

# Digital Resources in Ophthalmology

Surgeons list their favorite digital resources for patient education, physician interaction, and practice development.

**BY COSME LAVIN-DAPENA, MD; CYNTHIA MATOSSIAN, MD, FACS; ISAAC W. PORTER, MD; AND DAYA SHARMA, BSc(Med)(Hons), MBBS, MSc, FRANZCO**

**T**he modern ophthalmic surgeon has a range of digital resources at his or her disposal. These resources may be used to educate and engage patients, to assess and boost a practice's reputation and performance, to connect with and learn from colleagues in the ophthalmic community, and more. Below, surgeons share insights into their favorite digital resources in ophthalmology, highlighting pearls for implementation and the benefits afforded by their use.

## Cosme Lavín Dapena, FEBO, MD

### AXIS ASSISTANT: AN APP FOR CORNEAL MARKING

Marking the corneal axis has been more of an art than an exact science. Many new devices try to compensate for the shortcomings of traditional marking techniques using the classic Mendel degree gauge, and it seems that every day a new bubble-level marker appears or a digital guidance electronic marker promises more exact marking. The future of intraoperative aberrometry and surgical guidance is near; however, until then, there is an interesting, easy-to-use app that allows the clinician to use the slit lamp more precisely for axis assessment.

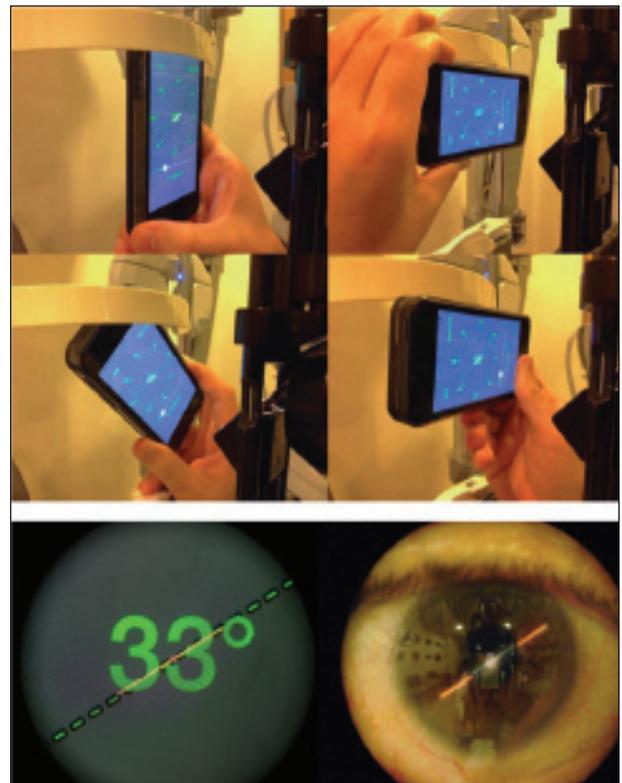
Axis Assistant (developed by Evandro Souza; <https://itunes.apple.com/us/app/axis-assistant/id843536178?mt=8>) is a free app designed to help surgeons mark the corneal axis. It is a precise and inexpensive way to improve the standard methods of marking (30-gauge needle, marker pen, Nd:YAG laser, etc.).

The app features a 360° circle display, from which users can select the degree for exact calibration of the slit lamp position (Figure 1). Using a smartphone's accelerometer,



(Courtesy of José Varas, MD)

**Figure 1.** The Axis Assistant app features a 360° circle display, from which users can select the degree for exact calibration of the slit-lamp position.



(Courtesy of José Varas, MD)

**Figure 2.** Axis Assistant allows the user to place his or her smartphone in any position to precisely position the slit-lamp light in the desired axis for marking.



Figure 3. Axis Assistant features an arc function that is useful for marking an arc on the cornea.

Axis Assistant allows you to place the phone in any position so that you can precisely (within 1°) position your slit-lamp light in the desired axis for marking (Figure 2).

Axis Assistant is useful to preoperatively mark the axis of implantation for toric IOLs. The app also has an arc function that

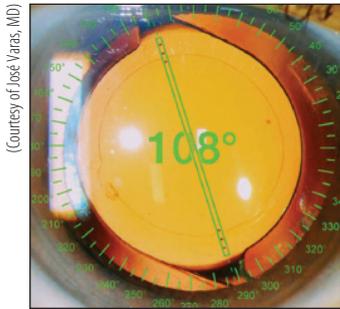


Figure 4. When measuring the postoperative position of a toric IOL, with Axis Assistant, surgeons can use the slit-lamp position or a photograph of the eye to measure the axis.

helps in any situation in which you need to mark an arc in the cornea, such as for intrastromal corneal ring segment implantation or the creation of corneal arcuate or limbal relaxing incisions (Figure 3).

A unique feature of the Axis Assistant is that, when measuring the postoperative position of a toric IOL, you can use the slit-lamp position or a photograph of the eye to measure the axis (Figure 4). This allows one to

determine the position of the lens for posterior calculations.

Axis Assistant is a must-have app for any cataract surgeon who desires more precise marking of the cornea.

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## Cynthia Matossian, MD, FACS



### BLOGS

At Matossian Eye Associates, we produce three to four short pieces of original blog content per week with the aim of providing the public with free educational resources on issues related to vision and eye care. In our blog posts, we discuss the latest in cutting-edge technologies, ophthal-



Figure 1. Several original blog posts are published per week on the Matossian Eye Associates website. Also included are links to the practice's social media accounts.

mic research, and general information about eye health. The posts are published on our practice website and shared across our social media outlets (Twitter, Facebook, Google+, LinkedIn, Pinterest, and WordPress; Figure 1).

## ONLINE REPUTATION MANAGEMENT AND WEBSITE ANALYSIS

On a weekly basis, our social media specialist reviews Internet rating aggregators and social media sites and performs analyses of our social media standing and search engine optimization. Weekly updates of these efforts are sent to management to determine whether any improvements or adjustments can be made. Our social media specialist also seeks out webinars and other educational opportunities to keep abreast of the latest methods of improving our search engine optimization and social media standing. Monthly Google Analytics and other reports are reviewed to analyze our performance and review our website use rates and trends, which are then presented at our monthly physician meetings.

## PATIENT SURVEYS

After each visit, the front desk staff sends every patient who has shared his or her email address with us a survey about his or her experience at our office via SurveyMonkey. Our social media specialist then collects the survey results on a weekly basis, analyzes them, and sorts them based on their positive or negative message. At that point, the survey data are distributed to the practice administrator and office manager for appropriate response.

## EDUCATIONAL VIDEOS AND MATERIALS FOR PATIENTS

At every visit, the physician selects a topic related to

the patient's diagnosis from an extensive list of informational resources to help the patient better understand his or her condition. Our front desk staff then e-mails these informational PDFs and videos to the patient. A selection of these educational resources is also available on our website. The videos are made available by the ECHO system (Eyemaginations), which produces thousands of informational videos that can be branded with your practice's information.

We also produce videos in-house that are posted on our website and e-mailed to patients. One such series, for example, focused on intense pulsed light treatment for dry eye. Included in the video was an interview with me about who would be a good candidate for intense pulsed light treatment as well as a demonstration of the procedure.

### **ONLINE CONTACT MANAGEMENT**

At Matossian Eye Associates, we use an online contact management system that allows us to e-mail our patients while keeping track of those who have unsubscribed and disallowing duplication. We send one e-blast every other week describing the various services we provide and new products that we have made available.

### **WEBSITE**

Our practice website is a source for information about many conditions and treatments. This information is conveyed via pictures, videos, blogs, and links to other informational and government resources on vision and eye health. One resource on our website that our patients have found to be helpful is the Amsler grid. In just 1 minute, patients can check their vision daily to quickly detect subtle deteriorations that could be indicative of a serious problem and to learn whether an appointment is mandated.

### **ALL-DIGITAL PUBLICATION**

*MillennialEYE*, an app-based publication produced by Bryn Mawr Communications, the publisher of *CRST Europe*, is a valuable digital resource, particularly for young ophthalmologists who are developing their careers. *MillennialEYE* features columns on practice development and management, mentorship and collaboration, technological advances in the United States and abroad, and more. It can be downloaded for free in the Apple App Store or in Google Play.

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## **Isaac W. Porter, MD**

### **BLOGS AND YouTube**

Patients today routinely search the web to read disease information, locate physicians, and evaluate practice reviews. We decided to create a blog on our practice website to serve as a resource for current patients and to increase the chances that potential patients will find and choose our practice. If your website does not have a blog, I highly recommend creating one, as it allows you to present yourself as an expert by sharing reliable information from trusted sources. Blogs also enable your patients to see and hear from you, their health care provider, before you officially meet.

The three primary options for blogging are text, video, and audio. In his book *Crush It*, Gary Vaynerchuk covers these three choices and presents many great ideas to start sharing on your website. Most physicians can easily start with a list of 20 to 30 topics in their areas of expertise.

Because I am a cornea specialist, I initially selected basic problems such as keratoconus and dry eye disease to discuss on our blog. To supplement the text, we then created a video blog, called *A State of Sight*, to cover these and other topics in an easy-to-understand manner (Figure 1). The videos are shared on YouTube and posted on our site along with edited transcripts. The transcripts are important to accommodate patients who would prefer to read the blog and to allow search engines to access the entire content.

We have expanded our blog coverage beyond corneal problems to include current topics in ophthalmology and have also invited guests from other subspecialty areas to share their knowledge. As we created more videos, questions arose that we could then answer and expand upon in future videos. We aim to film and create one post per week. At a minimum, I suggest two or three posts per month to maintain a consistent flow of new information. Each video is kept to around 3 minutes in length so as not to lose the audience's interest. If there is too much content to cover in 3 minutes on a specific topic, we break it into two parts to respect the time limit.

We started with a very basic, low-cost setup using a Flip camera. Over time, we have improved our video quality and techniques, but we still try to film in a continuous take to avoid editing. With this approach, our videos are not flawless, but we are able to focus more on the content and information that we are sharing.



Figure 1. The video blog *A State of Sight* presents informative material in a manner that is easy for patients to comprehend.

## SOCIAL MEDIA

In addition to blogging and YouTube, it is also beneficial to have a presence on other social media sites. Patients use social media often, and these platforms can be a great way to interact with them. However, we must be very careful to respect patient privacy. I prefer to give general disease-related information rather than specific medical advice.

I enjoy using Twitter the most for real-time interactions, particularly surrounding events. Medical meetings and conferences usually have an associated hashtag to include in tweets and to follow developments and news from the meeting. I also share posts from our blog and other current topics over Twitter.

Google+ is gaining users and is important because of its ties into Google search. A Google+ business page is listed on Google Local and Google Maps and can be a great way for patients to locate a practice. Make sure that your Google+ page is claimed and that you complete as much detail as possible on the profile.

Recently, we started using a content calendar to help organize our social media posts across Facebook, Google+, Pinterest, and YouTube. Now, we plan our posts ahead of time and have the content approved and ready to go. As the posts are released, we monitor the channels and are available to interact with comments from viewers.

I encourage you to select a way that you would prefer to supply information and start sharing. Our patients are ready to learn!

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## Daya Sharma, BSc(Med)(Hons), MBBS, MSc, FRANZCO



### KERANET

I have been an active member of Keranet, the e-mail discussion list of The Cornea Society, for about 10 years. It is extremely useful for discussing clinical cases, sharing references and resources, and conversing about surgical techniques and equipment with colleagues. There is a large membership from around the globe, including many senior clinical academics and busy private practice clinicians as active participants. It is a distinct advantage to have input from surgeons of varied backgrounds who may offer different perspectives. I have also had the pleasure of meeting quite a few "lurkers"—those who read a lot but usually don't write—at conferences. Given the case mix of most corneal surgeons, there is a lot of discussion of cataract and refractive cases in addition to corneal cases.

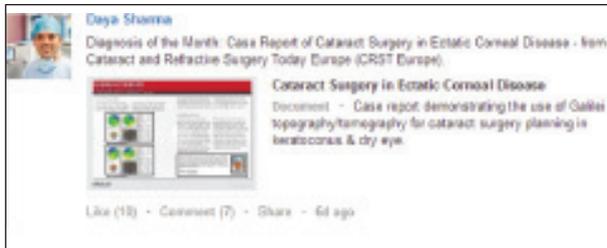
The format of e-mail dialogue allows the transmission of anonymized clinical data such as topographic maps and slit-lamp images as well as in-depth discussions. The ease of viewing e-mails and data on smartphones means that participants can quickly read and respond when they have a spare moment, and I have noticed a trend in the past few years toward more e-mails being sent from smartphones. The total volume of material would be time-consuming to read; however, most people read selectively based on their interests. Although I don't get continuing professional development points for this activity, I consistently find case-based discussion on Keranet an excellent educational resource. I also appreciate the collegial nature of the forum and the opportunity to develop international friendships. Because Keranet is a closed forum, it allows more thorough and frank discussion than a public forum would.

Patients often appreciate if you offer to discuss their case with international colleagues to get further advice or information. It can also be extremely helpful for patients to be able to get a recommendation for a colleague to consult with them when they are travelling.

I was familiar with using e-mail discussion forums for quite a few years before I joined Keranet. For those unfamiliar with e-mail discussion lists, it is worth reviewing general etiquette advice<sup>1</sup> and being familiar with the life cycle of discussion lists.<sup>2</sup> I would encourage surgeons to actively participate in e-mail discussion lists: It is an excellent means of learning from each other, challenging one's own ideas, and updating knowledge.

### LINKEDIN

LinkedIn is a professional social networking site that



**Figure 1.** This LinkedIn update was viewed more than 420 times in 6 days, with more than 70% of these views by second-degree contacts.

has expanded rapidly over the past few years. I first started using the site during my fellowship in the United Kingdom, when I needed to start contacting industry reps back in Australia to arrange for equipment, instruments, lenses, etc. Initially, LinkedIn helped me to find contact details that I had lost since moving or to learn who had moved into a relevant role in the interim. I have since connected with many ophthalmologists and industry contacts throughout the world as well as local referrers and many other contacts outside ophthalmology and medicine. LinkedIn is useful for maintaining contact with contemporaries and junior colleagues to see what roles they have taken. It is helpful that users maintain their own contact details, as this makes it easier to stay in touch when your contacts change phone numbers or email addresses. LinkedIn can be used to advertise open positions, and having a large network facilitates recruitment.

Sharing an update on LinkedIn allows you to keep your professional network informed of your achievements and academic activities. For example, a description and photographs of presentations at conferences can have an enormous reach compared with the number of people who actually attended the meeting. It can remind colleagues of your particular interests and skill set. LinkedIn also allows so-called *endorsements* from connections for various skills, so that users can see in which areas you excel. Some referrers contact me through direct messages on LinkedIn to ask questions, and this can facilitate increasing referrals in the future.

Implementing LinkedIn is relatively simple if you are familiar with Facebook, but, fortunately, the updates on LinkedIn are more relevant to work. If I were to offer a few tips for effective use of LinkedIn, they would be these: Add detail to your profile (including a photo); interact with others in a positive, constructive manner; and post updates related to work you have done so that your direct connections (and their contacts) are more likely to be aware of it (Figures 1 and 2). Additional tips for LinkedIn use are available online.<sup>4</sup>



**Figure 2.** This LinkedIn update was viewed more than 500 times in 7 days, with more than 75% of these views by second-degree contacts.

## TWITTER

Twitter is a microblogging service that limits messages (tweets) to 140 characters. Users can attach images to their tweets, and links to websites are often useful to expand on further details. It is a common misconception that Twitter is for vacuous tweets from celebrities. Twitter use is much broader, and tweets cover a wide range of intellectual subjects, including ophthalmic journals tweeting about new articles, scientists communicating their work directly with the public, and an increasing number of doctors and other health professionals tweeting about work-related activities.

Once you have created a Twitter account, you can follow other users whose tweets will then appear in your feed. (You can start by following @CRSTEurope and its Chief Medical Editors @SherazDaya and @Doktermertens.) The character limitation is useful, as it requires brevity and allows the user to quickly scan through many messages.

I started using Twitter during my fellowship to catch up on local Australian news—primarily just reading tweets from journalists—and then I started following ophthalmic news sources. My usage has broadened to include posting content, primarily related to my work interests in corneal, cataract, and refractive surgery. Sometimes I find myself discussing a clinical condition and then referring to a photo that I have previously posted on Twitter; for example, once when speaking to a primary care physician at a conference about his reduced vision years after cataract surgery, I showed him my Twitter image of posterior capsular opacification, and he subsequently came in as a patient to have it treated. Clinical images attract attention and demonstrate your interests. It is often surprising what the general public will find fascinating and then retweet to their followers.

Using a hashtag on Twitter can help others find relevant content (eg, #cataract) and can help your tweets get attention and be picked up by others. I highly recommend

that you keep them relevant and do not overuse or abuse hashtags if the tweet is not relevant. When tweeting from a conference (which I strongly encourage you to do), try to stick to a common hashtag so that other attendees and people following from outside the conference can interact with you. A hashtag, used correctly, will sometimes receive unexpected and immediate attention.

Although tweets can be protected so that only users you approve can see your tweets, I recommend that you have a public account. (What you tweet could end up in public in any case.) Consider your tweets as public material that any patient or referrer could read. There is controversy regarding whether a doctor should post information as an anonymous user or under a pseudonym.<sup>3</sup> Be wary of what would happen if your identity were revealed, and note that users are notified of your presence by the email address that you use. Be aware of your own local regulations regarding doctors' use of social media.

Some general points of advice for Twitter are as follows:

- Start by following others and observing interactions;
- Remember that you are publicly representing our specialty and doctors in general (information you post may be read much more broadly than you would imagine based on your number of followers);
- Interact positively with others;
- Never post identifiable patient information;
- Obtain patient consent to post clinical data;
- Try to acknowledge new followers and interactions with you; and
- Use metrics such as sumall.com to track your activity (Figure 3).

## SUMMARY

Digital resources can facilitate interaction with colleagues locally and internationally, build your profile, and increase engagement with referrers, potentially building referrals. I encourage all surgeons to take the plunge and interact more using these outlets. ■

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1. Kidman A. Basic etiquette for email lists and forums. February 17, 2010. <http://lifehacker.com/5473859/basic-etiquette-for-email-lists-and-forums>. Accessed August 19, 2014.

2. Nagel K. The natural life cycle of mailing lists. <http://users.riider.edu/~suler/psyber/lifelists.html>. Accessed August 19, 2014.

3. Twitter wars on anonymity of doctors on public social media networks. April 1, 2013. <http://surgicalopinion.blogspot.com.au/2013/03/twitter-wars-on-anonymity-of-doctors-on.html>. Accessed August 19, 2014.

4. 300 million reasons to be on LinkedIn & 10 things to do when you get there. July 18, 2014. <https://www.linkedin.com/today/post/article/20140718233502-36634907-300-million-reasons-to-be-on-linkedin-what-to-do-when-you-get-there>. Accessed August 22, 2014.