

MOBILE APPS: HELP ON TAP

Mobile software applications are as versatile as they are pervasive.

BY ROCHELLE NATALONI, CONTRIBUTING EDITOR



"There's an app for that" is more than a catchy Apple slogan. It is a telltale sign that mobile applications are as pervasive as the smartphones and e-tablets that support them. Mobile "apps," which are actually software programs, have made their way into every sector of the marketplace, from gaming to

education, food, fashion, and beyond. The app trend is hot in health care as well, despite intensive patient privacy protections embedded in the Health Insurance Portability and Accountability Act (HIPAA). In fact, according to the market research firm Kalorama Information, the market for mobile medical apps is expected to grow by 25% annually.¹

Eye care providers interviewed for this article describe their favorite apps—sometimes with the fervor of religious zealots. Arun C. Gulani, MD, director of the Gulani Vision Institute in Jacksonville, Florida, says he uses mobile apps for the same reasons all smartphone users do. "Apps are native to smartphones and easy to use," he says. "My phone is always with me, so my apps are always with me." He classifies apps into two categories. One allows his patients to obtain information about his practice and services. The second kind is enhances/simplifies his work. For example, Medibabble helps him with his worldwide clientele of patients.

Dr. Gulani was among the first refractive surgeons to initiate his own app, which allows patients access to practice information and gives colleagues access to his innovative surgical techniques. If he were limited to one ophthalmology app, he says he would choose Eye Handbook. Developed in collaboration with the American Academy of Ophthalmology, it is widely considered the most comprehensive and versatile app for

eye care providers, he says. "The only thing I might do to improve the Eye Handbook is include video capability and [International Classification of Diseases-10] coding, and that is being done in the newest version," Dr. Gulani comments. "For any eye surgeon, ophthalmic specialist, or ophthalmic staff member, Eye Handbook is an indispensable reference."

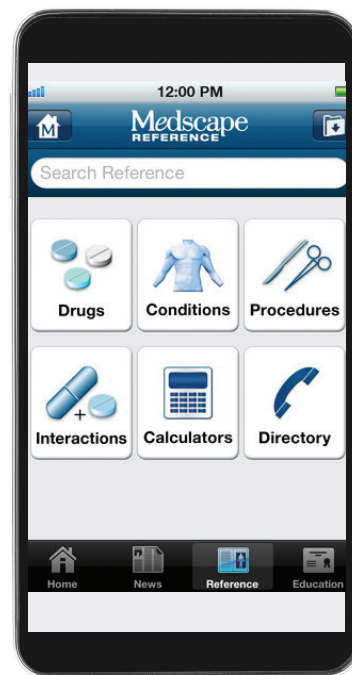
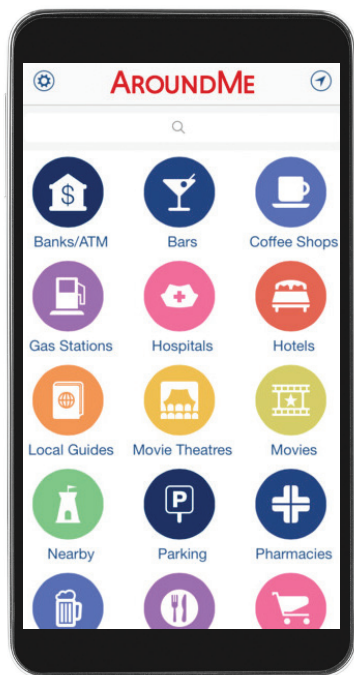
Kendall E. Donaldson, MD, MS, medical director of Bascom Palmer Eye Institute at Plantation, Florida, is similarly enthusiastic. "Among many other things, Eye Handbook serves as a useful resource for ophthalmic medications," she says.

"However, I more frequently have questions about a patient's non-ophthalmic medications." For that reason, Dr. Donaldson also finds the Epocrates app to be an extremely helpful source of the most up-to-date information on any manufactured pharmaceutical agent. "I generally refer to Epocrates once a week or so to refresh or educate myself on a medication that has been released since my days as a medical student and intern," she says. "Epocrates is also an indispensable source of information on drug interactions, metabolism, cost, and pill/bottle appearances—

for those patients who can't remember exactly which medications they take but recognize them by sight."

Dr. Donaldson points out that the sections of the Eye Handbook on educating and testing patients are also exceptionally helpful. The former includes diagrams of the eye that aid discussions of patients' particular ocular concerns, and the latter allows either the patient or physician to assess performance on the Amsler grid. "It's nice that we've come to an era [when] the patient no longer has to hang their Amsler Grid on the refrigerator but can instead discretely monitor their [age-related macular degeneration] between phone calls," she says.





APP BUZZ

CheckedUp and GlassesOff are two distinct types of apps that are generating buzz from appreciative eye care providers. Richard Awdeh, MD, of Bascom Palmer Eye Institute developed CheckedUp. He describes it as a way to engage patients throughout their care. "It increases [patients'] access to their health care providers by allowing them to ask questions without having to make an appointment," he says. "The app also provides information

about conditions, treatments, and surgical procedures in a manner that patients will find easy to understand."

Jonathan Solomon, MD, surgical/refractive director of Solomon Eye Physicians and Surgeons in Maryland and Virginia, is a CheckedUp user and fan. "For a long time, I was calling every single patient after surgery, so following a full day in the OR, I would spend another 2 hours making follow-up phone calls," he says. "With this app, I can check in with patients in a much more efficient manner.

BEFORE, DURING, AND AFTER-HOURS APPS

Ophthalmic surgeon and technology enthusiast Tal Raviv, MD, relies on a catalogue of general medical and ophthalmology-specific apps to do just about everything in his practice easier, quicker, or better. He also makes use of a variety of nonmedical apps to help him with work and work-related activities.

Dr. Raviv, who is a clinical associate professor of ophthalmology at the New York Eye and Ear Infirmary of Mount Sinai, highly recommends PDF Expert. "When I am not in the office and I get a document that needs to be signed, it can be so cumbersome to have to get somewhere to print it out and sign it and re-image it and scan it so that I can send it back signed," he says. "With PDF Expert, none of that is necessary. You can sign the document right on your phone and send it back. I've had people who were incredulous at the speed with which I was able to return a signed document. It takes about 10 seconds."

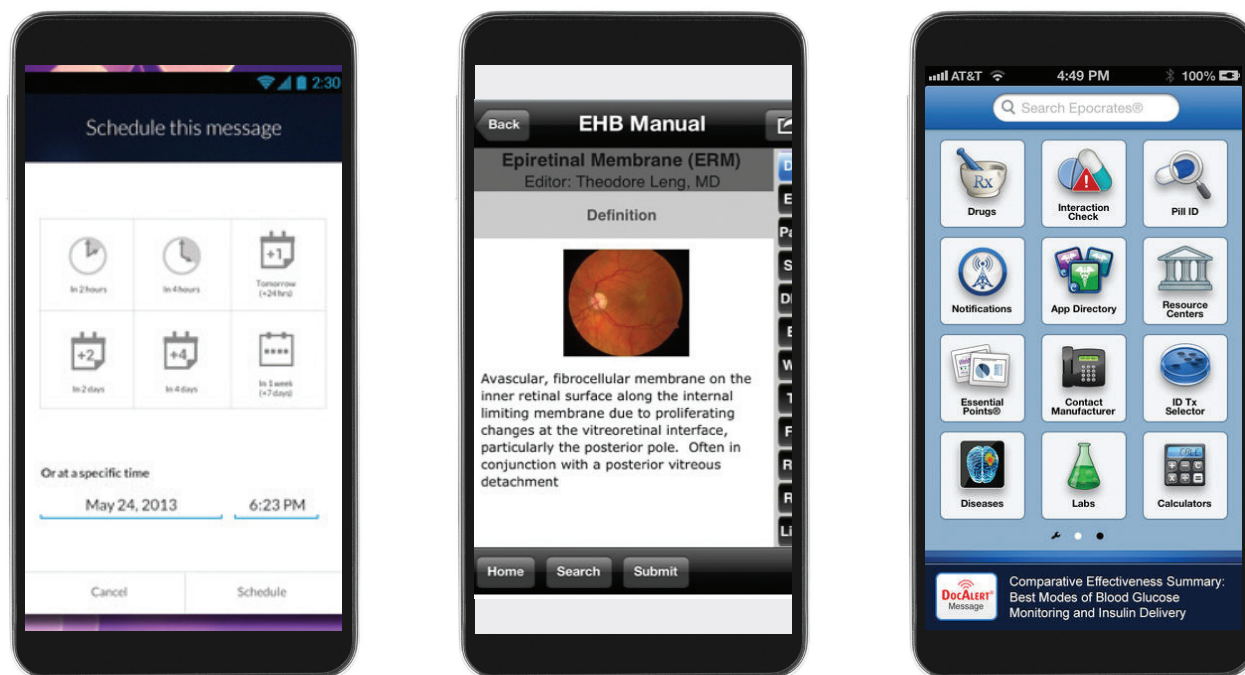
Dr. Raviv also likes MediBabble. Although he says it is especially helpful to medical professionals attempting to communicate with

patients who do not speak English, the app can be useful any time that basic terms and sentences need to be translated. For example, when a patient's native language is not English or is one that Dr. Raviv has no vocabulary from which to pull—such

as Cantonese—this app enables him to type in a question or phrase in English and have it spoken aloud to the patient as well as printed on the screen. This, Dr. Raviv points out, helps the patient feel more at ease and facilitates the examination. "With a tap, it can say, 'Hi, I am your doctor' or 'Please open your eyes' and about a half-dozen other helpful statements," he remarks. "It's not rocket science, but it helps engender a better rapport with the patient."

Scroll It was not developed for use in a medical office, but Dr. Raviv finds the app helpful with hearing-impaired patients. "Previously, I would write with very large letters to try to get my message across, but with this app, I can type something in, and it will slowly scroll across the screen in very large letters. I preset it with phrases and questions that I need to express to the patient so they can quickly respond, and I can also quickly type questions in to show them as the exam progresses."





Sometimes, a phone call can take from 5 to 10 minutes, and with this app, the same interaction can be distilled down to a 20-second text. It's all about checking in to make sure all is going well. That's what connectivity is all about. It's an efficient transfer of information from one person to another."

Patients who are not comfortable with or capable of texting do not have to interact that way with doctors who use CheckedUp. The app is built on a plat-

form that Dr. Awdeh describes as compatible with smartphones, tablets, the web, and traditional telephones, and he says it can be customized to each practice.

Christopher E. Starr, MD, associate professor of ophthalmology at Weill Cornell Medical College in New York, is intrigued by the CheckedUp app and would like to start using it soon. He appreciates its applicability to the informed consent process. "Cataract surgery consent in particular takes more time today than ever before due to the

THESE ARE A FEW OF MY FAVORITE APPS

JOHN A. HOVANESIAN, MD

My Favorite App: Boomerang for Gmail

When we send e-mails, we assume the other party will reply, giving closure to the subject of the message. How often do people not respond, and we forget to follow up? Boomerang allows us to set a message to "boomerang" back to the top of our inbox (marked unread) at a specified time. We can configure each message to bounce back if there's no reply or even if there is a reply. This way, important messages and topics are not forgotten.

AUDREY R. TALLEY ROSTOV, MD

My Favorite Apps: Word Lens, Axis Assistant, and Scanner Pro

Word Lens can visually translate words on a page from any language to English

or vice versa. Axis Assistant can help with axis marking for toric IOLs or limbal relaxing incisions, and Scanner Pro can scan documents and create PDF files. I also favor airline apps that allow you to place your boarding passes in passbook.

JUSTIN SCHWEITZER, OD

My Favorite Apps: Uber and TripCase

Uber gets you a taxi, private car, or ride share from your mobile device; it is reliable and affordable. TripCase enables you to easily add up all trip- or meeting-related expenses

JONATHAN SOLOMON, MD

My Favorite Apps: MillennialEYE and Eyetube

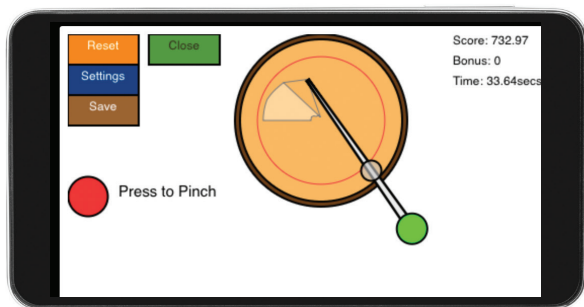
MillennialEYE is probably the one that

I go to most to catch up on really cool articles. I love that one.

WILLIAM B. TRATTler, MD

My Favorite Apps: AroundMe and WhatsApp

AroundMe makes it easy to find the locations of hotels, restaurants, and lectures at eye care meetings. WhatsApp makes it easy—and free—to text colleagues who live in foreign countries; it enables me to communicate with them even more quickly than via e-mail. I use WhatsApp when I am traveling to meetings that are international, because I can communicate both with my colleagues who are at the conference as well as with people whom I have to be in touch with back home.



various IOL options, out-of-pocket costs, femtosecond lasers, aberrometry, managing astigmatism etc.," he says. "A substantial amount of time is required to properly consent and teach patients about the risks, benefits, and various surgical options—time many doctors simply don't have anymore. The CheckedUp app, among many other benefits, helps to simplify the surgical consent process for patients and saves the doctor's valuable time, which makes the app invaluable."

A casual glance at CheckedUp might suggest that it is essentially a patient portal that can be accessed via a

smartphone. This, says Dr. Starr, is not the case. "The key differentiator is that a patient portal allows a patient to log in and see information from their [electronic medical record]," he explains. "CheckedUp, on the other hand, is a patient education and engagement tool, using multimedia, sound, video, animation, and educational processes to engage, teach, empower, and, most importantly, inform and consent patients. This is all tailored to each individual patient based on their treatment program. I don't know of another software package that offers all of that."

MORE INFORMATION ABOUT ALL OF THE APPS DISCUSSED



- appadvice.com/applists/show/apps-for-doctors-with-ipads
- www.imedicalapps.com/2014/03/android-pdf-annotation-apps-physicians
- mobihealthnews.com/23740/apples-top-118-apps-for-doctors-nurses-and-patients
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- travel.tripcase.com
- www.aroundmeapp.com
- www.whatsapp.com
- www.epocrates.com/products

Enthusiasts suggest that GlassesOff may have far-reaching implications for the presbyopic, refractive, and cataract markets. The software's aim is to enable presbyopic individuals to reduce their dependence on reading glasses by improving the image-processing function in the visual cortex of the brain without changing the optical characteristics of the eye. In a study carried out at the University of California at Berkeley, all subjects who completed the GlassesOff program were able to read standard newspaper font size without the use of reading glasses while improving their "eye age" by an average of 8.6 years. The results of this study were published in *Nature's* publication, *Scientific Reports*.²

Dr. Starr recommends the GlassesOff app to patients, family, and friends and says the feedback has been universally positive. "I know many people who have stopped wearing reading glasses altogether after completing the program," he says. "The few negative comments that I have seen in the media are almost always from doctors who haven't used the app and who don't understand the science behind it. The app does not make blurry near images clear like magnifiers. It does not improve accommodation. Nor does it change pupil size or depth of field—and that is not the intent. What it does do is train the brain via neuroadaptation/plasticity to learn to rapidly recognize what the blurry near letters and words are. Via this perceptual learning program, presbyopic patients regain the ability to read without glasses."

Dr. Starr sees the app as a game changer. "This app represents a true paradigm shift in how we treat and correct presbyopia, and like most game changers before it, many doctors often don't initially 'get it,'" he comments.

MORE PICKS

Dr. Solomon frequently uses several apps, including HipaaChat, Cataract Surgery Mobile, and Axis Assist. HipaaChat secures and protects all communications—texts and images—so that physicians can send orders, vitals, laboratory reports, images, referrals, prescriptions, and discharge instructions in compliance with regulatory safeguards. "With this app, I can text and interact with other physicians regarding patients without worrying about compromising patients' safety, confidential information, and such," he says.

He uses Cataract Surgery Mobile as a default during the few free minutes between calls or cases or while waiting in an airport. "This app is basically a program that enables you to work on your skills by using your phone to perform virtual cataract surgery steps." ■

1. Health Data Management. Kalorama tracks mobile medical app market. (www.healthdatamanagement.com/news/mobile-medical-apps-applications-market-kalorama-44597-1.html. Accessed December 10, 2014.

2. Go GlassesOff. Take control of your vision. www.glassesoff.com/the-science/science-for-experts. Accessed December 20, 2014.

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