How private equity affects optometry

History shows self-employed ODs have higher incomes

By Mitch Ibach, OD, FAAO

In the chronic treatment of intraocular pressure (IOP) lowering in glaucoma patients, eye care has experienced a renaissance in pharmacologic molecules as well as delivery modalities.

For topical glaucoma treatment, novel molecules, preservative-free drops, and compounded medications have increased patient options. Unfortunately, whether due to cost, side effects, or other causes, patient non-compliance is the OD’s biggest concern with glaucoma drops. According to a retrospective study, in more than 5,000 patients who were prescribed glaucoma drops, nearly 50 percent stopped taking their drops by six months, and just over one third of patients had a recent refill on file at three years after starting the medication.¹

Build your practice through social media

By Alex Delaney-Gesing, Associate Editor

The global population in 2018 was nearly 7.6 billion. Of that, 42 percent—3.2 billion people—were categorized as active social media users.¹

ODs need to learn the language of social media—how to brand themselves, says Bridgitte Shen Lee, OD, at SECO 2019 in New Orleans.

Dr. Shen Lee focused on three key areas she has found critical to her success on social media platforms with her professional profile and the profile for her practice, Vision Optique:

– Getting social and engaging

Travoprost eluting drug-delivery device shows promise

By Scott Moscow, OD

If ODs could go back in time to the day they graduated from optometry school (or the day they decided to join or open a practice), would they choose to be employed, own their own practice, or a combination of the two throughout their careers?

Priorities change with time. For those who own practices, many likely wish they could work 9-5 and forget about the headaches of practice ownership. From insurance audits to human resources, that’s not why they went to optometry school.

Past practice sales

Historically, if an OD wanted a sell a practice he owned, he would need to keep in mind that new graduates would be unlikely to afford to buy a large practice.

See Private equity on page 27

See Social media on page 5

See Drug-delivery device on page 18

Example: MY EYE DR. / CAPITAL VISION SERVICES

$490 MILLION

372% INCREASE IN FOUR YEARS

$104 MILLION

2013

2017

Example #1
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A Clear Choice for Patients and Practices is CLEAR CARE PLUS


I introduce myself to patients as Ben

By Benjamin P. Casella, OD, FAAO
Chief Optometric Editor
Practices in Augusta, GA, with his father in his grandfather’s practice
bcasella@gmail.com
706-267-2972

I’ve been called many things in my life, some worse than others. In my office, I’m colloquially known as Dr. Ben (Dr. Casella being my father). Patients know me by numerous names: Dr. Ben, Dr. Benjamin, or my favorite, “Mr. Benjy,” as one patient prefers. I usually introduce myself as Ben. Simple. Blunt. To the point.

When people ask me what I do, I usually tell them that I am an optometrist. In print, I prefer the term “doctor of optometry” because I think it is more descriptive of what it is I actually do. The term “doctor” is designated to persons who have earned a higher education degree deemed fit by the governing bodies responsible for designating said term.

“When a professional—especially in a field such as optometry—can’t educate the public in a state which was unkind and negative, then they haven’t fulfilled their professional responsibility,” I thought. So, I went to a local newspaper and wrote an op-ed piece. I pretty much wrote a propaganda piece put into a local newspaper and simply ignored because correcting someone who repeatedly uses a moniker like “Ms.” and not “Dr.” There was no oversight. It was just a cheap shot and an attempt to garner negative sentiment on the part of the public in a state which was unkind.

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“Doctor of optometry” seems to hold clout and merit in society, and it should. We work hard to earn these degrees, right? We don’t earn them for the pieces of paper hanging on our walls explaining to people what we are. We earn them so that we can care for the eyes and vision of the public.

Ms., not Dr.

I began thinking about this topic because I stumbled across a newspaper article some time back that was written by someone who doesn’t care much for optometry. I won’t tell you where or when because, frankly, I don’t think it’s worth the read.

However, I will tell you that it was a propaganda piece put into a local newspaper and written by an educated individual who repeatedly referred to a doctor of optometry as “Ms.” and not “Dr.” There was no typographical error. There was no oversight. It was just a cheap shot and an attempt to garner negative sentiment on the part of the public in a state which was undergoing a scope expansion battle at the time.

Still needed in 2019

So, what can I do about such tactics? The lazy answer is nothing.

The correct answer is that I can educate the public about what I do and how I was taught (and continue to be taught). To think that this is still necessary in 2019 is nuts to many, but it’s a simple truth.

In the meantime, I’ll probably still introduce myself to my patients as Ben, however incorrect that may seem. Whenever people attempt to explain to me what I do—but really have no idea—I’ll ask them if they’ve ever visited a school of optometry or even taken the time to skim through a school of optometry’s curriculum. After a long second of silence, I usually say, “I’ll wait for you to do so if you’d like.”

How do you refer to yourself? Do you have patients who address you with monikers like “Mr. Benjy” who you simply ignore because correcting them would do more harm than good?

I want to know! So, reach out to us on Twitter at @OptometryTimes and share your nomenclature.

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Editorial Advisory Board members are optometric thought leaders. They contribute ideas, offer suggestions, advise the editorial staff, and act as industry ambassadors for the journal.

Learn how one OD improved patient handoff. See page 23.
New blogs written by and for eyecare professionals are featured each week on Optometry Times. Check out some of the latest content below and head over to OptometryTimes.com/topic/blog for more articles.

**10 EYECARE APPS FOR MORE EFFICIENT PATIENT CARE**

**Margie Recalde, OD,** FAAO, shares her top 10 mobile app recommendations to help ODs manage and provide a faster, quality service for patients.

OptometryTimes.com/Blog/EyecareApps

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**A case of demodex infestation with eyelash extensions**

Jade Coats, OD, explains why correctly identifying the increased risk for demodex, as well as proper patient education on treatment and management, are keys to a successful outcome.

OptometryTimes.com/Blog/DemodexEyelashes

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**TOP HEADLINES**

Check out what your colleagues are reading.

1. **How to educate patients on risks of eyelash enhancements**
   - OptometryTimes.com/EyelashRisks

2. **Blue light: Why it matters**
   - OptometryTimes.com/BlueLight

3. **Macular degeneration A to Z**
   - OptometryTimes.com/ITechAMDAtoZ

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**TOP SOCIAL**

See what others are reading on Facebook, Twitter, and Instagram.

1. **4 steps to beating blepharitis**
   - OptometryTimes.com/BeatBlepharitis

2. **Targeting dry eye in glaucoma patients**
   - OptometryTimes.com/TargetDryEye

3. **Keep an eye on link between glaucoma and blood pressure**
   - OptometryTimes.com/GlaucomaBP
How to build your practice through social media

Continued from page 1

- Utilizing the power of hashtags
- Linking all online traffic to practice website

Before becoming active on social media, Dr. Shen Lee suggests ODs create content that will connect with their audience and benefit their brand and practice. ODs should learn where the audience is for those messages.

The top five U.S. social media platforms are:1

- Facebook
- Instagram
- Facebook Messenger
- Twitter
- Pinterest and Snapchat (tied)

For ODs with a practice website, Dr. Shen Lee recommends designating one staff member who is an active social media user to check platforms regularly—particularly Facebook and Instagram Messenger. Responding to messages in a timely manner can help boost ratings.

Dr. Shen Lee operates three social media accounts—an individual profile (@DrBridgitte) and two optometry businesses (@VisionOptique and @ITravel1CE). By maintaining consistent postings, offering quality content, and using the right hashtags, she has grown her following to over 100,000.

“It’s not that you need to create an account, it is absolutely essential to study and engage in social media for any business,” she says.

Power of hashtags

When posting on social media, Dr. Shen Lee recommends using specific hashtags to reach the desired audience and to support optometry on the global healthcare platform.

Insert hashtags such as #optometry, #SoMe (social media), and other specific terms relevant to healthcare topics. For anyone searching those hashtags, it will bring the individual back to eyecare and healthcare professionals.

Hashtags should be used when creating and growing a brand. Using the name of a brand or specialty area in each post will make it easier for patients and a targeted audience to follow.

Specific healthcare hashtags have been tracked by Symplur. They are able to see insights on what people are searching for you to understand who you are and your specialties,” Dr. Shen Lee says. “The goal is to make it easy for people who are searching for who you are and your specialties.”

She uses her professional Twitter profile (@DrBridgitte) to promote global understanding of optometry and eyecare conferences.

LinkedIn

Think of LinkedIn as your resume, Dr. Shen Lee says. The platform allows for users to share published articles, interviews, and blogs.

“The goal is to make it easy for people who are searching for you to understand who you are and your specialties,” Dr. Shen Lee says. “Get your name out there in the industry.”

Google My Business

ODs can sign up for an account on this platform to verify and manage their online business profiles. They are able to see insights on what people are searching for in their area—including local eye doctors and see which search terms are used to find their practice—allowing them to manage their online presence across Google (Search, Map).

“”Hashtag is applicable not just on one platform but on multiple,” she says, “and with all traffic—Google controls all online traffic.”

Online reviews

ODs want five-star reviews on Google, Dr. Shen Lee says. Always reply back to reviews, positive or negative.

Dr. Shen Lee recommends assigning one team member at a practice to reply. For positive reviews, a generic reply is typically given. For negative reviews, she reviews and all responses prior to posting. For negative reviews, contact the patient to resolve it offline.

If offline discussion is not possible, be courteous and factual. Ask patients who had a great experience to post five-star reviews to bury the bad ones.

REFERENCES


List of healthcare hashtags tracked by Symplur

- #Dryeye
- #MeibomianGlandDysfunction
- #Demodex
- #Blepharitis
- #DigitalEyeStrain
- #EyeStrain
- #Myopia
- #MyopiaControl
- #Presbyopia
- #Astigmatism
- #Hyperopia
- #PreventableBlindness
- #Diabetes
- #Glaucoma
- #MacularDegeneration
- #Glaucoma
- #Presbyopia
- #Cataract
- #Keratoconus
- #CrossLinking
- #SpecialtyContactLens
- #ScleralLens
- #ContactLns

Facebook

For all accounts, consistent upkeep is necessary. The designated social media staffer should be in charge of creating “albums” to make it easier for patients to search for a specific topic a practice specializes in.

The “Event Page” tool on Facebook can promote new products or upcoming events.

Instagram

Make post images fun and attractive, she says. Instagram allows 30 hashtags per post. Don’t include all 30 hashtags in the body of the post. Place a few key terms in the body of the message and place the rest in the comments below.

“If the message is too busy, people just scroll past it,” Dr. Shen Lee says. “Keep it clean.”

Using Hootsuite, she and her staff pre-schedule their posts.

Twitter

“Twitter won’t bring you much business in terms of patients in your chair,” Dr. Shen Lee says. “It’s good for professional development or branding.”

Appealing to audiences

Drawing in a targeted following should be only part of an OD’s social media goal. Keeping and growing that base is key.

While each site has its own specific language, content needs to incorporate something visually appealing—image, logo, or information on specialized areas of focus (hashtags that will be used when posting on social media).

To build a practice’s brand, Dr. Shen Lee recommends using three main platforms:

- Facebook
- Instagram
- Google

For professionals looking to build personal brands, use LinkedIn, Instagram, and Twitter.

Include a link to the practice website on all platform pages, usually in the bio section, which will help to raise search engine optimization (SEO) on Google, Dr. Shen Lee says.

- #Optometry
- #Eyecare
- #ScleralLenses
- #Presbyopia
- #Myopia
- #DigitalEyeStrain
- #Blindness
- #Glaucoma
- #Presbyopia

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How to control myopia progression in your practice

Recognize risk factors associated with this targeted patient population

By Alex Delaney-Gesing
Associate Editor

Myopia is expected to become a leading cause of permanent blindness around the world.1

Myopia is a disease—not a refractive error anymore, says Pamela Lowe, OD, FAAO, at Vision Expo East in New York City.

“We need to talk about the science behind starting myopia management protocols,” she says.

In today’s age of practice, all healthcare practitioners should be on the same primary-care model—including ODs.

“Dry eye, age-related macular degeneration (AMD), and myopia is where ODs need to take the lead,” Dr. Lowe says.

While ODs know a patient is important, Dr. Lowe says that over the years she has begun giving her patients the “why” behind what she does to treat them.

“It’s critical,” she says. “Anything I’m doing for patients—they need to know the ‘why.’”

As a refractive code, myopia is any refractive error ≥-0.50 D. High myopia is classified as a refractive error with a spherical ≥-5.00 D.

By 2050 there will be an estimated 5 billion myopes in the world—with high myopes expected to account for 1 billion of that amount.1

Patients who are high myopes typically also have the following ocular conditions:

- Glaucoma
- Cataract (early onset)
- Retinal detachment
- Myopic macular degeneration

Knowing the higher risk these patients have for such conditions enables ODs to slow myopia progression, Dr. Lowe says.

“We need to be talking to our patients more comprehensively about this,” she says.

Risk factors

Some of the major risk factors associated with myopia progression may include:

- Family history
- Ethnicity
- Age of onset
- Activities
- Visual efficiency
- Gender

Dr. Lowe is a member of the newly established myopia control task force formed by Essilor. The 14-OD member group is seeking to establish a new protocol for treating and managing myopia.

Family history. When looking at family history, Dr. Lowe categorizes patients into three areas: low risk, medium risk, and high risk. A pediatric patient’s chances of becoming myopic increases when one or both parents are myopes.

Ethnicity. Epidemic proportions in Asia—China, Japan, South Korea, Singapore—all face high risks of developing myopia due to genetics.

Age of onset. “The younger you become myopic, the greater the chance you will become more myopic during formative years,” Dr. Lowe says.

Children with age of onset age 7 or younger face the highest risk of high myopia progression, while 8- to 15-year-olds pose a more moderate risk. Once a child is in high school and older, the risk of myopia progression is induced more by the environment rather than his age.2

Activities. The amount of time spent outdoors is more beneficial the younger the child’s age.3

More outdoor time can delay the onset of myopia, Dr. Lowe says.

- 0 to 2 hours per day → low myopia risk
- 1.5 to 2.5 hours per day → medium myopia risk
- 2 to 3 hours per day → high myopia risk

Conversely, more time spent indoors conducting close-vision tasks has been closely tied to a higher risk for myopia development.4

Visual efficiency. Watch those kids who don’t have as much hyperopia as they should, Dr. Lowe advises. If the children are esophoric or experience a high lag of accommodation, ODs are finding that those binocular vision disorders are putting them at a greater risk for becoming progressively myopic.

“So look at your binocular vision exam—it’s important,” she says.

Gender. Does gender matter? The jury is still out on that, Dr. Lowe says.

Some studies have shown females to appear to have a greater myopic progression. However, these results could have been skewed by the study population.1

Be mindful of transgender pediatric patients, Dr. Lowe warns. Most members of this population are traditionally adults by the time they determine their preferred gender. Because the attempted suicide rate is so high in transgenders—nearly 40 percent5—pediatric specialists are now available for younger patients who identify early on to help stop puberty. When the transgender patient’s body matches their identity, they are happier and avoid many social stigmas. This can greatly reduce the challenges of abuse and discrimination that lead to depression and suicide attempts.

Ineffective treatments

Methods previously thought to help in preventing myopia progress include:

- Single-vision (SV) spectacles
- SV alignment gas permeable (GP) contact lenses
- Multifocal spectacles
- SV alignment GP lenses were once prescribed so patients’ glasses thickness wouldn’t change as quickly over time. While this may help a patient for the moment, her vision will revert back when the lenses are removed.

“It does nothing to help the axial length of the eye to stimulate it not to grow,” Dr. Lowe says.

Effective treatments

Dr. Lowe singled out three treatment options effective in reducing the risk for myopia:

- Low-dose atropine
- Distance center, multifocal soft lenses
- Orthokeratology

Low-dose atropine

The mechanism of action of atropine below 0.1% is not yet fully understood but has had effective results, Dr. Lowe says. Refractive error is reduced, particularly versus axial length. Compounded low doses of atropine have been found to have minimal effects and maxi-
I didn’t realize
STARS
were little dots that twinkled
—Misty L, RPE65 gene therapy recipient

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FightBlindness.org
mize the safety of a pediatric patient.

“It will help with lack of near-blur and intolerance for bright lights,” Dr. Lowe says.”

Ideal candidates for this treatment include pediatric patients with a level of immaturity, pediatric patients with parents unmotivated to enforce application, and patients with an intolerance to contact lens wear.

The higher the concentrated dose of atropine, the larger the effect on axial elongation, Dr. Lowe says.

Distance center, multifocal soft lenses These lenses may take strain off patients with a lack of accommodation or vergence problem but mainly treat myopia progression by creating a peripheral retinal defocus which signals the brain to tell the eye not to grow.

Ideal patients for this treatment include motivated patients or motivated parents of pediatric patients and patients with no to low levels of cylinder.

The benefits of a soft or hybrid lens includes a comfortable fitting and some availability as a single-use lens. However, risks associated with these lenses involve the potential for aberrations from the multifocal design, according to Dr. Lowe.

“We’re putting a multifocal lens on a non-presbyopic eye, so some can be sensitive to aberrations,” she says.

Dr. Lowe says that 98 percent of patients do not clean their contact lenses appropriately.6 Improper care of reusable lenses puts patients at risk. Switching to daily disposable contact lenses can help avoid such complications.

She recommends fitting tips for these lenses:
- Spherical equivalent (SE) distance
- Start with highest add

Keep in mind pediatric patients wearing distance-center soft lenses are those with lower cylinder, Dr. Lowe says.

“You want to create that peripheral defocus as much as you can—so you start with the +2.050 D add.”

Based on how a patient is seeing, an OD might want to go up a click or two in distance correction, Dr. Lowe says.

“Do not change the add,” she warns. “Keep that the same because it is helping with maximum peripheral defocus. Wait to see how the patient responds.”

Whether patients are wearing a daily or reusable contact lens, ODs will want to see them back in the office within a week.

“I assess the comfort and fit, just as with any other lens,” she says. “Address any distance blurs—especially the older a child is.”

If a patient is still not seeing clearer when the prescription is more minused by a click or two, Dr. Lowe says it’s an indicator of too many aberrations for that patient’s visual system. In this case, she would go back to the patient’s original SE, refrain from putting more minus in, then take the add down from + 2.50 D to + 2.00 D.

Orthokeratology Similar to a distance-center soft contact lens, orthokeratology (ortho-k) uses a rigid lens with reverse geometry to flatten and redistribute the corneal epithelium, changing the optics and creating optics that puts a peripheral myopic defocus on the retina to help the eye. While the treatment reduces axial length most effectively, refractive error cannot be measured unless the patient stops lens wear and “washes out,” Dr. Lowe says.

“It’s hard to track a patient’s refractive status; with ortho-k it’s all about axial length not progressing and good daytime vision,” Dr. Lowe says. “But with distance-center soft multifocal lenses—when they come in every year—you can see that they’re not getting more myopic.”

The best candidates are motivated patients (or motivated parents of pediatric patients) with mid-cylinder astigmatism.

Ortho-k benefits allow patients to be spectacle-free and contact lens-free throughout the day. This type of lens is excellent for athletes, especially swimmers, Dr. Lowe says.

Risks are the potential for general improper lens care and overnight complications. However, the dangers are no more serious than those associated with sleeping in any other contact lenses; they have a good safety profile, Dr. Lowe says.

How it works. With ortho-k, reverse geometry uses the rigid contact lens to flatten the center of the cornea. But instead of a multifocal, the ortho-k design creates that same peripheral defocus, according to Dr. Lowe.

“Ortho-k and distance-center multifocal lenses are about equal in success for long-term myopia progression, according to Dr. Lowe.

“Ortho-k and distance-center multifocal lenses are about equal in success for long-term myopia progression, Dr. Lowe says, “but ortho-k can be a more effective and efficient way for the patient to be contact lens- and spectacle-free most of the day.”

Because advanced technology is necessary for ortho-k, Dr. Lowe says investing in a topographer is a must.

“You need to track the epithelium being moved and the flattening of that central fitting zone,” she says. “It has to be tracked at a higher level.”

More patient visits are essential with ortho-k fittings.

“When patients sleep in those lenses, you have to see them the next morning, then at one week, one month, three months, and six months,” Dr. Lowe says. “So if the patient is having challenges, it’s easier to track and correct.”

Treating based on age

No patient’s myopia diagnosis is the same. With this in mind, Dr. Lowe works on a case-by-case basis.

“The younger the child, the more impact I know I can be. Just like with any disease, if you catch it ahead of time—the better,” she says.

Three forms of treatments leave room to provide patients with options, according to Dr. Lowe.

“If a patient is against contact lenses, at least I have the low-dose atropine in my toolbox. Then there are the two contact lens options in soft and rigid,” she says. Current studies are looking into the additive effect atropine may play with soft multifocal use.

Before a child becomes myopic, it is essential to discuss lifestyle adjustments that can delay onset. When myopia does start, consider the child’s age and the amount of myopia, and then talk about the three options and what will fit best for that patient’s lifestyle needs, Dr. Lowe recommends.

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Consider the whole patient when treating glaucoma

Look beyond ophthalmic indicators to consider the impact of biomarkers.

Yet, it may be shocking to hear that a seasoned ophthalmologist recently told an audience that “based on multiple clinical studies, 20 to 59 percent of treated glaucoma patients lose visual field abiding by the standard of care.”

With an increasing emphasis on technology over observation—and paraphrasing Mark Twain—are we looking under a light post for support rather than illumination?

**Pulse pressure, biomarkers**

The difference between systolic and diastolic blood pressure is “pulse pressure,” it is associated with degree of atherosclerosis.

While pulse pressure typically widens with age, Westernized diets, and environmental stressors, readings wider than 40 mm Hg are an indication of compromised blood flow to end organ tissues such as the eye, particularly if endothelial function and autoregulation of blood flow is compromised. This involves preventative and environmental medicine.

The Health Studies Collegium lists eight predictive biomarkers predicting 92 percent of the epigenetic risk of all diseases:

- Hemoglobin (Hb)A1c (dysglycemia)
- High-sensitivity C-reactive protein (hsCRP) (inflammation/repair deficit)
- Homocysteine (oxidant status, undermethylation)
- RBC omega-3 fatty acid index (chronic vascular disease and inflammation)
- Vitamin D liver reserve status (inflammation, atherosclerosis, survival)
- Early morning urine pH (acidity/alkalinity balance, magnesium/potassium mineral electrolyte)
- Lymphocyte response antigens (immune tolerance)
- Antioxidant status

**Magnesium status**

Magnesium (Mg) is the body’s fourth most abundant mineral. Based on Mg’s 300 enzymatic functions, it is crucial in preventing and treating diseases.

It is critical for regulating muscular contraction, blood pressure, insulin metabolism, cardiac excitability, vasomotor tone, nerve transmission, and neuromuscular conduction.

Low levels of serum magnesium, manifested by overly acidic early morning urine pH, have been linked with chronic diseases such as Alzheimer’s disease, insulin resistance/type 2 diabetes mellitus, and cardiovascular disease.

Mg has been shown to improve blood flow by modifying endothelial function and endothelial nitric oxide pathways. Mg also blocks N-methyl-D-aspartate receptor-related calcium influx and inhibiting the release of glutamate, protecting cells against oxidative stress and apoptosis.

**Compromised sleep quality**

In the Maracaibo Aging Study, extreme decreases in participants’ night-time systolic and diastolic blood pressure (>20 percent compared with daytime blood pressure) were significant risk factors for glaucomatous damage with ratios of 19.78 and 5.55, respectively.

Another study suggests sleep itself is important with a difference in melatonin production between high intraocular pressure (IOP) glaucoma (low melatonin) and low-tension glaucoma (lower than normal, higher melatonin).

**Wrong lamp post**

Visual fields often worsen despite efforts to lower IOP using drugs while repeating visual fields ad nauseum and monitoring the optic nerve head (and retinal ganglion cell layer) with imaging technologies. Perhaps the real war should be against aging and multisensory impairment.

If true, our armamentarium should include more attention to blood pressure measurements, proper sleep, exercise, stress reduction, and meeting universal predictive epigenetic health biomarkers.

If healthcare professionals fail to consider the whole patient, we will continue to meet clinical endpoints like IOP while still losing the war against glaucoma.

**REFERENCES**


How to determine an ideal LASIK candidate

Consider these guidelines for the best outcomes when selecting patients

I have enjoyed working in a laser referral center for the better part of my career. I have seen procedure volume grow, plummet, then grow and decline again, and now back to growing. The procedure currently uses a femtosecond laser for the cornea flap and an excimer laser guided by topography or wavefront aberrometry.

What has not changed is the fact that the first patient a new OD sends to our clinic is likely a non-candidate for refractive surgery. I know ODs want to find a solution to help patients, and we all have that patient who has struggled with glasses and contact lenses. So laser eye surgery (LASIK) must be the solution.

In 2019, laser vision correction patients come in all ages, sizes, and prescriptions. Based on years of experience and learning from earlier errors, an OD today can determine if a LASIK patient is clinically a good candidate before he walks into the exam room. That leaves fear and expectations to talk about.

Let’s discuss high-level guidelines to help determine which patients may have the best outcomes from LASIK.

Patient profile

I first evaluate a patient’s age. The Food and Drug Administration (FDA)-approved age for LASIK is 18 years old. Linked to age is refractive stability.

While some 18-year-old myopes are refractively stable, many are not. Waiting until a patient has refractions within 0.50 D spherical equivalent a year apart is necessary to determine stability.

I have found that most patients are stable by age 25. If LASIK were a new ophthalmic device, there would be a red mark next to those patients under 18, a yellow mark for those ages 18 to 25, and a green mark for those above 25.

Consider two other ages: presbyopia and cataracts. While presbyopia does not eliminate LASIK, it certainly changes the discussion. Treating both eyes for distance correction and needing glasses for closer vision is the most predictable result.

Monovision

Monovision refractive surgery is successful in patients who have been successful with contact lens monovision prior to surgery. This is even more so if they are age 55 as opposed to age 45. The least successful are those patients who are successful with multifocal contact lenses. That visual world cannot be “recreated” with LASIK. The discussion with a -1.25 D 50-year-old patient can be difficult.

When these patients understand what they are gaining and what they are losing, they can be the happiest patients.

A visually significant cataract patient requires a lens-based surgery and can achieve the desired refractive outcome. Lens changes that are not yet affecting daily activities but are reducing vision fall into the most challenging situation. Medical insurance will likely not pay for cataract surgery. But I am not eager to perform LASIK. This patient may need cataract surgery in the next year or two.

My rubric is to have the cataract discussion with every patient over 60 years old and use my slit-lamp findings and best-corrected visual acuity to guide me to the appropriate procedure.

Patient history

A few absolute contraindications should be gathered on a patient’s history. They can be medical, ocular, or related to the medicine a patient is taking.

The absolute contraindications are part of the FDA label for lasers approved in the U.S. and include pregnancy or nursing and presence of a collagen vascular, autoimmune, or immune-deficient disease.

Pregnancy may be an all-or-nothing condition, but collagen vascular disease and autoimmune diseases present in a broad continuum of severity. Some surgeons will not treat anyone with these conditions, while others will treat based on severity.

A 2016 retrospective study analyzed 1,224 eyes of patients with a diagnosis of collagen vascular and other immune-mediated inflammatory diseases and who had excimer laser surgery between 2008 and 2015.1

The disease was well controlled in all cases with no flare or symptoms for a minimum of six months preoperatively. Researchers concluded these patients could be safely treated.

Ocular surface disease

Ocular conditions affecting candidacy for LASIK patients include cataracts, keratoconus, glaucoma, macular degeneration, and amblyopia. It would be an interesting clinical discussion to delve into the subtleties of each of these conditions to find a patient for whom LASIK could be considered.

Prior to refractive surgery, LASIK patients should be symptom free, have a normal tear break-up time, no conical staining, and non-fluctuating vision.

FDA medications

Three medicines appear on most FDA labels for excimer lasers: sumatriptan (Imitrex, GlaxoSmithKline), isotretinoin (Accutane, Roche; Claravis, Teva Pharmaceuticals), and amiodarone (Cordaron, Pfizer). Sumatriptan is the medicine encountered most often of the three. Most surgeons are not concerned about its usage with LASIK patients.

A study published in the Journal of Refractive Surgery tracked 54 eyes of 28 patients taking sumatriptan after having LASIK. This cohort of patients did not experience any increase in epithelial defects.2

Because isotretinoin is known to have ocular side effects, any history of use should prompt a thorough ocular surface work-up.

A 2018 American Journal of Ophthalm-
ology paper compared patients currently taking isotretinoin versus those who had taken it more than six months previously. No significant difference in outcomes between the two groups was found. Amiodarone is an anti-arrhythmic drug used to advance cardiovascular patients. It is rarely used by patients considering LASIK, and should be considered an absolute contraindication.

**Ideal candidates**

In my experience, myopes are the best patients for LASIK. The outcomes from two recent FDA approvals (Alcon Contoura and Johnson & Johnson Vision iDesign Refractive Studio) reveal more than 50 percent of patients see 20/16 for better. This compares to several studies that find approximately 70 percent of patients see 20/20 after hyperopic LASIK.

It appears the outcomes begin to decline above -8.00 D SE. A study of high myopes found that 79 percent of patients achieved 20/20 when the range was -6.00 D to -12.00 D (with a mean of -8.65 D ± 1.51 D). While a -4.00 D myope might think of his vision as “blind,” he is considered an average LASIK patient achieving outstanding results.

**Predictors of success**

The goal of LASIK should be to reduce a patient’s dependency on glasses or contact lenses.

Therefore, a patient who is not dependent is not an ideal candidate. This could be the low myope who rarely wears his glasses or the younger hyperope who can accommodate and see 20/20 without correction.

Asking patients “why” and “how often” they wear their optical correction gives insight into how happy patients will be after surgery. In general, the patient who has uncorrected visual acuity better than 20/40 has less to gain.

If a patient does not have refractive error after surgery but still needs prism in his glasses to fuse, the goal has not been achieved.

A stable binocular vision system is necessary for successful LASIK. The exception is alternating exotropes who perfectly suppress. Success in wearing contact lenses is another good predictor of binocular success.

LASIK removes corneal tissue, so therefore a patient needs to start with enough tissue to remain stable after surgery. This is more of a concern with myopes than hyperopes because myopic treatments remove tissue in the center of the cornea where the pachymetry is the thinnest.

The FDA requires leaving 250 μm in the residual stromal bed. However, surgeons may have thresholds above 250 μm. The “napkin” arithmetic I calculate before I go in with a patient is 15 μm per diopter.

For example, a -4.00 D myope with a 540 μm cornea will end up with a residual stromal bed of 360 μm if the surgeon makes a 120 μm flap (540-120=420 μm). When a patient is near the surgeon’s threshold, I tell the patient the laser center will determine precise numbers of the residual stromal bed because the center’s diagnostic equipment will provide more details.

**Cornea**

An average cornea is approximately 550 μm with a standard deviation of approximately 40 μm. Therefore, a cornea that is less than 470 μm is unusually thin. Similarly, a cornea thicker than 630 μm is considered an outlier. Very thin corneas often do not have enough tissue for LASIK, making these patients non-candidates.

However, corneas that are too thick should also be closely evaluated. Often the unusually thick cornea is a result of endothelial changes, which makes these patients poor candidates for LASIK.

LASIK alters a patient’s prescription by changing the curvature of the cornea. Myopes’ corneas are flattened, whereas hyperopes’ corneas become relatively steeper. Corneas become about 1.00 D steeper for every diopter of hyperopic treatment.

In fact, studies have found that hyperopic treatment tends to regress over time due to a flattening of the cornea. Additionally, the steepest corneas regress the most. Surgeons are therefore less likely to treat patients where the resultant cornea is greater than 49.00 diopters.

**Referring parameters**

There are a few parameters referring ODs should know about the surgeon to whom they refer a patient for LASIK.

These include:
- Height of correction of myope and hyperope at which a surgeon will treat
- Amount of cornea a surgeon prefers in the residual stromal bed
- Pachymetry at which the surgeon switches to photorefractive keratectomy (PRK) over LASIK

- Steepness the surgeon is comfortable in making the cornea

Professional baseball players almost always bunt the first few pitches. When referring LASIK, it is never a bad idea to bunt the first few. The 32-year-old -3.50 D myope who is “fed up” with her contact lenses will be thrilled by this procedure.

**REFERENCES**


Dr. Owen has served as the president of the Optometric Cornea, Cataract and Refractive Society (ODCRS) and sits on its board of directors. He participates in clinical research and lectures on laser vision correction, cataract surgery, dry eye, and contact lenses.
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- Correlated Color Temperature, the temperature of a black body light source that would produce similar shade of white to the measurement - how blue or red and white light appears.
- Color Rendering, how truthfully a color is shown by the light measured compared to if the color was lit by bright sunlight.
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Donna Williams, author of “Autism: an inside out approach”, has observed that some tinted lenses have helped her and others afflicted with autism. Among those tints that she mentions are BPI® Sahara™ (brownish tan), BPI® IR Blue™ (blue/black), BPI® Signal Green™ (a pure green) and BPI® Signal Blue™ (a pure blue).

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**Autism**

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Role of insulin therapy in diabetes, diabetic retinopathy

An increasing number of patients diagnosed with diabetes are being prescribed insulin therapy. In fact, the fastest growth of insulin prescriptions has occurred in those with type 2 diabetes, a disease characterized by insulin resistance overlaid on top of progressive beta cell failure and insulin deficiency over time.

All patients with type 1 diabetes require insulin, and many patients with type 2 diabetes also ultimately end up receiving insulin therapy. However, this does not mean that these patients have developed type 1 diabetes (caused by autoimmune destruction of beta cells).

It means, rather, that their pancreatic beta cell mass has declined as a function of increasing stress caused by compensatory over-production of insulin to accommodate worsening insulin sensitivity, lipotoxicity—due to the inflammatory dyslipidemia typical of type 2 diabetes—and direct glucotoxicity to beta cells resulting from hyperglycemia.

Interestingly, studies indicate that patients newly diagnosed with type 2 diabetes have already lost between 40 to 60 percent of their beta cell mass.

**Classifications**

Insulins are classified by the onset and duration of action. A significantly insulin deficient patient (type 1 diabetes or long-term type 2 diabetes) will be placed on basal-bolus therapy, which includes a short-acting insulin in combination with a longer-acting insulin.

Rapid-acting insulins like aspart (Novolog, Novo Nordisk) and lispro (Humalog, Lilly) are administered prior to meals to counter post-prandial blood sugar elevation, whereas longer duration insulins like detemir (Levemir, Novo Nordisk) and glargine (Lantus, Sanofi) are prescribed to cover glucose released by the liver even in the absence of caloric intake.

In addition, some patients are prescribed fixed-combination insulins that contain both long- and short-acting insulin in various ratios (such as 70:30 and 75:25).

Patients with type 2 diabetes that is not well-controlled with oral therapies are frequently started on longer-acting insulins like detemir and glargine. Mealtime or fixed-combination insulin are added on as beta cell mass declines.

More recently, an ultra-long acting insulin called degludec (Tresiba, Novo Nordisk) became available with an action duration of up to 42 hours that provides more stable glucose control in some patients.

All the above insulin types are synthetic analogs of naturally occurring insulin and produced by bacteria using recombinant DNA technology.

Major drawbacks of these include an increased cost compared to older insulins derived from pork and beef sources, and in the last two years, patient price tags have risen by as much as 50 percent.

**Insulin pumps**

Insulin pumps deliver a continuous infusion of short-acting insulin, which mimics normal pancreatic production and replaces the need for long-acting insulin. Pumps also allow mealtime insulin bolusing analogous to rapid-acting insulin.

Additionally, newer insulin pumps interface with blood sugar data generated by continuous glucose monitoring (CGM) systems that use subcutaneous insertion of a sensor to measure interstitial glucose.

Although considerable progress has been made toward closed-loop insulin pump and CGM systems that normalize blood glucose without patient interaction, all current systems require at least some user input, especially for determining the dose of mealtime insulin (bolus) required to “cover” food intake.

Blood glucose

Insulin can lower blood glucose indefinitely, unlike other diabetes therapies. It has several downsides, including acute hypoglycemia—which can impair patient function, cause weight gain, result in an increased propensity for cancer, and even result in death.

All patients with type 1 diabetes require insulin, and many patients with type 2 diabetes ultimately end up receiving insulin therapy.

For these reasons, it is wise to use the lowest necessary dose to achieve and maintain individualized blood glucose targets.

ODs should be prepared to combat in-office hypoglycemia in their patients diagnosed with diabetes using insulin therapy or insulin secretagogues like glyburide (Glynase, Pfizer), glipizide (Glucoctol, Pfizer), and glimepiride (Amaryl, Sanofi-Aventis). Having a rapid-acting carbohydrate (fruit juice, sugar-sweetened beverage, or glucose gel) close at hand is the best strategy.

**Diabetic retinopathy**

The role of insulin therapy in the pathogenesis of diabetic retinopathy has been a topic of controversy. Observational data suggests that patients with type 2 diabetes who are placed on insulin therapy are more likely to develop proliferative diabetic retinopathy independent of glycosylated hemoglobin (HbA1c) levels.
However, use of long-acting insulin analogs (detemir, glargine and neutral protamine Hagedorn [Humulin, Eli Lilly and Company]) was not associated with an increased risk of sight-threatening retinopathy over two years.9

In an animal model of retinopathy, intensive insulin therapy designed to normalize blood glucose was shown to increase retinal vascular permeability (breakdown of the blood-retinal barrier) by up-regulating hypoxia-inducible factor 1a (HIF-1a) which, in turn, up-regulates vascular endothelial growth factor—even in the absence of hyperglycemia.10

These findings suggest that exogenous insulin may, in fact, play some role in the development and/or worsening of diabetic retinopathy, especially when intensive glucose control with both rapid and long-acting insulin therapy is initiated.

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Although considerable progress has been made toward closed-loop insulin pump and CGM systems that normalize blood glucose without patient interaction, all current systems require at least some user input.


IN BRIEF
FDA warns about concussion diagnostic devices

SILVER SPRING, MD—The U.S. Food and Drug Administration (FDA) warns the public not to use medical devices marketed to consumers that claim to help assess, diagnose or manage head injury, including concussion, traumatic brain injury (TBI) or mild TBI.

In a new safety communication, the FDA warns that such tools—such as apps on a smartphone marketed to coaches or parents for use during sporting events—have not been reviewed by the FDA for safety and efficacy and could result in an incorrect diagnosis, potentially leading to a person with a serious head injury returning to their normal activities instead of getting medical care.

To date, there are a limited number of medical devices that have been cleared or approved by the FDA to aid in the diagnosis, treatment, or management of concussion, and all of them require an evaluation by a healthcare professional.

“Products being marketed for the assessment, diagnosis, or management of a head injury, including concussion, that have not been approved or cleared by the FDA are in violation of the law,” says Jeffrey Shuren, MD, JD, director of the FDA’s Center for Devices and Radiological Health.

“The FDA routinely monitors the medical device market and became aware of violative products being marketed to consumers,” he says. “The FDA has alerted companies to our concerns and asked them to remove such claims. We will continue to monitor the marketplace for devices making these unsubstantiated claims and are prepared to take further action if necessary.”

According to the FDA safety communication, the products of concern include those that claim to assess and diagnose any changes in brain function by having an injured person perform tests on a smartphone or tablet-based app to determine a change in physical or mental (cognitive) status including vision, concentration, memory, balance, and speech.

The FDA’s recommendations for consumers, parents, caregivers, and athletic coaches note that individuals should seek treatment right away from a healthcare professional if any head injury, including concussion, is suspected.

The FDA will continue to monitor promotional materials and claims about uses of these and similar products and contact companies when we see violative practices. If the agency’s concerns are not addressed, the FDA will consider what additional actions, including potential enforcement actions, are appropriate.

The FDA will continue to monitor complaints and adverse event reports from patients, caregivers, healthcare providers and industry.
Assessing visual crowding and its impact on glaucoma patients

Trial analyzes effect and implications of phenomenon in daily life functionality

I was never any good at those search-and-find books as a kid. Where’s Waldo eluded me for years. As an adult, my own children have much more of a knack for it than I ever did (or do to this day). Should I be worried about my relatively poor performance at such games, or is this just me being me?

A 2019 study published in Investigative Ophthalmology and Visual Science examines a functional aspect of glaucomatous damage that deserves more attention than it currently receives.1 ODs learn of the crowding phenomenon when studying amblyopia in school (see Figure 1). Testing visual acuity on amblyopic patients using crowded optotypes has been studied for years.2

**Trial subjects**

However, visual crowding may also have implications for the functional assessment of glaucoma patients. The authors of this study tested 13 subjects with “mild glaucomatous visual field loss” and 13 controls.

**Visual crowding was determined by having each subject determine the orientation of the letter “T” presented 10 degrees away from a fixation target in each quadrant.**

The optotype was crowded, or “flanked,” by two letter “Hs,” and the subjects were asked to determine whether the T was upright or downright during 12 testing blocks consisting of 50 trials a piece for a total of 600 trials.

Prior to the crowding trials, the researchers tested to see if the subjects could initially see the letter T in each quadrant in order to determine if anyone would perform poorly simply because the optotype was in an area of glaucomatous visual field loss.

In addition to standard visual field testing, dilated eye examinations and baseline optical coherence tomography (OCT) studies were obtained on each study participant in order to quantify glaucomatous damage and isolate confounding diseases or conditions that could...
also cause visual impairment.

Only patients with open angles by gonioscopy were included, and ocular hypertensives without evidence of glaucoma (defined in this study as two or more consecutive abnormal visual field studies and glaucomatous-appearing optic discs) were excluded.

**Study results**
The results of this small-scale pilot study were intriguing and should be further investigated with more and larger studies. Not only did the subjects in the glaucoma wing of the study have more difficulty with visual crowding, but quantification of their test scores showed a significant correlation with their retinal nerve fiber layer (RNFL) thicknesses as measured by OCT studies.

Specifically, for every 10 μm decrease in RNFL thickness, there was a 6.6-degree increase in the minimum distance the crowding flankers had to be from the target in order to negatively affect test performance.

The subjects with glaucoma were significantly affected by visual crowding, and the effect of crowding correlated with the severity of glaucomatous damage.

**Solving everyday visual tasks can be difficult enough with a visual system that is completely intact**

The study authors also point out that the crowding phenomenon occurs in the cortex of the brain and not within the ocular component of the visual system.

This notion leads to the concept of glaucoma as a neurological disease instead of being purely isolated to one’s eyeballs.

**What this means**
Why are these findings of particular significance? The visual world is busy and filled with real-life manifestations of the crowding phenomenon (see Figure 2).

Solving everyday visual tasks can be difficult enough with a visual system that is completely intact. Functional damage from, say glaucoma, for example, is known to make matters worse.

But studies such as this help answer the “why” aspect of this notion. Additionally, as stated earlier, the glaucoma wing’s relative difficulty with respect to visual crowding as compared to the control wing had significant correlation with decreased RNFL thickness.

**Takeaways**
I am eager to read the results of future, larger studies—keeping in mind that the assessment of visual crowding may be another valuation of visual function for glaucoma patients (besides standard automated perimetry and the like).

Having a relatively easy test such as this in the OD armory provides more of a real-life assessment of patients with vision impairment from glaucoma—which important for ODs in understanding how patients perceive the world around them.

The pictures ODs show to patients about how different types of visual impairment look are useful for educational purposes. However, they are only oversimplified tips of the iceberg of what patients actually perceive.

Personally, reading studies such as this one makes me aware that my understanding of functional impairment in glaucoma—which I hope is currently comprehensive—leaves much to be desired.
Travoprost eluting drug-delivery device shows promise

Continued from page 1

In another study, in over 1000 patients newly prescribed glaucoma drops, only 20 percent had persistently good drop adherence at one year, and it dropped to 15 percent at four years.2

Glaucoma drug delivery
Drug delivery devices throughout eye care, but specifically for glaucoma, is an expanding arena showing real potential.

Glaucoma drug delivery is fast evolving; there are non-surgical external modalities, such as Allergan’s bimatoprost ring; an intracanalicular plug from Ocular Therapeutix; as well as surgically implanted devices such as Envisia Therapeutics’ ENV515, Allergan’s Bi-canular plug from Ocular Therapeutix; as such as Allergan’s bimatoprost ring; an intra-ocular implanta were randomized 1:1:1 into iDose fast, iDose slow, or placebo group of timolol twice per day.4

Note that both iDose groups instilled a “sham” drop of artificial tears twice a day to maintain study quality.4

The primary endpoint, which has been met in all patients, is IOP lowering at 12 weeks post-implantation. The secondary endpoint is IOP lowering at one-year post surgery.4

Inclusion criteria included patients who are ≥18 years old with phakic or pseudophakic lens status. Patients included had mild-moderate OAG or OHTN (including pigmentary dispersion and pseudo-exfoliative glaucoma) on 0 to 3 medications at baseline visit. Inclusion criteria required a washed-out IOP 21 to 36 mm Hg.4

Pertinent exclusion criteria were traumatic, uveitic, neovascular, or angle-closure glaucoma. Corneal, retinal, or systemic conditions that could confound results were excluded.4

Implant and surgery
iDose is an implantable sustained-release drug delivery device that releases a proprietary formulation of travoprost. It measures 1.8 mm by 0.5 mm and is implanted into the drain of the eye at the trabecular meshwork (TM) level.

The implant has three parts: the scleral anchor which anchors into the TM, the drug reservoir that serves at the body of the device, and the elution membrane which titrates the travoprost release. The travoprost therapeutic index is achieved with micro amounts of the drug because corneal permeability is bypassed.4

The surgical procedure was tightly controlled and monitored. iDose implantation is a stand-alone procedure performed in one eye. All patients were given anesthesia and brought into the operating room (OR). Randomization took place in the OR, and all patients were equally prepared for surgery. Using a gonio- prism with an ab-interno approach, the surgeon implanted the device with the scleral anchor fastening into the TM. Postoperative visits were conducted at postop one day, postop one week, postop one month, and postop three months in the primary subset and endpoint.3

Results
Demographics and preop characteristics. Across all three study groups, patient demographics were balanced. Averaging all groups, the mean age at the time of enrollment was 62.7 years. The most common patient race was Caucasian.

Disease type favored OAG over OHTN at a rate of over 3:1. In all groups, the most common number of glaucoma medications was one. In
was drawn to look for systemic serum levels of travoprost, and in both implant arms travoprost was not detected in patient blood serum.\(^1\)

Adverse events shown in Table 2.

**Discussion**

Medical treatment in glaucoma remains a mainstay for this chronic disease. Innovation in drug molecules is important because topical drops still have a high adoption rate by patients.

In a questionnaire of 126 patients, 55 percent of stable patients desired to continue topical drops over alternative therapies, including laser therapy, external or internal drug delivery, or intraocular surgery. Comparing topical drops vs. a drug-delivery device that provided therapy for three to six months, it was nearly an equal 50-50 split on treatment preference.\(^6\)

Drug-delivery devices used in glaucoma treatment remove the element of non-compliance as long as the devices are correctly inserted or implanted. For many practitioners, a utopic view of continuous medical treatment that may avoid IOP spikes due to missed or poorly timed drop administration is desirable.

Two differentiating factors of this specific travoprost-eluting implant are safety and duration of efficacy. Paramount in any glaucoma treatment but magnified in mild OAG and OHTN patients who have minimal to no glaucoma symptoms is providing a safe treatment with minimal adverse events.\(\)●

**REFERENCES**


4. Ibach M. Interim results of a prospective Phase II study of Travoprost Intraocular Implants. Paper presented at American Academy of Optometry annual meeting; Nov. 7-11, 2018; San Antonio, Texas.


\*Mitch.Ibach@vancothompsonvision.com

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**TABLE 1** Subject demographics and preop characteristics

<table>
<thead>
<tr>
<th></th>
<th>iDose-fast (N=51)</th>
<th>iDose-slow (N=54)</th>
<th>Timolol (N=49)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age-years (N=51)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RACE Asian (N=49)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disease type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OAG/OHT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># meds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>27.5(^b)</td>
<td>37.0(^b)</td>
<td>22.4(^b)</td>
</tr>
<tr>
<td>1</td>
<td>54.9(^b)</td>
<td>33.3(^b)</td>
<td>38.8(^b)</td>
</tr>
<tr>
<td>2</td>
<td>9.8(^b)</td>
<td>11.1(^b)</td>
<td>26.5(^b)</td>
</tr>
<tr>
<td>3</td>
<td>7.8(^b)</td>
<td>18.5(^b)</td>
<td>12.2(^b)</td>
</tr>
<tr>
<td>VF MD (dB)</td>
<td>-2.45 ± 2.6 (20/21)</td>
<td>-1.89 ± 4.2 (20/21)</td>
<td>-1.71 ± 2.9 (20/20)</td>
</tr>
<tr>
<td>Med IOP (mm Hg)</td>
<td>20.7 ± 4.4 (N=51)</td>
<td>20.2 ± 4.8 (N=54)</td>
<td>19.1 ± 4.4 (N=49)</td>
</tr>
<tr>
<td>Unmed IOP (mm Hg)</td>
<td>25.4 ± 3.6 (N=51)</td>
<td>24.8 ± 3.9 (N=54)</td>
<td>24.8 ± 3.0 (N=49)</td>
</tr>
<tr>
<td>BCVA (LogMAR/Snellen equivalence)</td>
<td>0.03 ± 0.08 (20/21)</td>
<td>0.02 ± 0.11 (20/21)</td>
<td>0.00 ± 0.06 (20/20)</td>
</tr>
</tbody>
</table>

**TABLE 2** Postop adverse events through 12 weeks post-implantation

<table>
<thead>
<tr>
<th></th>
<th>Totals (N=154)</th>
<th>Fast elution (N=51)</th>
<th>Slow elution (N=54)</th>
<th>Timolol (N=49)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyperemia</td>
<td>0 (0(^b))</td>
<td>0 (0(^b))</td>
<td>0 (0(^b))</td>
<td>0 (0(^b))</td>
</tr>
<tr>
<td>IOP increased</td>
<td>4 (2.6(^b))</td>
<td>2 (3.9(^b))</td>
<td>0 (0(^b))</td>
<td>2 (4.1(^b))</td>
</tr>
<tr>
<td>Iritis</td>
<td>4 (2.6(^b))</td>
<td>4 (7.8(^b))</td>
<td>0 (0(^b))</td>
<td>0 (0(^b))</td>
</tr>
<tr>
<td>Decreased BCVA&gt;2 lines</td>
<td>4 (2.6(^b))</td>
<td>1 (2.0)</td>
<td>2 (3.7)</td>
<td>1 (2.0)</td>
</tr>
<tr>
<td>Dry eye</td>
<td>3 (1.9(^b))</td>
<td>1 (2.0)</td>
<td>1 (1.9(^b))</td>
<td>1 (2.0)</td>
</tr>
<tr>
<td>Eye inflammation</td>
<td>3 (1.9(^b))</td>
<td>3 (5.9(^b))</td>
<td>0 (0(^b))</td>
<td>0 (0(^b))</td>
</tr>
<tr>
<td>Eye pain</td>
<td>3 (1.9(^b))</td>
<td>3 (5.9(^b))</td>
<td>0 (0(^b))</td>
<td>0 (0(^b))</td>
</tr>
<tr>
<td>Conjunctivitis</td>
<td>2 (1.3(^b))</td>
<td>0 (0(^b))</td>
<td>2 (3.7(^b))</td>
<td>0 (0(^b))</td>
</tr>
<tr>
<td>Foreign body sensation</td>
<td>2 (1.3(^b))</td>
<td>1 (2.0)</td>
<td>1 (1.9(^b))</td>
<td>0 (0(^b))</td>
</tr>
<tr>
<td>PVD</td>
<td>2 (1.3(^b))</td>
<td>0 (0(^b))</td>
<td>2 (3.7(^b))</td>
<td>0 (0(^b))</td>
</tr>
</tbody>
</table>

all groups, visual field loss at time of enrollment was low with a mean deviation below three.

See Table 1 for study patient demographics.\(^4\)

**IOP and medication lowering.** At the 12-week primary endpoint, mean IOP lowering was 8.5 mm Hg (33 percent reduction), 8.0 mm Hg (32 percent), and 7.6 mm Hg (30 percent) in groups iDose fast-elution, iDose slow-elution, and timolol 0.5%, respectively (Figure 1).

Subjects without additional medications through the primary endpoint was 82 percent in both iDose fast and slow, compared to 74 percent in the control group.

At the 12-month secondary endpoint, both iDose fast and iDose slow maintained IOP lowering of 32 to 33 percent from baseline (Figure 2). Out to one year post-implantation, both iDose fast elution and slow elution were able to keep mean medications at or below 0.5.\(^1\)

**Safety outcomes.** For patients in both iDose groups, the safety profile was favorable with no intraoperative or serious adverse events.


Dr. Ibach is a cornea, glaucoma, cataract, and refractive surgery specialist. He is a consultant and speaker for Glaukos, a consultant for Aerie and Avedro, a speaker for Alcon, and an investor in Equinox. Dr. Ibach enjoys spending as many days as possible at the lake with his family.
Over the past 14 months, I have made dramatic changes to my private practice that have paid great dividends. Before I talk about those changes, it is important to see where I was before I started.

I had been in private practice for 28 years. While the practice was going fine, we were not growing or slipping—we were stagnant. Our dispensary sales were flat, and our private pay sales were abysmal. It was extremely rare to sell a second pair of glasses under any circumstances.

Our labs provided acceptable service, but we were waiting a week to 10 days to receive our jobs. Many patients were not happy about this. Like everyone, my practice was under attack from online opticals and same-day opticals that could give as good or better service for a lower price.

Rethinking our approach

But then a series of events happened that caused me to rethink the whole basis of my practice.

It started when I learned that LensCrafters, one of the oldest one-hour labs, was getting rid of its in-store labs and moving away from one-hour service. I also heard that Walmart was not doing a lot of same-day service any more. In fact, it seemed that almost every optical, private or not, was going to centralize lab work in order to save money at the expense of patient convenience.

Because many local labs were moving away from same-day service and into slower service, this gave me an idea where I could differentiate my practice.

I was going to do completely the opposite of all of these companies. I was going to change my practice top to bottom to deliver same-day optical service, and in general, improve all aspects of the customer service we were delivering, both professional and retail.

Lab services

I started taking a look at my office laboratory. I had an edger, but it had not been used much in years, so I had it serviced. I could now implement in-house finishing which should cut a day or two off of our service.

Next, I decided to stock single-vision lenses. On the advice of a colleague, we stocked one type of single vision lens: single-vision polycarbonate anti-reflective (AR) lenses. This allowed us to provide single-vision prescriptions in as little as 10 minutes to those who wanted them.

This move also gave us the opportunity to provide in-office finishing for patients with vision plans such as VSP, and deliver much faster service than our VSP lab, which generally took two to three weeks.

I was able to buy the $60,000 unit for only $4,000. That should be a lesson to everyone—know how to perform every job in your practice, not just the clinical care.

After getting the units serviced, we could handle these jobs for much less than we were paying our current laboratory to send us uncuts.

Despite these improvements, we still needed to have a good lab that we could count on to produce those lenses outside of range and handle prism and specialty lenses.

I was fortunate at about the same time to learn of a new laboratory that just opened which was predicated on affordable prices as well as giving the best service. This lab enabled us to obtain uncuts at less than 50 percent of what we were paying and to receive most in one to two days.

This meant that we should be able to deliver nearly 100 percent of our prescriptions in at most two days’ time, with the vast majority available the same day.

Optical

Many of the pieces were now starting to fall in place. We had the faster turnaround time we wanted, but we ensured that we had the quality we wanted. By stocking only polycarbonate AR lenses, patients who wanted same-day service had to purchase...
Coaching for Dry Eye Success: SYSTANE® Complete

Dry eye is more important to your patients than you may realize. In my experience as a Dry Eye Coach, patients with dry eye are very concerned by the effect it has on their vision and ability to function, especially at work. My own history as a dry eye sufferer has helped me to understand its impact. I try to follow a healthy lifestyle that includes daily runs. On those days where I experience dry eye symptoms and don’t have my lubricant eye drops handy, my daily workouts are abbreviated or even cancelled because it’s too uncomfortable to pursue outdoor activities.

Although I’m familiar with the symptoms my dry eye patients may be experiencing, when patients come in for help, I still need to listen and uncover their needs—how long they have been suffering, the remedies they have tried and stopped using, what they would consider successful relief from dry eye all play a part in how I formulate a successful, individualized symptom management plan. I believe SYSTANE Complete is an excellent option for managing dry eye symptoms in many cases.

SYSTANE Complete is an important addition to the armamentarium for managing dry eye symptoms because it is formulated to provide relief for every major type of dry eye and supports all layers of the tear film. That is a significant attribute because the recent DEWS II Report described dry eye as a multifactorial condition that can be aqueous deficient or evaporative in nature, but more likely a combination of both. SYSTANE Complete’s patented formulation is designed to supplement and stabilize the tear film. It accomplishes this through the use of advanced lipid nanotechnology that allows for the optimization of HP-guar concentration and improved cross-linking. This enhanced HP-guar meshwork results in better retention of the active lubricant on the ocular surface vs SYSTANE Balance which locks in moisture for long-lasting relief.

There are many products on the shelves, so your recommendation is very important. I recommend SYSTANE Complete to help simplify the management of my patients’ dry eye symptoms.

Managing dry eye symptoms effectively is not just important to your patients, but also to your practice. Happy patients come back. Patients that don’t find dry eye relief will continue to seek out other eye care providers until they do. With SYSTANE Complete, you can meet the needs of your patients and provide relief for every major type of dry eye and I can keep doing my morning runs.

Dr. Hauser was compensated by Alcon for her participation in this advertorial.

Dr. Hauser was compensated by Alcon for her participation in this advertorial.

Customer service
Continued from page 20

a premium product. Our cast lenses are quality high-index aspheric lenses.
All of my patients were now going to walk out with glasses that I could be proud of.
We then turned to the frames in our dispensary.
While we had a variety of frames, we did not have many high-end frames. Again, a
good friend suggested that the reason we are not selling more eyewear is because we
do not offer high-end frames that people want. He told me that if I stocked them,
people would surprise me and buy them, including my Medicaid patients.

I wanted my organization to improve to keep its word, which is the most basic
tenet of customer service
We did not want to set up multiple accounts with new frame manufacturers without
out knowing what we wanted. So again, on the advice of my colleague, we worked
with a company that stocks frames from many high-end manufacturers but sells
them in packs below wholesale, enabling us to buy frames and try out different
manufacturers without committing to a large purchase.
Because this company’s prices were below wholesale, the practice was able to make
more money on third-party patients.

Pricing
This brings us now to an important point: I had to raise my prices.
In an industry in which we hear about optics giving away eye exams, I realize
that if my staff and I want to provide good customer service, we need to make the
money to be able to provide what my patients wanted and deliver it to them sooner
than expected.
You can not provide excellent customer service at low prices.

Doctor recommendations
Meanwhile, I changed my presentation in the examination room to recommend the
best materials and eyewear that are available to all my patients, including Medicaid.
I informed them that we have our own lab, and their glasses might be ready the
same day. I knew this would put us under pressure to deliver—but if you promise,
you must deliver.
I wanted my organization to improve to keep its word, which is the most basic
tenet of customer service.

Better service, happier patients
The result of the changes my practice implemented was that patients were blown away.
Not only were they getting better materials than they had had before, they could
not believe the speed of delivery. Getting a product while they waited closed the sale
many times.
As an example, we had an employee from Amazon go bonkers when we made
his glasses in 10 minutes, then he referred his mother. She came in the same day after
canceling her appointment at an optical
that used to offer same-day service.
This started a chain reaction of referrals and new patients coming into the practice.
We added our same-day service pledge to our website, which we updated with
online appointment scheduling and optimized for mobile viewing.
Streamlining our optical, adding online appointments, and providing same-day service
freed up staff time. We were able to
increase the number of appointments we booked every day by 25 percent, which
further improved our bottom line.

Contact lenses
I then turned my attention to the contact
lens side of my practice.
It would sometimes take several days to a week to obtain trial lenses and pa-
tient supplies, and patients did not appreciate the wait. The result was that many
patients took their contact lens prescriptions elsewhere.
Fortunately, our contact lens distribu-
tor was bought out by a larger distributor,
and we began receiving our contact lenses
within 24 hours.
I then found a company that would put
a store page on my website to allow my patients to order their contact lenses on-
line 24 hours a day. Patients were able to
have the lenses shipped to their homes.
We have increased the number of pa-
tients who purchase contact lenses from
the practice instead of from online contact lens retailers.

Professional offerings
The next step, which I thank many ODs don’t think about, was expanding my pro-
fessional skills.
I learned how to fit scleral lenses for kera
tonicus, irregular corneas, and dry
eye. I also learned how to fit orthokerat-
tology (ortho-k) lenses and contact lenses
for myopia control.
We have gained several patients in these
specialties who are no longer referred out.
I have discovered that some patients are
considering refractive surgery, but they don’t
mention it to us until we discuss ortho-k.
Patients are excited there is a nonsurgical
way to correct their refractive error for about
one-third the cost of refractive surgery.

Staff
One area of customer service all ODs could improve is taking good care of staff.
We put in standing desks to ease computer
strain, and we added a microwave, refrigerator, and coffee station so employ-
ees would not have to waste their lunch
hours running out for food.
I performed ortho-k on one staff member,
and she is ecstatic to be out of glasses for the first time since she was 11 years old.
We want staff to be happy and with the
practice long term. Enthusiastic employ-
ees are necessary for a practice to deliver
the best service, and this aspect is often
overlooked.

Wrapping up
In summary, every decision I made over the past 14 months was about one thing:
making it easier and more exciting to do business with my office.
The results have been spectacular, with
all money invested recovered in the first six months.

Customer service is a great strategy to implement these days because many busi-
nesses deliver poor customer service.
An optometric practice focused on cus-
tomer service charges more, but its patients feel the difference.
It takes a lot of work to consistently pro-
vide exceptional service, but the results
are happier staff, patients, and ODs with
the practice now a high-energy, exciting
place to work.
Consider upping customer service in
your practice.

In his free time, Dr. Frost enjoys inspiring fellow optometrists and spending time with his family. Dr. Frost has no disclosures.

afrost@gmail.com
Revamp your patient handoff

An effective transfer of care better manages the patient’s experience

By Greg Luce, OD

Have you ever found yourself in the parking lot searching for the patient to whom you have forgotten to give an artificial tear sample? How about the time you winced when your staff member helped them during pretesting (“You know, the guy with the green eyes.”)?

Many times have you realized too late that you sent a patient out into the sunny afternoon without post-mydriatic sunglasses? One of our challenges was to decide where the treatment plans were. Many times the patient assumed she was finished when she left the exam room, and she was ready to walk out the door. Often the patient did not look for new eyewear, did not hear about sunglasses on sale, or receive her blepharitis informational sheet. She was awkwardly summoned back to the reception desk to pay her copay, then left without any semblance of executing the treatment plan.

Assessing the process

The process and procedures of a comprehensive eye exam are numerous—from reception, pretesting, and refraction to physical exam, diagnosis, and treatment discussions. No wonder patients and doctors may forget certain aspects of the treatment plan. How many times have you realized too late that you sent a patient out into the sunny afternoon without post-mydriatic sunglasses?

During the patient encounter, there are often many providers involved. The transfer of care from one provider to the next may lead to misunderstood or omitted information and plans. Poor patient handoffs may lead to potential Health Insurance Portability and Accountability Act of 1996 (HIPAA) violations, poor treatment plan compliance, and a perceived lack of professionalism.

Previously in our office, once the exam was completed the doctor would escort the patient to the front to find the appropriate staff member to assist with the next step. With two dispensing tables in the optical, many times both were taken if optical was the patient’s next location, as it often is.

Many times the patient assumed she was finished when she left the exam room, and she was ready to walk out the door. Often the patient did not look for new eyewear, did not hear about sunglasses on sale, or receive her blepharitis informational sheet. She was awkwardly summoned back to the reception desk to pay her copay, then left without any semblance of executing the treatment plan.

We had to find a better way.

After researching other methods of patient handoff, it became clear that there was no need to recreate the wheel.

The amount of revenue per exam increased after implementing the new patient handoff process

The first step

An effective patient handoff will enhance the transfer of care from one provider to another while establishing a personal connection with the next provider. So, what exactly are we handing off?

We are handing off the diagnosis and treatment plan that needs attention. It may consist of a new prescription for ophthalmic lenses, new contact lens trials, a new contact lens care solution routine, a glaucoma eye drop prescription, an educational handout, and the all-important “next step.” The “next step” will specifically define what the patient is to do next.

One of our challenges was to decide where the handoff should take place. By handing off in the exam room, we would improve HIPAA compliance compared to discussing the treatment plans at the front desk or in the optical dispensary. No longer do we discuss any aspect of the visit outside of the exam room.

Handing off in the exam room also bolsters the status of our technical staff. Although our staff members are crossed trained and American Optometric Association (AOA) Certified Paraoptometrics, there is nothing like transferring care and discussing details of the treatment plan with the technician in the presence of the patient to solidify the technician’s role as an eyecare provider and not “the guy with the green eyes.”

Clear communication

How does each provider know when it is time for the handoff in the exam room? There are many options to signal the handoff, including beepers, hallway lighting systems, iMessage, phone intercom, texting, and the use of colored plastic flags outside the exam room door.

We decided to notify our technicians that we are ready to hand off the patient by printing out all applicable treatment plan documents to the printer at their station. This prompts the technician to bring the documents and prescriptions to the exam room to be briefed on the treatment plan.

TAKE-HOME MESSAGE

A practice improves its patient handoff with the aim of improving HIPAA compliance, better communicating treatment plans, and appearing more professional. The practice achieved all that along with avoiding the search for available staff to hand off patients, increasing revenue per exam, and better patient reception to treatment plans.

See Patient handoff on page 24
Patient handoff
Continued from page 23

Patient compliance has improved notably now that the patient hears the plan reviewed with the technician during the handoff. In addition, there is less room for misinterpretation of the plan by the patient and technician, leading to fewer mishaps due to miscommunication.

No longer do we discuss any aspect of the visit outside of the exam room

After identifying our shortcomings in patient and practice management, we held an office meeting during which the staff and doctors were presented the what, when, why, and how the new patient handoff procedure would work. After a 20-minute presentation followed by role-playing various exam encounters with each doctor and technician practicing patient handoffs, we implemented the process the same day.

All doctors and staff are convinced the new patient handoff process was the right fit for the providers and patients. The role play exercise was useful in fine-tuning our delivery during the handoff and working on different scenarios which may come up.

The results
Although our goal was to honor HIPAA, tighten treatment plans, and promote professionalism, we have discovered several unintended bonuses:
- We no longer search for staff to hand off patients
- We have increased our revenue per exam by 12 percent
- Patients have been more receptive to the treatment plans

A few times we hit a snag when the doctor was ready for the handoff, but the technician was not available. Each time another technician stepped in for the handoff. Admittedly, pinch-hitting works best if all staff members are fully cross-trained in reception, pre-testing, dispensing, frame styling, and optician duties.

From a practice owner’s perspective, this has been one of the highlights of my practice management decisions. I think I got this one right. The feeling of a job well done in the exam room is always rewarding, and now I can hand off my patient in a way which does not unravel the progress made. I know the patient understands the treatment plan. I know that my staff understands the treatment plan.

In the past, it was too easy to perform an exam and miss some of the finer details. Did I remember to review the proper contact lens solution use? Did I get the message across how the progressive office lens design that I prescribed works? Did I forget to give the patient that sample artificial tear?

Managing the patient’s experience through his time in the office is a common goal of most doctors. If you have ever been walked into an Apple retail store, you will be managed starting with a greeting at the front door. The late Steve Jobs insisted on owning and operating retail stores for this exact reason. He wanted to manage the customer’s experience from start to finish. Likewise, we can do the same.

Although our intention is to examine, diagnose, and manage vision and eye health, I have discovered that the outcomes of the treatment plans are likely to be enhanced as a result of a professional patient handoff.

IN BRIEF

Uncorrected myopia leads to global economic hit

SYDNEY, AUSTRALIA—Vision impairment caused by uncorrected myopia cost the global economy an estimated US$244 billion in lost productivity in 2015, according to a new study published in *Ophthalmology*.

The research estimated that 538 million people had vision impairment resulting from uncorrected myopia, with the East Asia region—including China—bearing the greatest burden of productivity loss of around US$150 billion. The South Asia and South East Asia regions also experienced significant productivity loss at over US$30 billion each. This represents in excess of 1 percent of GDP in each of the three regions.

The authors say a one-off investment of around US$20 billion would establish the services necessary to provide vision correction to all who need it, potentially leading to a significant annual saving in productivity.

Co-author Tim Fricke from Brien Holden Vision Institute Limited says, "On current trends we expect there will be 2.6 billion people with myopia globally in 2020. While the majority will have access to corrective lenses such as spectacles and contact lenses, enabling them to have good vision, current service capacity will leave well over half a billion people unable to access an eye exam and appropriate correction."

Fricke says vision impairment substantially affects people’s lives through employment, education, and social interaction.

According to Prof. Padmaja Sankaridurg, head of myopia at Brien Holden Vision Institute, a combination of factors explains the substantial burden in East Asia.

“High-density urban living with a focus on near-based activities has resulted in high prevalence and a large number of people with inadequate visual correction,” she says.

Other regions significantly impacted are South Asia and Southeast Asia, both estimated to suffer productivity loss of over US$30 billion in 2015. Researchers conclude that people with myopia are less likely to have adequate optical correction if they are older and live in a rural area of a less developed country.

Researchers note that lost productivity resulting from myopia-related vision impairment represents only part of the economic burden of myopia. Direct costs such as expenses related to eye exams, refractive corrections and managing pathological consequences of myopia, and related opportunity costs, are not covered in their analysis.

REFERENCE


Dr. Luce received his doctorate in optometry in 1990 from the Pacific University College of Optometry. He is an adjunct associate professor at Pacific University College of Optometry. Dr. Luce has served on the Oregon Optometric Physicians Association Board of Directors and has written and lectured on practice management, pediatric eye care, and contact lens topics. Since retiring from his role as a clinic leader for Professional Ski Instructors of America, he enjoys snow skiing, fishing, stand-up paddling, and boating. He has no disclosures.

eyeskidocs@aol.com
Understanding the numbers enables ODs to make a plan for growth

By David Kading, OD, FAAO, and Krystal Patterson

In today’s eyecare world, optometrists are bombarded by numbers. Vendor reps have reports for how the office is performing, the office team wants to look at sales, and the accountant looks at cost-of-goods margin. All of these numbers are important, but the reality is that most eyecare practitioners get overwhelmed and elect to not look at any. It seems at times that putting heads in the sand can be very comforting.

How can ODs gather the information they need to understand the health of their practices?

Gathering metrics

By using a metric software, performance dashboard, or EHR system’s reports generator, ODs can easily monitor numbers and see how their practices are performing.

If you utilize your EHR reports, you may need to spend time pulling the data into a spreadsheet in order to get the comparisons to years past, but with a little work, you can highlight the areas in which you are doing well and areas in which you need to address.

Alternatively, you can utilize a reporting system/performance dashboard that pulls the information directly from your EHR and interprets the data into an easy-to-access, easy-to-read format. Usually, the software systems will clump similar data into certain fields to allow you to assess what is and is not working.

Creating consistent billing habits is vital to eliminate viewing bad data. Some systems help to eliminate “garbage in/garbage out.” Whatever process you use in gathering data for your practice, commit to the process of uncovering business metrics.

Know the metrics

All practices operate under three metrics levels:

- Global metrics. These include gross production, revenue per encounter, or revenue per refraction.

- Contribution metrics. This is a dialed-down category which measures the impact of a global metric. Contribution metrics consist of daily disposable percentage and contact lens capture rate, for example. These two metrics are contributory toward the more global metric of revenue per contact lens fitting.

- Absolute metrics. These metrics are independent of other metrics. They consist of measurements such as frame count and refraction count.

Having an understanding of how metrics build upon each other is critical to knowing where and how parts of the practice and their performance numbers relate to each other.

The key performance indicators (KPIs) that ODs choose to track should relate to a specific strategic business goal and reflect how successful the business is in achieving that goal.

In this article, we will discuss four of our favorite KPIs to monitor when tracking practice performance:

- Revenue per encounter
- Revenue per contact lens fitting
- Revenue per eyewear pair
- Percentage write-offs

These four metrics offer a good pulse point of how well a practice is performing. Additionally, they are well defined and quantifiable. While other key metrics are important for the financial gains of a practice (gross margin, overhead, and staffing costs), let’s focus on areas that relate to patient care and overall billing services by the office team.

Revenue per encounter

Revenue per encounter (RPE) is also known as revenue per patient.

Many practices keep track of their revenue per refraction (RPR). If a practice conducts refractions and eye exams as much of its business, then RPR is a better number to track.

However, if a practice offers any medical eye care, then RPE may be a better metric to measure.

At Dr. Kading’s clinic, nearly half of all patient encounters are medical. We would be extrapolating a significant amount of data to put a value on a refraction (revenue at the end of the month divided by the number of refractions completed).

Instead, we place this value on the visit, regardless of whether it is a contact lens check, glaucoma encounter, or specialty contact lens fit. We think that, on average, it more closely resembles the amount of money Dr. Kading’s practice will make per patient encounter.

Everyone wants to improve their RPE, but it’s hard to simply track it and expect to see results. RPE should be viewed as a global metric because many smaller metrics can greatly contribute to the result.

Knowing the why of metrics is important to make a plan to improve RPE or to continue doing what is successful. Each practice may have key components which help to increase its RPE.

Several contribution metrics drive RPE:

- Revenue per contact lens fitting
- Revenue from eyewear sales
- Frame capture rate
- Revenue per medical patient

Focusing on increasing contribution metrics will inherently improve overall practice performance as well as improve RPE.

TAKE-HOME MESSAGE

Paying attention to certain practice metrics helps ODs to understand what is working and what isn’t. Follow over time these metrics: Revenue per encounter, revenue per contact lens fitting, revenue per eyewear pair, and percentage write-offs. ODs should know, for example, if patients are buying their contact lenses from the practice or if the patient handoff from exam room to optical is successful.
Metrics
Continued from page 25

If an OD sees about 2,000 patient encounters during a year and generates $300 per RPE, the OD will bring in around $600,000. However, if this OD works diligently to increase his RPE to $325, he will generate an additional $50,000.

In Dr. Kading’s office, some ODs generate $495 RPE, while others bring in $375. This is related to the specialty that a person may have (such as high-revenue specialty contact lenses vs. pediatrics). Knowing these numbers for each doctor enables doctors to maximize how well they recommend products or to detect if patients are following through on medical encounters or prescribed products.

Revenue per contact lens fitting
In many offices, contact lens revenue accounts for 30 percent of total gross production. This is a substantial percentage for most offices.

Revenue per contact lens fitting (RCLF) consists of the total revenue from the contact lens exam (such as the fitting fee) plus the revenue from the sale of the contact lenses.

In Dr. Kading’s grandfather’s day, he did not charge for contact lens fitting because 100 percent of his patients purchased their contact lenses from him. However, with the increase in contact lens fitting complexity and the rise of online retailers, ODs had to abandon that method of practice and generate revenue from contact lens fitting.

If you have noticed that your RCLF has decreased over the year, evaluate why. Many practitioners see RCLF as a number that needs to increase every year. Although this would be ideal, if contact lens material capture rate remains the same and fitting fees stay the same, then RCLF will remain the same.

In order to increase RCLF, ODs must make more money from contact lens fittings or sell more materials per contact lens fitting.

Dr. Kading performs a lot of specialty lens fittings and myopia management. These fittings yield more revenue from the fitting and materials fees than a spherical soft fitting and a yearly supply of materials. He uses RCLF to gauge whether he is seeing more or fewer fittings from month to month. RCLF also tells him if he and his staff are succeeding in presenting and selling patients a supply of their contact lenses—or if patients are purchasing their lenses elsewhere.

If contact lenses are a huge part of your practice, it will serve you well to keep an eye on RCLF on a monthly basis.

Revenue per eyewear pair
Many optometry practices rely on the optical to provide a substantial amount of revenue.

ODs and their optical staffs face the problem every day of patients wanting only what their vision care plans dictate. This can cause large write-off amounts that show a negative net production amount at the beginning of the month, making daily tracking difficult. In most cases, net production will even out by the end of the month.

Monitoring the practice’s write-off percentage to month to month and comparing it year over year can provide valuable insight and serve as a check point to ensure all write-offs have been entered each month.

Write-off percentage
This is also known as adjustment percentage.

Gross production (or sales) is the best way to measure a practice’s sales and growth. Gross production is the total amount billed to insurances or direct to the patient. Gross production is a lead factor; lead factors help to guide or influence the data to achieve desired results.

Change the overall health of a practice over time by tracking and improving gross production. Improving contribution metrics that are driving factors for gross production will produce substantial practice growth.

Examples of metrics that contribute to gross production are:
- Number of exams
- Number of encounters
- Sales of contact lenses
- Sales of glasses

Increasing gross production provides the opportunity to also improve net production. Most practices value their worth based on the total amount of net production (money in the bank). In order to set a net production goal, it is important to know the write-off percentage and what is affecting it.

Calculate write-off percentage: 1-(net production/gross production)

Compliance with entering all write-offs into the practice management system in a timely manner is important to maintaining accurate numbers. Write-offs occur when medical insurance or vision care plans don’t pay the complete billed fee.

Most practices do not know the amount they are writing off the day of service. Explanation of benefits (EOBs) statements from insurance companies are mailed about six to eight weeks after the claim is submitted. Some insurance companies pay throughout the month, while VSP pays two times a month. Varied payment schedules can cause large write-off amounts that show a negative net production amount at the beginning of the month, making daily tracking difficult. In most cases, net production will even out by the end of the month.

Dr. Kading disclosed speaking, research, or consulting relationships with Alcon Laboratories, Allergan, Bausch + Lomb, BioTissue, CooperVision, EyeVance, Eyeco, Facebook, Johnson & Johnson Vision, Novartis, Oculis, Optovue, RPS, Shire, SolutionReach, Sun Pharma, TearScience, Valeant Pharmaceuticals, Valley Contax, VSP, Weave, ZealVision, and Zeiss. drdave@specialtyeyes.com

Krystal Patterson has over 20 years experience in the optical industry focusing on measuring KPIs. krystal@glimpselive.com
How private equity affects optometry

Continued from page 1

Plus, selling to a new grad traditionally meant that the selling doctor would mentor and support the new, younger owner, such as how to manage a practice or even financing the sale himself.

The average student debt in 2001-2002 was $99,208. Compare that to the average student debt in 2016-2017 of $174,165.¹ The increase of student debt is a concern to all in optometry.

Exit strategy

Private equity now offers an exit strategy to all practices regardless of size. Private equity by definition has money and can immediately eliminate the headache of ownership.

Depending on which firm you sell to, you may be able to customize how much or how little you want to work after the sale. Furthermore, with the increase in the number of private equity companies purchasing healthcare practices, competition has resulted in many markets. Competition is good for the seller because it often leads to higher sale prices.

If I were to put myself in the shoes of an optometrist looking to cut back or retire, it would be hard not to sell to private equity.

Focus on patient care

So, how does private equity lessen the headache of practice ownership? Private equity firms offer some or all of the following:²
- Financial management
- Marketing
- Human resources
- Accounting
- Managed care credentialing
- Claims processing services

In turn, the doctor can focus on care of patients.

Follow the money

However, private equity firms are not doing this for free; they keep the profits. In addition to profits from materials and/or services, many private equity firms are looking for a big payout when they sell the chain of practices to the next larger private equity firm.

For example, MyEyeDr was founded in 2001. In December 2012, Monitor Clipper Partners invested in MyEyeDr. Monitor Clipper Partners is a private equity firm that has invested approximately $2 billion in 45 companies in North America and Europe.³

In 2015, Altas Partners and Caisse de dépôt et placement du Québec (CDPQ) invested equity in MyEyeDr, and MyEyeDr ended its relationship with Monitor Clipper.⁴

Atlas Partners has invested approximately $6 billion in many companies.⁵ CDPQ has invested $309.5 billion in many companies.⁶

In other words, a smaller private equity company purchased MyEyeDr, then sold it three years later to two larger private equity companies.

Another example is FFL, a private equity firm that has invested over $2.5 billion in over 50 companies.⁷ FFL acquired Eyemart Express in 2014 and Clarkson Eyecare in 2015.⁸

Buying a practice

ODs who are currently employed and eventually want to buy an existing private practice may not be getting the “deal” they may have in the past because purchase prices have likely increased. However, there is value in purchasing a practice if it’s the right practice for that OD.

The easiest way to acquire patients is to purchase a practice. Also, with the rise of alliance groups such as but not limited to Vision Source, IDOC, Professional Eyecare Resource Co-Operative (PERC) and Professional Eye Care Associates of America (PECCA), ODs can benefit from the alliance group resources and buying power.

If an OD decides to purchase a private practice or start a practice cold, he must remember he is now competing with big business.

In the book Good to Great, author Jim Collins references three overlapping circles that make a business great:⁹
- What lights your fire?
- What could you be best in the world at?
- What makes you money?

In my opinion, if an OD can find a niche that falls into these three circles, she will be able to compete with private equity.

Although there are more headaches and management/human resource responsibilities with owning a private practice, ODs receive a financial reward because they keep the profits.

OD income

By comparing 2013 to 2018 numbers (See box at right), the greatest increase in salary is for ODs practicing 0 to 10 years.⁹,¹⁰ Although ODs now have larger salaries for the first 10 years in practice, they see less growth.
Private equity
Continued from page 27

from years 10 through 20. Larger starting salaries are a carrot for new ODs to become employed because they statistically have larger debt than ever before.

In my opinion, the most shocking statistic is that doctors practicing longer than 30 years were making 2.63 percent less in 2018 than in 2013. I think this is due to the increase in private equity purchases of established practices.

Often after 30 years of practice, if not sooner, ODs may value fewer ownership headaches. In exchange for reducing management stress, he may be willing to make less money.

Note that the OD who had been practicing for many years who sells to private equity may take a decrease in salary after the sale, but she received a large payout when the sale closed.

Practice availability
Private equity groups often target established practices. If we assume OD salaries are a reflection of practice profit (which is not always accurate), there is a direct correlation with number of years in practice and profit. In turn, private equity looks for proven practices to purchase.

ODs thinking about starting a practice cold should consider that in the first years they will likely make less money than their employed colleagues. Down the road, they will statistically make more money than employed colleagues, but practice owners will always have management responsibilities in addition to patient care.

As private equity companies buy more private practices, fewer practices are available for individual ODs to purchase. Additionally, many millennials are less interested in purchasing private practices. Commonly, millennials have a “work to live” mentality and value their free time more than baby boomers.

Conversely, ODs who have practiced more than 30 years are most likely baby boomers. Baby boomers were directly influenced by their parents who lived through the Great Depression. Generally speaking, those who lived through that time had a “live to work” mentality.

In 2009, 75 percent of ODs primarily worked in a private practice. In 2015, 58 percent of ODs primarily worked in a private practice.

Private equity has had an effect on shrinking private practice numbers.

In 2013, MyEyeDr/Capital Vision Services, ranked number 13 of top retailers with $104 million in U.S. sales. Eyemart Express was ranked number 8 with $220 million. In 2017, MyEyeDr/Capital Vision Services ranked number 7 of top retailers with $490.8 million in U.S. sales, which is a 371.92 percent increase in four years. Eyemart Express ranked number 10 with $245 million, which is an 11.36 percent increase in four years.

Private equity-owned practices are increasing, and this shift is not unique to optometry. All of health care, including ophthalmology and dentistry, is being approached by private equity.

In the past, health care allowed doctors to reap financial benefits by not only caring for patients but also owning businesses. In the future, will doctors still have the opportunity to own their businesses, or will they strictly be caring for patients? Only time will tell how private equity will change health care—including optometry—as a whole.

### REFERENCES


### SOURCE:

Dr. Moscow focuses on fitting specialty contact lenses and treating eye diseases with a certification to perform subcutaneous and subconjunctival injections. In addition to lecturing, he consults on vision therapy and primary-care billing and coding. Dr. Moscow volunteers as a helicopter pilot with Angel Flight, which transports patients who are financially distressed or who are in time-critical situations due to their medical conditions. He serves as a consultant for Bausch + Lomb. scott@roswelleyeclinic.com

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### AVERAGE OD INCOME 2018 VS. 2013

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<th>Average income in 2013&lt;sup&gt;8&lt;/sup&gt;</th>
<th>Average income in 2018&lt;sup&gt;10&lt;/sup&gt;</th>
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<tr>
<td>Average income for all ODs: $148,220</td>
<td>Average income for all ODs: $168,740 (13.04 percent more than 2015)</td>
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<tr>
<td>Average employed OD income: $116,932</td>
<td>Average employed OD income: $131,761.50 (12.28 percent more than 2013)</td>
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<td>Average self-employed OD income: $179,438</td>
<td>Average self-employed OD income: $227,781 (20.02 percent more than 2013)</td>
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Average income in 2013 for ODs based on years in practice<sup>9</sup>

| < 10 years: $109,341 | 0 to 10 years: $131,236 (up 2002 percent from 2013) |
| 11-20 years: $148,356 | 10-20 years: $169,204 (up 11.39 percent from 2013) |
| 21-30 years: $169,204 | 20-30 years: $199,205 (up 17.73 percent from 2013) |
| > 30 years: $201,359 | > 30 years: $196,052 (down 2.63 percent from 2013) |
Diesel Eyewear leverages dots and metallic for summer

The new Diesel Eyewear SS19 collection features dotted patterns and lightweight metals combined with diagonal metallic inserts at the temples. Transparent acetates with pastel shades, fluorescent metals, and house colors are included in the lineup’s color palette.

SUNGLASS COLLECTION

DL0300 exhibits a double bridge on the frame front. The temples of these acetate sunglasses feature a dotted metal insert.

EYEGLASS COLLECTION

The navigator shape of DL5309 includes a double bridge and contrasting color dots on the inner portion of the top bar. The temples feature a slanted engraving that matches the color of the frame’s front spoiler and metal logo.

DL5312 features a minimal profile in acetate, underlined by thin metal temples and embellished with a metal logo.

DL5313 exhibits a modified square front in acetate paired with thin metal temples and a metal logo.

DL5316 features a plastic and metal rectangular-shaped frame. The front is available in black shades and shiny transparent blue or matte crystal. The temples are embellished with a metal logo.
Guess unveils spring/summer frame collection

The Guess spring/summer 2019 eyewear collection features trendy, easy-to-wear frames with original styles. Men and women's eyewear exhibit bright jelly-pop colors, matte and shiny surfaces, and animal prints. Also included in the collection are oversized square and round frames.

**SUNGLASS COLLECTION**

**GU7613** features a contrasting matte and shiny finish. The round women's sunglasses exhibit transparent temples and a metal core. Available colors include black and Havana.

**GU7636** incorporates a geometric metal frame with a double bridge and “G” logo embellishment stamped along the edges of the frame front.

**GU6948** exhibits a metal frame with a double bridge. A mix of contrasting colors appear along the edges of the frame front with a repeating “G” logo on the temple tips.

**GU6949** features an outer metal rim with an inner plastic lining.

**GU6950** includes metal and injection features with a double bridge. The front frame rings are edged in the same color of the temple tips. A triangle logo is housed on the temple's hinges.

**GU6946** features thin metal edges and a double bridge. Contrasting colors are featured along the edges of the frame front with a repeated “G” logo on the temple tips.
EYEGLASS COLLECTION

The metal frames of **GU2715** feature a butterfly shape on the front. An animal print top bar embellishes the structure.

**GU2715** features a slightly rectangular butterfly shape with an animal print top bar embellishing the metal frames.

**GU2720** is styled in a broad, butterfly-shape. The acetate frame front with metal temples, features a “G” logo. Triangular studs are mounted on the thick sides of the front.

**GU2725** features two-toned rim colorations on painted metal eye rims. A raised logo decorates each metal temple of the round frames.

**GU1971** features a rectangular acetate shape embellished with pops of color along the temples. A transparent frame displays its metal core. The “G” logo is positioned on the joint of the temple close to the frame front.

**GU1975** exhibits a square shape. These acetate eyeglasses include a thin metal bar on the frame front. The temples feature a “G” logo and rubber-coated tips.
Timberland goes renewable with spring/summer line

Timberland’s spring/summer 2019 models are made of at least 35 percent bio-based plastic material derived from renewable resources. The collection is divided into two families: modern casual, which includes frames with a contemporary style; and heritage, with styles focusing on comfort and functionality. A tree logo, rubber-coated details, polarized lenses, and square or round shapes are key features of these frames.

**SUNGLASS COLLECTION**

**TB9174** features a rectangular-shaped front. Available lenses include smoke, flash, or mirrored variations. Rubber detailing in a perforated pattern highlights the interior of each temple in contrasting colors.

**TB9175** is defined by its modified round shape. Rubber detailing in a perforated pattern highlights the interior of each temple in contrasting colorations.

**TB9177** exhibits found frames and plastic material on the top bar and temples. The design includes polarized lenses edged in metal. Rubber-effect temples feature contrasting colored outlines.

**EYEGLASS COLLECTION**

**TB1621** features a modified square shape. The frame includes a rubberized finish and lightweight fit.

**TB1624** includes a square frame and keyhole ridge made of plastic material. The temples feature rubber-coated tips and integrated hinges.

**TB1625** exhibits a modified square front and streamlined temples made of plastic. The temples are available in dual color tones and rubberized tips.
Bright colors pop for GuessEyeCandy

The #GuessEyeCandy collection for spring/summer 2019 features sunglasses and eyeglasses in various shapes and bright colors. The collection incorporates metal and TR90, a nylon and carbon fiber material that is lightweight and flexible.

**SUNGLASS COLLECTION**

GU3046 features a round metal frame with a two-toned front. The temples are embellished with a laser-etched logo and injection tips.

GU3047 displays a metal bar on a colored frame front. A gold or silver-colored top bar is available. The Guess logo is featured on the temples along with transparent injection tips.

**EVATIK showcases unique designs**

Evatik’s latest collection of frames showcase architectural design, fine detailing, and pops of color.

E-9190 exhibits a handmade and horn-patterned acetate front wrapped in metal along the top edge of the frame. Metal temples and a double bridge complete the look. Available colors include grey horn, black cognac, and black grey.

GU3042 features a slightly round, geometric shape. These metal frames include slim edges in bright contrasting colors. The colored temples are finished with an engraved logo.

GU3043 exhibits a semi-oval shape, slim edges, and bright colors. The colored temples feature an engraved logo.

E-9191 features a rectangular shape, monoblock front, and a flex hinge. Available colors include khaki silver, black silver, and grey silver.

**EYEGlass COLLECTION**

GU3046 features a round metal frame with a two-toned front. The temples are embellished with a laser-etched logo and injection tips.

GU3047 displays a metal bar on a colored frame front. A gold or silver-colored top bar is available. The Guess logo is featured on the temples along with transparent injection tips.

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What’s it like being on faculty at the same school with your spouse, Joe Sowka? Joe and I are three offices down from each other. Ironically, I don’t see him that much. He works at the main school and runs the glaucoma service, and I work at the downtown clinic. If we’re both in our offices at the same time, he screams down the hall at me. [Laughs] So, it’s very professional. We don’t have any concerns working together. It’s fun when we lecture together. A lot of people don’t even know we’re married.

How do you choose your travel destinations? Most of the time they involve lecturing. They’re usually just interested in Joe, I tag along, and then they say, “If she’s also an eye doctor, maybe she can lecture, too.” We’ve been to Australia five times, New Zealand twice, lots of interesting and fun places to lecture. We tack on extra time. We take things out to play only one at a time. My husband and I both really enjoy animals. It’s a common interest, so we work together to keep the tribe in check. I had cats when I met my husband, but he was a reptile lover and got me hooked. The bearded dragon has a following. He has his own Instagram page. My office is kind of like a reptile museum.

What’s your guilty pleasure food? My personal trainer is well aware of the fact that it’s peanut butter. [Laughs]

What’s something about optometry you’d like to change? In academia, we’re seeing difficulty getting people motivated into the profession based on how much money they’re going to make vs. the debt it takes to get through the program. It’s reaching a critical debt-to-income breaking point. I don’t know what the solution is to that. It’s the same with residencies. I’d like salaries for residency programs increase significantly so that it is a more desirable possibility.

What’s your favorite city? I liked Prague for the historical perspective. It’s beautiful with a lot of history. When we first got to Prague, it was late at night and we saw a lot of graffiti—we associate that in the States with not-a-great neighborhood. We were nervous walking down dark alleys trying to figure out where we were, then suddenly we walked out into the middle of the square and it was gorgeous. That was the most beautiful, but our happy place is Daintree Rainforest in Australia. When we lecture, we go up north to the rainforest area on the Barrier Reef. We stay in huts that are up in the rainforest. No lights, no WiFi, no nothing, and it’s amazing.

Why pursue a master’s in nutrition? Not many people know that I worked as a personal trainer. Nutrition goes hand in hand with fitness. I am finding that when I see patients, a lot of their problems have to do with poor life choices, not adequate nutrition, and certain risk factors. Having been a former coach, I started to merge my old life with my new life. Nova had a great program, and it was convenient. I’m going to continue doing research in that area because it’s interesting to me and eventually pursue licensure as a dietitian. I can have practice inside of a practice where I can legitimately counsel patients with disease—specifically diabetes and hypertension, conditions where patients need to lose weight—and legitimately follow them.

What sort of menagerie do you have? We have quite an interesting ecosystem going on. Everybody is trying to kill or eat the other one. [Laughs] I have a miniature pinscher dog, two cats, a bearded dragon, a leopard gecko, two bald pythons, and two parakeets. We take things out to play only one at a time. My husband and I both really enjoy animals. It’s a common interest, so we work together to keep the tribe in check. I had cats when I met my husband, but he was a reptile lover and got me hooked. The bearded dragon has a following. He has his own Instagram page. My office is kind of like a reptile museum.

What’s the craziest thing you’ve ever done? At a later age, I took up martial arts. I was the only female in the class sparing with men half my age. [Laughs] I have a first-degree brown belt in jujitsu. I’m one of those girls who is comfortable walking into the free weight room in the gym, right in the middle of a sea of men, and have no concerns. [Laughs]

—Vernon Trollinger
The American Academy of Optometry and the World Council of Optometry are joining together to offer a global platform where practitioners, students, researchers and educators can share expertise and engage in the development of optometry’s future. All in one of the top tourist destinations in the world – Orlando, Florida.

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