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GP Clinic of the Future

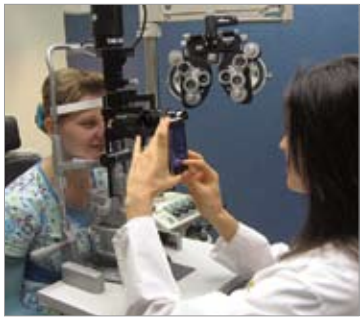
You won't necessarily need a bigger office, just a more robust computer system.

We interviewed several practitioners who are pushing the envelope of current technology and eagerly awaiting the next generation. Here are their views of what is essential now and what to look for in the future.

EMR efficiency

According to Melissa Barnett, OD, FAAO, who practices at the UC Davis Medical Center in Sacramento, electronic medical records (EMR) changed everything in her clinic. "Before EMR, contact lens prescribing involved paper and envelopes. We'd write an order on a form, put it in an envelope and forward it to the technician to place the order," she said. "Now, I send the script directly to the technician via the EMR. If I am prescribing medically necessary contact lenses, I can forward that information to our insurance specialist and the appointment scheduler simultaneously, saving extra steps."

Not only does EMR save time, but it also minimizes the potential for errors when information is disseminated. "With EMR, multiple people have access to the same information.," Dr. Barnett said. "They can review what's been ordered, and find out if it's been received, verified and dispensed."



Dr. Melissa Barnett uses her iPhone to take photos through the slit lamp.

One limitation of Dr. Barnett's current EMR system is that she cannot route photos to her patients' charts. She is also looking forward to being able to use a mobile device to take photos and then discuss them with her lab consultant on the same device. For now, she uses her iPhone to take photos through the slit lamp, then e-mails them to her consultant and discusses the case via phone.

Video adds dimension

Stephen P. Byrnes, OD, FAAO, a GP specialist in Londonderry, N.H., didn't wait for smartphones or mini camcorders to add video to his practice. He developed his own video capture system 20 years ago and has been refining and upgrading the system ever since. He uses an off-the-shelf consumer-type video camera and attaches it to his slit lamp with a custom-made adjustable mount. "It's set up so that it's in conjugate focus with the slit lamp beam, which means the camera focuses at the plane where the slit lamp beam is focused," he explained. "Instead of looking through the oculars, I see the image on a monitor.

Dr. Stephen P. Byrnes has tried several mechanisms for mounting a video camera on his slit lamp.

In addition to assessing GP fits, documenting ocular conditions, educating patients and evaluating new lens designs on his patients, Dr. Byrnes often uses video to provide feedback to lens manufacturers. "Manufacturers and designers may develop the perfect design for the perfect eye, but they don't know how the lens will behave on a patient's eye," he said. "Providing video feedback helps them design better lenses."

Dr. Michael Kaminski uses an external monitor while recording video of a patient's GP lens fit through his slit lamp.

Dr. Byrnes lists several benefits he has derived from using video in his practice, not the least of which is saving time. "I have high expectations of what I can do with a lens, and I am able to achieve my goals more quickly by using video," he said. "When you fit a patient, it's a linear process. You apply a lens. You remove it, and you remember what it looked like. You apply the next lens. You remove it. You remember what it looked like, and so on. I video the first, the second, the third fit, upload them to my computer, and run them side-by-side, so I can see the differences. This usually ensures my lenses are made right the first time."

Dr. Byrnes envisions the GP clinic of the future will have instrumentation to map the front surface of the eye, including the sclera because he believes GP specialists will be fitting more scleral lenses than corneal

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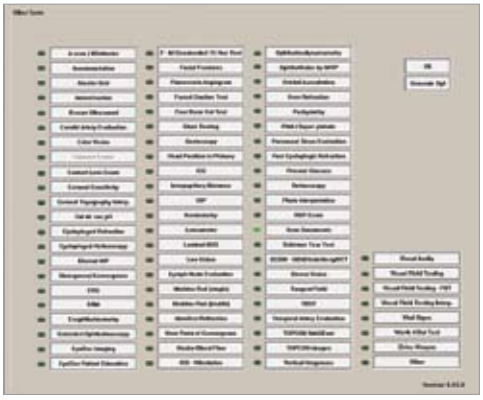
lenses. "I also believe we will be using wavefront technology to determine the best optical correction, which can then be imparted to a totally custom-designed lens," Dr. Byrnes said.



Dr. Cathy Wittman has access to numerous test results through her department's EMR.

EMR to the max

Although video capability is still on her wish list, Cathy Y. Wittman, OD, already has access to some enviable technology in the Department of Ophthalmology & Visual Sciences at Texas Tech University Health Sciences Center in Lubbock, thanks to a dedicated team of computer specialists. "We've been using EMR for 5 years," Dr. Wittman said. "Topography and other ancillary testing, such as OCT, visual fields, photos, B scans, A scans and fluorescein angiography, are all interfaced. My slit lamp camera is interfaced into the system and all of my contact lens photos are in the EMR. We scan in all of our contact lens invoices, so I can review the exact parameters of the lenses that we have ordered for a patient."

Her department's EMR also allows each practitioner to personalize templates for general exams, contact lens exams, referral letters, patient education handouts and so on. "I can go on and on about the neat things our EMR can do," Dr. Wittman said. "If I need to do extended ophthalmoscopy and draw disease, such as diabetic retinopathy, we have a really good drawing tool that can do that. If I suspect glaucoma and order an optic nerve head OCT, I can review it with the patient in the exam room."

Photodocumentation with EMR also helps Dr. Wittman troubleshoot specialty GP lenses. "We can look at every lens we've tried for a patient on one screen, even if we've seen the patient 10 times," she said. "We can view the parameters and the fluorescein patterns, and when the patient returns for follow-up, I can see if the fit has changed. I can e-mail photos to my contact lens consultant for help with a particularly challenging patient."

What does the future hold for GP specialists? Dr. Wittman agrees that scleral lenses will move to the forefront of GP prescribing. She looks forward to having instrumentation capable of measuring the profile of the cornea and sclera from fornix to fornix in several meridians and then sending that information electronically to a lab to automatically generate a custom scleral lens. In fact, she is hoping that e-prescribing becomes the norm for contact lenses.

For now, however, Dr. Wittman has already put her computer specialist on notice about setting up video to interface with her EMR. "Still photos are great," she said, "but video will show you what a standard-size GP lens is doing with each blink and facilitate consultations with colleagues and labs."

Social Networking for Eye Docs

A fan of Facebook (http://www.facebook.com/cathy.wittman), Twitter (https://twitter.com/drcathywittman) and YouTube, Dr. Wittman sees a role for social media in eye care practices of the future. She appreciates being able to educate her patients through these networks, and she also uses them to educate herself. "I love using Facebook and Twitter," she said. "Once you start using these resources, they become enjoyable. Then you meet other eye care practitioners who can teach you. I've learned more about low vision, contact lenses and medical eye care through social networking than by reading a book. I absorb the information faster."

Although critics often portray social networking as time-wasters, Dr. Wittman has found that Facebook, Twitter and good old-fashioned e-mail have improved her accessibility and her ability to manage her time. "I only check my voicemail at noon and 5:00 p.m. I check my e-mail throughout the day, but at my convenience when I have time between patients. It's easier and more efficient to read patients' questions and see what's going on versus make a phone call, which might take quite a while."

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International Offices

Europe/Middle East/Africa:
Mr. Marcel Kopito
marcel.kopito@bausch.com

Japan/South Korea/Taiwan:
Mr. Tatsuo Harata
tatsuo.harata@bausch.com

Latin America:
Ms. Daniela Garese
daniela.garese@bausch.com

China/Australia/New Zealand/South Asia:
Mr. Charles Di Natale
charles.dinatale@bausch.com

North American Offices

David Bland
Director, Global Boston GP Business
david.bland@bausch.com

Kurtis Brown
Manager, Global GP Marketing
kurtis.brown@bausch.com

Karen M. Dussault
Executive Administrative Assistant
karen.m.dussault@bausch.com

Christina Englund
Senior Graphic Designer
christina.englund@bausch.com

Andrew White
North American Sales Manager
Boston GP Business
andrew.white@bausch.com

John Hibbs
Western US Regional Manager
john.hibbs@bausch.com

Edward D. Luce
Eastern US Regional Manager
edward.d.luce@bausch.com

Jim Lunkley
Global Technical Services
Field Representative
jim.lunkley@bausch.com

Virginia Pickles
Contributing Editor
ginnyp@medcomspec.com

For newsletter information:

Bausch & Lomb Incorporated
Wilmington Facility
100 Research Drive
Wilmington, MA 01887 USA
Phone 1-978-658-6111
boston@bausch.com

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The Role of the Medical Affairs Group at B+L

Many medical device and pharmaceutical companies have restructured their organizations to comply with government regulations and ethical guidelines for interactions with medical professionals issued by industry organizations, such as AdvaMed and PhRMA. At Bausch + Lomb, these organizational changes have shifted many of the activities that were performed by marketing personnel to the Clinical and Medical Affairs department. This move has not only helped the company ensure compliance, but it has fostered stronger relationships between the company's eye care professionals and other health care professionals and professional organizations.

According to Joseph T. Barr, OD, MS, FAAO, Vice President, Global Clinical and Medical Affairs and Professional Services, Vision Care, his group has a wide range of responsibilities. "In a way, we are part of R&D in that we perform clinical studies," Dr. Barr says. "Our work involves studies on products that are about to be marketed, but we also do product comparisons and studies to support claims of products already on the market. Previously, in many companies, Marketing handled post market testing and studies, but now Clinical and Medical Affairs does that."

Clinicians interested in investigator-initiated clinical trials may proactively submit a grant application through the company's website, or they may discuss their interest with their B+L representative, who can direct them to Medical Affairs to learn about the application process. The Medical Affairs team determines if a proposed study is consistent with the company's overall strategy and complies with the various regulatory agencies governing medical devices. According to Dr. Barr, B+L has specific criteria regarding its investigators.

Joseph T. Barr, OD, MS, FAAO

"We choose investigators who will be good investigators, not because they use a lot of our product," he says. "We evaluate factors, such as whether or not they have the necessary equipment for the study. Can they demonstrate that they serve a broad range of patient types? Do they have the age distribution we're looking for? Will they follow the protocols scrupulously and record their results accurately?"

The Medical Affairs group also consults with its advisory panel of clinicians, researchers and academicians for advice on new product development and study design. In addition, the group is involved in allocating funds for education and travel grants for educators and students.

According to Dr. Barr, "At B+L, we take our ethical behavior and compliance very seriously as we work with our colleagues across the business to move our business forward to enhance and protect the precious gift of sight."

Fast Forward: A Look at the Future of GP Lenses

Next-generation designs and materials notwithstanding, the best market indicator may be the next generation of eye care practitioners.

We interviewed three contact lens practitioners who specialize in fitting GP lenses, all of whom earned their OD degrees within the last 6 years. We wanted to learn what sparked their interest in GP lenses and what they foresee as the role of GPs in the future.

Early interest

David L. Kading, OD, FAAO

For David L. Kading, OD, FAAO, a residency in cornea and contact lenses was a turning point in his career. "My year of residency was the most enjoyable year of my life," Dr. Kading said. "I learned more in that year than I have in any other year of my life. I fell in love with changing people's lives with gas permeable lenses." (See "Changing Lives With GP Lenses.")

Roxana T. Potter, OD

Roxanna T. Potter, OD, a 2006 graduate of Michigan College of Optometry, attributes her interest in GP lenses to her contact lens professors there. "They were highly trained in GP use, and they were instrumental in showing me the many benefits of these lenses," she said. Dr. Potter also took advantage of a unique opportunity during her residency at MCO, spending one day a week observing and working with the consultants at Art Optical Contact Lens, Inc. "That was a great opportunity to get exposure to hundreds of different GP fits, problem-solving calls and redesigns," Dr. Potter said. "From ortho-k to irregular corneas to multifocals, it became clear that GPs should be a valuable part of any practitioner's contact lens fitting arsenal. I left my residency more comfortable fitting GP lenses than fitting soft lenses."

Derek J. Louie, MSc, OD, FAAO

A 2005 graduate of Southern California College of Optometry, Derek J. Louie, MSc, OD, FAAO, says his interest in GP lenses began in his third year when he worked in a clinic with the contact lens resident and challenging contact lens patients. He went on to a residency at Northeastern State University College of Optometry. Dr. Louie credits his current work environment with helping him hone his skills and find his niche fitting medically necessary contact lenses. "Working at the Casey Eye Institute (Oregon Health & Science University, Portland) which is a full-scope, tertiary care referral center, has given me the opportunity to gain a great deal of experience fitting GP lenses," Dr. Louie said.

Why GPs?

Dr. Potter appreciates the versatility of GP lenses. "Over the past year, I have begun fitting a significant number of semiscleral and scleral lenses on keratoconus and postsurgical patients as well as previous GP or soft lens patients with decentration or comfort problems," she said. "I also take advantage of toric and multifocal designs. In addition, GPs are invaluable in my pediatric population, as ortho-k becomes more popular."

Another plus, Dr. Potter says, is patient loyalty. "During my residency I began to realize the patients who returned to the clinic year after year were loyal GP wearers. This has remained true in my private practice."

Dr. Kading notes that skillful GP fitters can create an important niche in their communities. "If you have an interest in fitting custom contact lenses and specialty designs, you can build a reputation fairly quickly."

Secure future

These practitioners are confident the GP lens market is strong and will support practitioners who want to fit them. "I believe there are thousands of patients with unmet needs that could be met with gas permeable lenses," Dr. Kading said. "Until we stop doing surgery on people's eyes and people stop having keratoconus, there will be a market for GP lenses."

As Dr. Louie noted, "GP lenses provide excellent visual clarity and are very effective at masking ocular surface irregularities. With the increasing popularity of larger, more comfortable and stable designs, I think the percentage of GP lens wearers will grow."

Dr. Potter agrees there will be a move away from traditional small spherical designs. "The scleral lens modality shows great promise for many difficult-to-fit patients, but it will also likely become a useful option for toric, multifocal and even spherical lens applications," she said. "With the traditionally superior GP optics and customizability paired with comfort that rivals that of soft lenses, I predict a quick increase in the use of scleral lenses."

Dr. Kading is co-owner with his wife, Kristi Kading, OD, of Specialty Eyecare Group in Kirkland, Wash., a primary eye care practice with a special emphasis on custom contact lenses.

Dr. Louie practices at Casey Eye Institute, the ophthalmology department at the Oregon Health & Science University in Portland, where he specializes in medically necessary contact lenses.

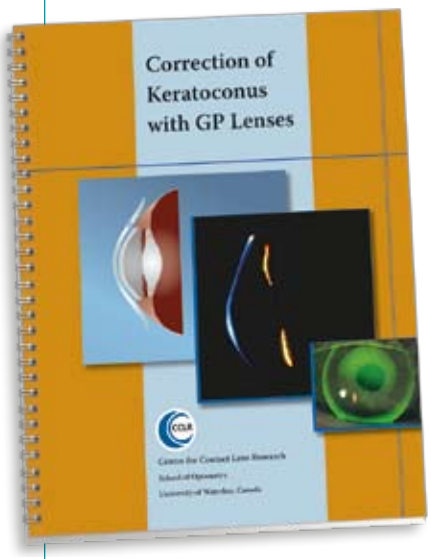
Roxanna T. Potter, OD, is the sole owner and practitioner at Personal Eyecare in Sylvania, Ohio, a primary eye care practice with a specialty contact lens emphasis.

Changing Lives With GP Lenses

David L. Kading, OD, FAAO, often sees patients who are referred to him after they have tried numerous types of soft contact lenses and eyeglasses to improve their vision. "Often they've been through the mill, and a lot of them have been told they just don't have the option of seeing well," he said. "Those experiences play on their psyches, as well as their lifestyle."

One memorable patient had developed post-LASIK corneal ectasia. During her final lens fitting visit, Dr. Kading walked her outside, and she started to cry. "She told me she thought she never would be able to see leaves on trees again," he said. "Simple things like that can be very powerful."

Dr. Kading recalls another patient whom he had been treating for about 2 years. When the woman's husband told Dr. Kading his wife was pregnant, he congratulated the couple and then learned there was more to the story. "Her husband proceeded to tell me that they had not intended to have any more children because of his wife's vision," Dr. Kading said. "He went on to explain that now that his wife can see and drive a car and have a job, none of which she could do before, she decided she wants more kids. That was the most dynamic example of the life-changing power of gas permeable lenses."



New Keratoconus Resource

While the incidence of keratoconus remains quite small (1 in 2,000 patients), it can be a management challenge for practitioners. GP lenses are often the correction method of choice and can provide excellent vision for these patients.

The "Correction of Keratoconus with GP Lenses," by L. Gina Sorbara, OD, MSc, FAAO, and the team at the Centre for Contact Lens Research, School of Optometry at the University of Waterloo, provides insights to aid practitioners in analysis, fitting and follow-up strategies for keratoconus patients. Diagnosis and signs are described in detail, as are many of the fitting methods and design concepts. This text is easy to read and an excellent tool for both novice and experienced specialty contact lens practitioners.

Electronic copies of the "Correction of Keratoconus with GP Lenses" can be accessed at the University of Waterloo website at **http://cclr.uwaterloo.ca/Public/Education/Education.html**. Printed copies can be ordered from your authorized B+L Boston laboratory or Kurtis Brown at kurtis.brown@bausch.com.

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