (2005-2006 and 2007-2008) of the National Health and Nutrition Examination Survey (NHANES). The database was searched for ophthalmic drugs used for IOP-lowering. Estimates of distribution were calculated for glaucoma drug usage and medication type across various sociodemographic subgroups, and multivariate regression analyses were conducted to identify associations between sociodemographic variables and glaucoma medication use.

**NHANES study data**
The study of glaucoma medication usage was an outgrowth of an original project Dr. Swanson had undertaken designed to investigate overdiagnosis and underdiagnosis of glaucoma in the United States based on data captured in NHANES. NHANES is an ongoing survey program run through the Centers for Disease Control and Prevention (CDC) that is designed to collect information on vital and health statistics for the United States.

Based on the NHANES methodology, its database is considered a good resource for estimating usage of IOP-lowering medications in the population and sociodemographic variables associated with its use. However, Dr. Swanson acknowledged there are some limitations.

“As it applies to interpreting the results of this study, the major limitation of the NHANES data is that we do not have information on glaucoma filtering or laser surgery and so we cannot determine how the data on medication use might have been influenced by that history,” he said.

Overall, the analyses found that a very small minority of the population was using an IOP-lowering medication (only 0.72%) and the rate of glaucoma medication use among the subgroup of study constituents with self-reported glaucoma was also relatively low at about 27%.

Results of the multivariate model showed the likelihood of glaucoma medication use increased with increasing age and was significantly greater among African-Americans compared with whites, while individuals at the near poverty level were significantly less likely to be using medications for IOP-lowering compared with a reference group in the highest income category, reported Dr. Swanson, associate professor of optometry, and chief, oculary disease service, School of Optometry, University of Alabama at Birmingham.

**Socioeconomic factors**
“The identification of individuals at the near poverty level as an at-risk group makes intuitive sense considering people at this rung of the socioeconomic ladder probably don’t qualify for state-sponsored health and prescription drug programs and don’t have high enough income to afford their own insurance,” he said.

“We hope this research will help us to identify subpopulations of patients at-risk for drop out from medication use so that we can develop targeted interventions for improving glaucoma care,” he added.

With the population stratified by age, the usage rate of IOP-lowering medications increased

See Predictors on page 21
Compliance

Continued from page 1

compliance,” said Dr. Thimons, medical director, Ophthalmic Consultants of Connecticut.

Data from numerous large studies investigating medication use among glaucoma patients demonstrate high rates of noncompliance. In one of the most revealing studies, Nordstrom et al. (Am J Ophthalmol 2005;140:598-606) found that dosing frequency was an important factor in determining both medication persistence and adherence.

Rates with other agents

Even in the best-case scenario (representing the subgroup prescribed a Q.D. prostaglan-
din analogue) only about 50% of patients re-
mained on their medication at 1 year post-
initiation. The persistence rate was 25% or lower for patients prescribed medications from other classes of IOP-lowering agents, and lowest for patients on beta blockers. Dr. Thimons suggested that his could be explained by the greater risk of systemic side effects with beta blockers compared with carbonic anhydrase inhibitors or alpha agonists.

Data from follow-up to 3 years showed persis-
tence rates generally remained at the level they had reached at 1 year, indicating that patients who initially show poor medication compliance will likely maintain that behavior in the future if it is not addressed, Dr. Thimons said.

Results from studies conducted in patients with glaucoma as well as in hyperten-
sive and diabetic populations also show that patients with chronic diseases on average use their medication about 50% of the time, and that compliance is improved by simplifying the dosing regimen.

“There is a wealth of literature showing poor medication compliance is not just an issue for glaucoma, and so a lot of the lessons we have learned on how to deal with this prob-
lem have evolved out of literature from internal medicine and other specialties,” he said.

Address the elephant in the room

The first step to dealing with non-adherence is to identify it, and so a discussion about medi-
cation use between the patient and the eye-
care professional should be included in every follow-up visit. Clinicians, however, should recognize that patients generally do not want to disappoint them. Therefore, the best way to elicit honest information is to investigate medication use by asking a direct, open-ended question, said Dr. Thimons.

“Patients want to please their doctors and avoid disapproval. Therefore, if they are asked whether they are using their medication as prescribed, they are likely to answer ‘yes,’ whether or not it is true,” he observed.

“A better approach is to ask patients to de-
scribe how they are using their medications. Patients who are not compliant are less likely to be able to give the proper information. Re-
assuring patients that non-adherence is com-
mon and educating them that accurate infor-
mation on adherence is important for thera-
peutic decision making are also important elements for creating an environment where patients will feel comfortable giving truthful information,” said Dr. Thimons.

Results of a study by Mazze et al. (Am J Med 1984 Aug;77(2):211-217) involving glucose monitoring in a type I diabetes population provide a powerful demonstration of how pa-

tients will provide erroneous information to please their doctors. In this investigation, pa-
tients were given a glucose meter and asked to keep a 2-week log of their blood glucose results along with the time and date of the test. Unknown to the participants, the glucose meter contained a memory chip that captured and stored the test information.

Comparison of the electronically and self-
recorded data showed three-fourths of the patients recorded glucose values that were lower than the actual result, two-thirds under-
reported hypoglycemic or hyperglycemic episodes, and 40% entered fictitious data in their logs, writing in test times and results for measurements that were never taken.

“A corollary for this type of behavior among glaucoma patients is the diligent use of IOP-
lowering drops for a few days prior to a sched-
uled visit, resulting in an IOP level that sug-
gests good control,” Dr. Thimons said.

Predictors

Continued from page 20

from being minimal, 0.2%, among individuals less than age 40 to almost 6% in the oldest age group of those aged 80 years and older.

“Although overall usage of glaucoma med-
ications in this study was highest in the 80 years and older age group, based on some other research I’ve done, the gap between the number of people who have glaucoma and the proportion using drops is also widest in this oldest age group,” Dr. Swanson said.

In analyses of the data with the participants divided by race-ethnicity, glaucoma medica-
tion use was most common among whites.

“Currently, whites make up the overwhel-
making majority of the older adult population in the United States and about 65% of glaucoma patients, but they account for more than 75% of glaucoma drop use. We know, however, that glaucoma prevalence is much higher among mi-

orities, and particularly blacks. Taken together, this information suggests that minority popula-
tions are not getting the medications to the ex-
tent they are needed,” commented Dr. Swanson.

Analysis by gender, med users

Analysis of data by gender showed men were less likely to be using IOP-lowering drops than women, even though glaucoma occurs about equally among men and women.

Analyses conducted to identify rates of use of different glaucoma medications showed that timolol was the single most common drug, due to its use as a single drug and in combi-
nation products, followed by latanoprost (Xa-
latan, Pfizer). The three major prostaglandin analogue drugs together accounted for over 40% of the glaucoma medications used, how-
ever, while beta-blockers or beta-blocker com-
binations accounted for just over one-third.

The majority of glaucoma medication users, about two-thirds, appeared to be on monotherapy. Among constituents using a two-drug com-
bination, a prostaglandin plus a beta-blocker was the most common combination used.

“Optometrists are often given a message that beta-blockers should be avoided, but at least during the period of time covered by this study, they continued to be a major treatment modality for glaucoma. This may change in coming years particularly as prostaglandin analogues are available as generics. Outside of timolol, use of the other legacy beta-block-
ners has become fairly rare,” Dr. Swanson said.

In multivariate analysis, African-American and Mexican-American ethnicity were the only variables that were significantly associ-
ated with an increased likelihood of using mul-
tiple drops.

FYI

J. James Thimons, OD
E-mail: jthimons@sbccglobal.net
Dr. Thimons is a consultant for or on the medical advisory board for a number of companies that manufacture products used in glaucoma management.

Mark Swanson, OD, MSPH
E-mail: mswanson@uab.edu
Dr. Swanson receives grant funding through the CDC.
Scleral lenses
Continued from page 1

larger than the limbus are supported by the sclera, and thus comes the term ‘scleral lens.”

These are often broken down into categories that include:

- Mini scleral lenses: 14.5 to 15.8 mm
- Semi-scleral: 15.8 to 18.0 mm
- Corneal scleral: 18.0 to 24.0 mm

A variety of patients can potentially benefit from scleral lenses, he continued. For example, in a patient who had a transplant with sutures still in place, a rigid lens increases risk for abrasions and infections. A scleral lens will not come in contact with these sutures, and can be put on for good optics.

For patients with advanced ocular surface disease, lid margins problems, or a vascularized cornea, a scleral lens covering a larger area can be the solution. The fluid reservoir can nurture the ocular surface and may even be a reservoir for therapeutic medications. In patients who have undergone radial keratotomy, who may have very plateaued corneas, a scleral lens also is a good option. Think of scleral lenses for patients with elevated corneal scars or nodules, he said.

Dr. Myrowitz offered some pearls for fitting and removing scleral lenses.

“The first rule of thumb is minimal to no touch on the limbus. You also don’t want any touch in the center of the cornea. Look for some clearance in the limbus because stem cells are sensitive to compression,” he said.

“Once you have some clearance centrally, some vaulting peripherally at the limbal area, then look at alignment in the very periphery, often gaining information from the conjunctival vessels. If the edge of the lens is compressing the conjunctiva, you will see blanching and/or stagnation of the blood vessels over time, and when the lens is removed, you will see a compression ring,” he continued.

Dr. Myrowitz will first fit patients with a scleral lens, then has them sit with the lenses in the waiting room for 30 minutes. He then reviews the fit, over-refracts again, and removes the lens with a DMV contact lens remover.

Do not remove the lens from dead center as you would a conventional lens, he advised. Do not go straight in and straight out, he noted, because that is where the most suction will develop. Instead, remove from anywhere off-center of the lens.

“Wet the DMV contact lens remover. Then, when you remove the lens, instead of going in perpendicularly to the eye, I usually go in from the 6 o’clock position and use a rocking motion. The lens will simply pivot and come off. If you go from dead center, the lens may not come off as easily, and you may irritate the eye trying to break the suction,” he said.

If the suction is too tight, then the fit is probably too tight, Dr. Myrowitz concluded.

More information is available at the Scleral Lens Education Society, www.sclerallens.org. OP

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**Take-Home Message**

Patients who do not see well with glasses and who have difficulty wearing conventional contacts may benefit from scleral lenses, particularly patients with advanced irregular corneas and advanced ocular surface disease.

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**FYE**

Elliott H. Myrowitz, OD, MPH

Phone: 410/583-2800
Fax: 410/583-2842
E-mail: emyrowitz@jmi.edu

Dr. Myrowitz has no financial interest in the subject.

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Staffing solutions

Outsourcing can create savings

Contracting knowledgeable vendors ensures highly skilled professionals will handle responsibilities

By Carol Patton
Reviewed by S. Barry Eiden, OD, FAAO

Outsourcing key aspects of practice management is a no-brainer for S. Barry Eiden, OD, FAAO. His philosophy is to outsource responsibilities that no one in his office is skilled at or trained to handle. Otherwise, the learning curve may be too high, resulting in costly mistakes and unprofessional outcomes.

Take-Home Message

Dr. S. Barry Eiden
Phone: 847/412-0311
E-mail: sbeiden@nsvc.com

Dr. Eiden has worked with several technology firms over the past decade to help his practice reach specific goals, including building a Web site (www.nsvc.com) and blog (www.nsvc.com/blog) known for its educational content regarding eye care, health, and treatment.

The same holds true with Dr. Eiden’s public relations firm. Whether his practice receives exposure in print or on TV, radio, or the Internet, he said many new patients point to his Web site or public relations efforts as the reason they come to his practice.

‘Most medical practices today are highly dependent upon insurance for payment. The faster and more accurately your claims are submitted, the faster you’ll be paid.’

S. Barry Eiden, OD, FAAO

While Dr. Eiden can’t supply concrete numbers, he said new patient revenues have exceeded the amount he pays for outsourcing technology, public relations, and marketing, which costs less than 2% of his practice’s monthly revenues.

What he outsources next is anybody’s guess. But one thing is certain. Dr. Eiden sleeps well at night, knowing key aspects of his business are in the hands of professionals.

“I want to make sure these things are done properly,” he said. “Everything goes back to professionalism. I work only with organizations that are highly professional, which is an accumulative effort.”

Dr. Eiden did not indicate a financial interest in the subject.

When S. Barry Eiden, OD, FAAO, began practicing optometry 20 years ago, he processed the payroll for his then-small staff. “What an inconvenience,” he recalled, explaining that it consumed a lot of his time. Dr. Eiden had two choices: Either assign the task internally to an employee who would need to be trained in payroll, or outsource the activity.

He chose the latter and has no regrets. By outsourcing, Dr. Eiden found that he doesn’t have to worry about changing government laws, employment taxes, or human resource regulations. His 15 employees now have perks they didn’t have before, such as direct deposit. Best of all, they’re free to focus on what counts most: delivering quality patient service.

Reasons for outsourcing

Many medical practices outsource a variety of business functions for different reasons. Dr. Eiden’s philosophy is to outsource responsibilities that no one in his office is skilled at or trained to handle. Otherwise, the learning curve could be sky high, which could result in costly mistakes and unprofessional outcomes.

“That’s the last thing I want for our practice,” he said. “Everything has to be at the highest level of professionalism.”

So, 10 years ago, Dr. Eiden, who practices at North Suburban Vision Consultants in Deerfield, IL, hired a firm to develop and manage his Web site. As his business needs changed and became more sophisticated, so did his Web site vendors.

Dr. Eiden’s practice Web site has been redesigned three times. Now he uses a firm with expertise in search engine optimization and social networking—but more enhancements were to come. Roughly 5 years ago, he outsourced medical coding and billing and then, 2 years later, he added public relations.

Outsourcing benefits

The benefits of outsourcing each of these areas continuously pay for themselves, Dr. Eiden said. For example, if payroll is processed in-house, he would have to hire an additional, full-time staff member dedicated to this function.

The employee would also have to file quarterly payroll and tax reports as required by state and federal government, and periodically process reports for the practice that contain information involving workers’ compensation or its profit sharing plan.

Dr. Eiden said for the cost of less than one tenth of 1% of his practice’s monthly revenues, all of these reporting functions and headaches disappear.

Likewise, consider the advantages of outsourcing medical coding and billing. He remembered the old days when medical services were accidentally miscoded and submitted to insurance companies for reimbursement. The insurers routinely kicked back these claims, which then required more staff time to resubmit these claims with the correct codes, which delayed the cash flow.

That scenario hasn’t occurred in years, he said, because his billing service “scrubs” each claim, reviewing the codes for accuracy before submitting to insurers. The service isn’t exactly cheap. His practice is charged a percentage of all money collected. (Dr. Eiden declined to reveal the amount.)

Pay to profit

Dr. Eiden weighs the cost of outsourcing against the salaries and benefits of the additional two to three full-time employees needed to perform this task. After adding everything up, he believes he’s still coming out far ahead.

“Using an outside service for billing and coding is one of the most important things we do,” he said. “Keep in mind that most medical practices today are highly dependent upon insurance for payment. Outsourcing firms have certified coders and billers and their computer systems are linked into virtually every single payor in the U.S. The faster and more accurately your claims are submitted, the faster you’ll be paid.”

Outsourcing technology demands is often a no-brainer. Many optometry practices don’t possess the in-house technical skills needed to install computer networks or systems or develop and manage a Web site.

While Dr. Eiden can’t supply concrete numbers, he said new patient revenues have exceeded the amount he pays for outsourcing technology, public relations, and marketing, which costs less than 2% of his practice’s monthly revenues.

What he outsources next is anybody’s guess. But one thing is certain. Dr. Eiden sleeps well at night, knowing key aspects of his business are in the hands of professionals.

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FYI

Dr. S. Barry Eiden
Phone: 847/412-0311
E-mail: sbeiden@nsvc.com

Dr. Eiden did not indicate a financial interest in the subject.
Marketing 101

Emotions are powerful marketers

Find your practice's unique emotional appeal, and sell its lifestyle benefits to your patients

By Ron Rajecki
Reviewed by Gary Gerber, OD

Franklin Lakes, NJ—Emotions play a key role in successfully marketing your practice, according to Dr. Ron Rajecki, OD, founder and president, The Power Practice, Franklin Lakes, NJ.

Many optometrists know that it’s better to sell the benefits of the product—what it will do for the patient—rather than to sell the features of the product itself. To take that concept to the next level, Dr. Rajecki advised targeting your marketing to appeal to patients’ emotions.

“Take the case of a patient who needs progressive lenses,” Dr. Rajecki said. “We can sell the fact that we can offer lightweight, no-line lenses that will allow the patient to enjoy all the benefits of good near, intermediate, and distance vision, but the patient is still thinking, ‘Needs this product means I’m old, so I don’t want it.’ A better way to sell is to tell patients, ‘These progressive lenses, in these stylish frames, will make you feel younger.’ We’re not selling vision, we’re selling youth.”

Uncovering the emotion

Dr. Gerber’s advice may evoke a little bit of the television drama “Mad Men,” which takes place at an ad agency in the 1960s.

As an example of marketing to emotions, he pointed out that, for many years, ads for LASIK correction successfully capitalized on emotional appeals. “The ads didn’t talk about vision correction. They showed people rock climbing and white water rafting,” Dr. Gerber said. “We need to sell the lifestyle that our products can provide.”

When a mother brings in a teenager who would like to switch from glasses to contact lenses, the appeal is to the mother.

“We tell the mother how contact lenses can help bring shy kids out of their shells, make them more outgoing and confident,” Dr. Gerber said. “What mother doesn’t want her child to reach his or her full potential? We’re selling something that’s well above and beyond contact lenses and vision. We’re selling a life-changing event.”

Dr. Gerber said the ability to sell emotional appeals stems from having a good positioning statement, a good definition of your services, and a clear idea of how your practice is different from others in your area.

“Many optometric practices direct their marketing and advertising inward,” he said. “They talk about their doctors, their years of experience, the brands they carry, and so on. They fail to identify their ‘unique selling proposition,’ and convey that to patients. You don’t have to give patients a reason to visit an optometrist; you have to give them a reason to visit you.”

Exploit your USP

Once a practice has analyzed itself and arrived at what makes it different and unique, Dr. Gerber said it’s important to use that unique selling proposition (USP) and not waiver from it. A common mistake optometrists make is failing to stick to a long-term marketing plan, especially if they don’t see immediate results.

“You really need to kind of put a stake in the ground and say, ‘This is truly who we are: we’re the Nordstrom of eye-care providers,’ and stick to that and not waiver,” Dr. Gerber said. “Of course, if you do it for a long time, a year or so, and it’s not working, then you probably picked the wrong stake. But that’s pretty rare if you’re focused and know your business—and know what your competitors are or aren’t doing.”

Other tips from Dr. Gerber:
• Remember that in any advertising and marketing strategy, consistency and repetition are important.
• Have a functional Web site, not just an informative one. “Design your Web site to allow patients to interact with your practice,” Dr. Gerber said. “Patients should be able to book appointments, fill out a history sheet, and obtain their HIPAA privacy paperwork in advance of their visit. Give patients a practical reason to go to your site, and they’ll generally choose to spend more time there and shop around your other content.”

• Look for opportunities to market yourself to a “ready made” group of patients. For example, visit your local driver’s license bureau and see if you’re allowed to leave cards for people who don’t pass the vision portion of their driving exam. Reach out to school nurses and bring them free samples of contact lens solution and contact lens cases. Identify and introduce yourself to key people who can refer patients to your practice.

‘You don’t have to give patients a reason to visit an optometrist, you have to give them a reason to visit you.’

Gary Gerber, OD

• Look for opportunities to garner free publicity. Dr. Gerber suggested sponsoring a small scholarship of $500 for the top science student at the local high school. Invite the local media when you present the student with a check, and create a wall of photos in your office of you and the other doctors in your practice presenting science scholarships.

In conclusion, Dr. Gerber said that in all advertising and marketing endeavors, features inform, benefits entice, but emotions sell.
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**Music man**

**OD marches to the beat of a different drummer**

Optometrist Anthony Dieciedue has played drums in local bands since he was 12 years old

**By Carol Patton**
Reviewed by Anthony Dieciedue, OD

As the drummer for Smooth, a popular jazz band that routinely plays at venues throughout the Poconos, Anthony Dieciedue, OD, can’t remember a time when he wasn’t playing the drums or performing with other band musicians. The 57-year-old optometrist, who practices at Eye Associates of Monroe County in Stroudsburg, PA, is a local celebrity who has been playing in front of audiences ever since he was 12 years old.

That’s when the music teacher at his elementary school introduced students to a variety of band instruments. The drums immediately captured his eye and heart. So much so that his father purchased his first drum set—which didn’t include earplugs—when he turned 11 years old.

Dr. Dieciedue kept at it, practicing, playing, and performing. At age 12, he performed in a small orchestra for the school’s annual musical. Later that year, he formed a rock ‘n’ roll band that performed at a children’s Christmas concert. For the next several years, he played with performers and bands around town.

‘As long as I get out and play once in a while, that’s all I need.’

Anthony Dieciedue, OD

It wasn’t until Dr. Dieciedue turned 16 that he took his first road trip. “An organ player called me, asking if I wanted to play a job in Harrisburg, which was about a 2-hour trip and an overnighter,” he recalled, adding that payment was dinner and gas money. “For a teenager, an overnighter was the ultimate gig.”

As his musical abilities continued to develop, so did his reputation. During the summer before his senior year in college, he met an Elvis impersonator who needed a drummer to perform with his band at different venues throughout Saskatchewan, Canada. At the time, Elvis was still very much alive and popular. Dr. Dieciedue said he was never a big fan of Elvis’ music, but the money was decent and the opportunity was great, so off he went.

“Even though we weren’t all that good and he definitely was not a great Elvis impersonator, we were the hit of every town we went to,” Dr. Dieciedue said. “Each town’s population was about five. They were definitely starved for entertainment up there.”

While Dr. Dieciedue didn’t fill stadiums, jet across Europe, or attract groupies outside of friends and family, he has played with bands in local demand for nearly 40 years.

The beat goes on

Through the decades—as music evolved from rock ‘n’ roll to disco to rap to rhythm and blues—Dr. Dieciedue kept pace. He took lessons from a renowned jazz drummer, Mike Stephens, who moved from California to the Poconos. Dr. Dieciedue made several CDs with other musicians including his brother, a jazz guitarist who lives in nearby Harrisburg, PA.

“My skills have gotten a bump in improvement in the past few years,” he said, adding that his band’s songs can be downloaded at www.smoothjazzband.net. Dr. Dieciedue also created his own Web site, www.myspace.com/tonydieciedue, which features recorded songs and videos of his recent performances.

Looking back, Dr. Dieciedue said he enjoys both professions. Drumming keeps him fresh, he said, adding that it’s also a healthy and safe diversion from work, and a huge source of pleasure that helps keep him sane.

Long and winding road

Dr. Dieciedue has come a long way since he drummed his first song, “Wipeout,” a popular surfing song back in the 1960s. This past summer, Smooth also performed every weekend at Mount Airy Casino in the Poconos and is now booked roughly twice a month for various festivals, parties, weddings, and other venues.

Meanwhile, Dr. Dieciedue’s youngest son has inherited his father’s love of music. He plays trumpet in his high school jazz band.

Although Dr. Dieciedue has no intention of auditioning for America’s Got Talent anytime soon, he said that he’s happy with the way things turned out. Once in a while, fans even ask for his autograph. He claimed modestly that these requests come mostly from children but, more than likely, it’s the kids’ parents who want his autograph and are simply too shy to ask.

“I’m old enough to realize this is how it’s going to be,” he admitted. “As long as I get out and play once in a while, that’s all I need.”

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F.Y.I

Anthony Dieciedue, OD
Phone: 570/476-1114
E-mail: eyedoc@ptd.net
Dr. Dieciedue has no relevant financial interest in the subject.
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Meeting Planner

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