



BY DAVID GEER

## Apps make it possible

From education to communication, a variety of medical apps enrich patient and physician experiences

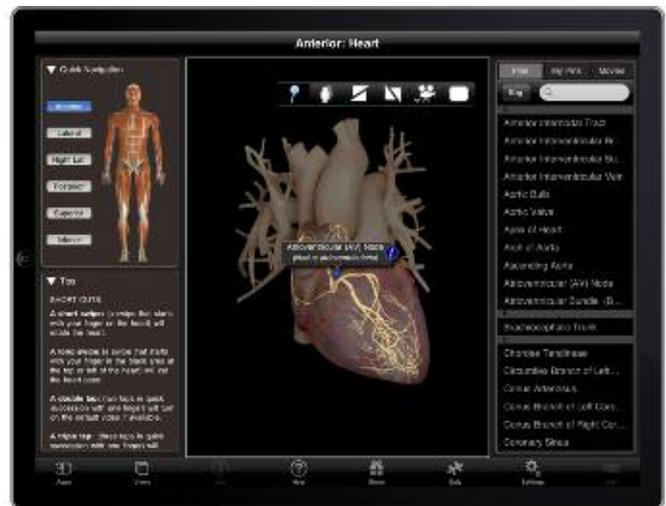
DEVELOPERS ARE INCREASINGLY WRITING mobile apps that operate on and across multiple platforms. Mobile apps for doctors, which are available on a variety of devices including Android phones, the iPhone, iPad and Blackberry, reflect that trend. We've explored the practical benefits of certain mobile medical apps as observed by physicians working in the trenches.

### **The Heart Pro** [ iPhone: \$9.99; iPad: \$17.99 ]

The Heart Pro app is a 3-D interactive reference tool depicting the anatomy of the human heart. Designed by cardiologists and cardiac surgeons, The Heart Pro presents 3-D images of all heart components, enabling physicians to rotate the visual representations, cut them open and label sections of the heart via touchscreen. The app comes with controls for accessing an index of English and Latin terms, transparent heart layers, animations and quizzes.

Lacy E. Harville III, M.D., a thoracic and cardiovascular surgeon in Knoxville, Tenn., who performs up to 1,400 cardiac operations annually, uses the app to educate nursing staff and demonstrate the heart's anatomy and functions to patients.

"Nurses and staff assisting in arduous cardiac operations are not always certain what they are looking at,



The Heart Pro app helps users understand the anatomy of a heart as they rotate, cut open and label it on screen.

even though you as a cardiac surgeon are certain," says Harville.

Harville likes the fact that he can have people looking over his shoulder as he educates them using 3-D images of a moving heart, transecting it to reveal the valves. "Any time patients can better understand the operation they are about to undergo or what their heart problem is, it helps," says Harville.

Harville is particularly pleased that the application developers are working on 3-D images of abnormal hearts so he can explain these abnormalities to patients.

### **Dragon Medical Mobile Search**

[ iPhone, iPad, iPod Touch: Free for a limited time ]

The Dragon Medical Mobile Search app is a voice-activated tool for searching medical content sources and websites such as IMO, Medline, Drugs.mobi, Medscape and Google.

The tool recognizes spoken medical terms and phrases and searches them across the aforementioned information repositories simultaneously. Physicians no longer need to fumble with minuscule, phone-based interfaces typing terminology into a search field. They can simply speak their queries and the search runs instantly.

Reid F. Conant, M.D., an emergency physician in Ocean Side, Calif., who finds himself meeting the needs of multiple acute patients from room to room and across a dispersed geographical area, was seeking a search tool like this. "I don't always have a desktop device such as a laptop with me," says Conant. "I need an app to carry with me to search medical information."

Conant routinely uses the phone-based app to search drug profiles and interactions, diagnostic information and updates, and therapeutics for specific conditions. "When the search results appear on the screen, they are much easier to scroll through than typing on the screen."

The desktop version of the application also runs searches faster than typing on a QWERTY keyboard, especially when searching on more than a couple of words, Conant says.

Conant also uses the app to look up information for patients at their bedside, providing real-time information from reliable sources. "It makes my

work easier because I don't have to follow up to respond to their questions," says Conant.

Conant's favorite features on the app include the ability to cross over from one search tool to another for the same words without re-entering the search. "For example, if I am searching Google for hospital-acquired pneumonia, I can search for condition and diagnostics first, then switch to the drug databases to look for drugs and therapeutics without putting the search in twice," says Conant.

### **The Blausen Human Atlas**

[ iPhone, Blackberry, Android phones: \$19.99 ]

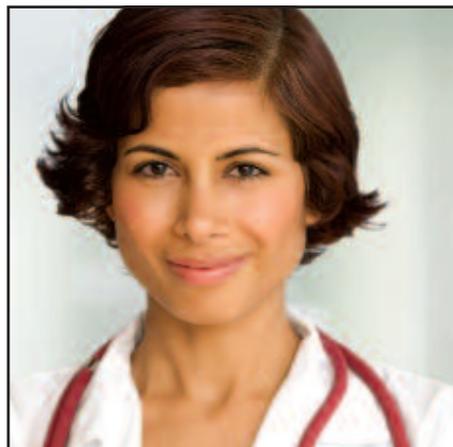
[ iPad, RIM Playbook, Android tablets: \$29.99 ]

The Blausen Human Atlas uses 3-D video animations to educate patients about conditions and treatments at the point of care. Doctors enlighten their patients at the most convenient time and place, directly before their procedure or treatment, relieving patient anxiety, increasing patient compliance with treatment plans and improving doctor/patient communications, all of which lend to better medical outcomes.

The app teaches patients with brief animations narrated using a 6th to 7th grade vocabulary to inform them about 300 common medical conditions and therapeutics. The animations consist of rotatable body figures of nine body systems. The app connects a glossary of 1,500 medical terms to the animations, making terms and animations cross searchable. The app also includes 1,200 still images from the animations. The tool comes in 12 different languages to serve a global medical market.

Harvey Castro, M.D., an emergency physician in Irving, Texas, was looking for just such an app to explain his pa-

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tients' conditions to them. "With the Blausen Human Atlas, patients see the animations with the disease process surrounding their condition and internalize the information," says Castro.

Castro appreciates that developers designed the app to open up directly to the human atlas. Castro can easily scroll through the atlas, breaking down medical explanations to a level patients can appreciate. "Once they see the video, they better understand their medical state. I have received notes and letters from patients expressing how they appreciate all they could see and understand through the app," Castro says.

**Apello Physician Network app [ iPhone: Free ]**

The Apello Physician Network (APN) app is a physician communications tool that connects doctors to each other when time constraints make it impossible to pick up the phone or dictate a letter.

A physician can select commonly used phrases on the touchscreen to compose a text or memo to send to another physician who is using the app or to the physician's fax ma-



The Apello Physician Network (APN) app boasts a robust patient tracking function that is especially useful for group use and effective team sign outs. With APN, physicians can send safe, secure, HIPAA compliant messages for collaboration

chine. Doctors can also send voice messages through the APN system.

The doctor can create a custom communication network inviting other physicians on the system to join so they can communicate about an unlimited number of patients. In

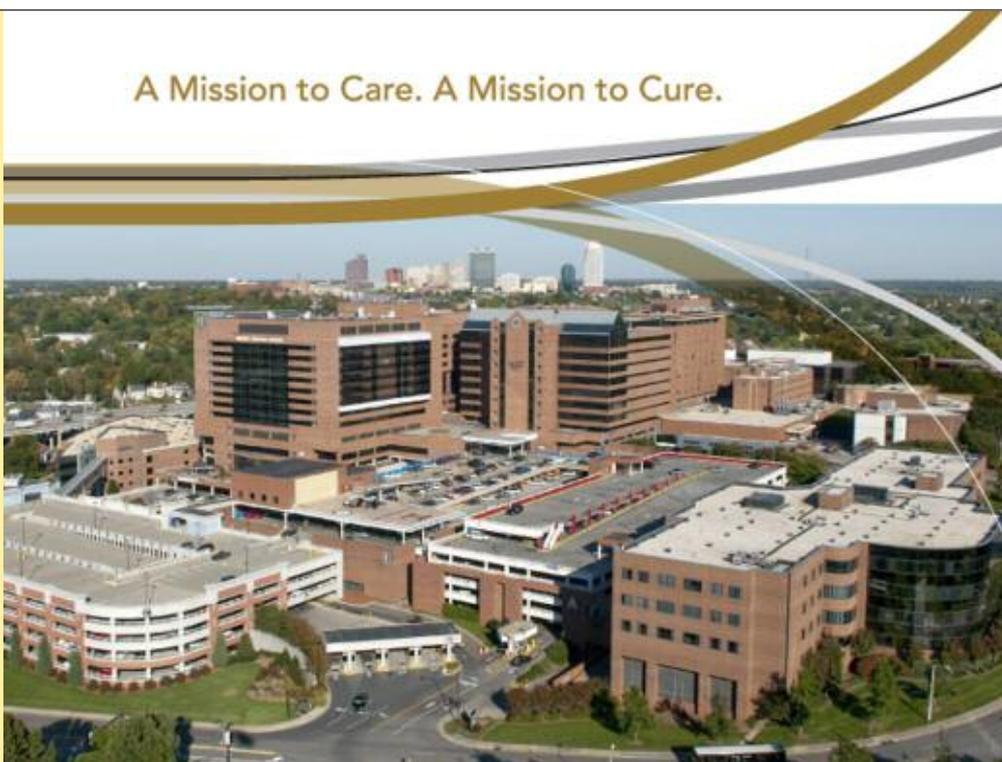
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that network, physicians can view and track labs, medicines and procedures for any patient as quickly as they can touch the screen. Likewise, any physician can locate any other physician using the app via profession, state or hospital and add them to a contact list.

When viewing patient information on the app, doctors can drill down into specific information about each patient including their disease and current treatment plan. The app is fully secure and HIPAA compliant. Patient data remains on a secure server, not on the device. Physicians can search patients by name or any medical record number to find the patient record and attached data. The app connects every record to every other record so that physicians can locate every patient and access all their records using any existing record number.

Cynthia Elkins, M.D., Ph.D., a fam-

ily medicine resident in Southfield, Mich., participates in the residency's inpatient care team of two senior residents, three interns and sometimes medical students, along with weekend and night block residents. The team had previously used a shared Word document to maintain a sign-out list of patients, updates and to-do lists. The Word doc could only be edited or viewed by one person at a time.

One of their staff attendings, Braswell Deen, M.D., developed the app and arranged to have the team beta-test it on iPods, which all members of the team use.

"Using the app, multiple team members can edit patient information at once from wherever they have Wi-Fi—even from home—in a HIPAA-secure manner," says Elkins.

The app saves time and enables an improved, more convenient communication tool for the team. "It gets rid of

notes about patients that team members wrote on scraps of paper, and having to wait for another team member to finish editing the list before you can update the information on your patients," says Elkins.

It also enables team members to access the app from any computer with Internet, which is beneficial for anyone who has difficulty typing on an iPod keyboard. The app reduces human errors that result from forgetfulness, too, because you can add things to the to-do list right at the bedside.

These are but a few of the physician-targeted apps available today. Stay tuned to future Tech Notes columns for more. ●

**David Geer** is a frequent contributor to *PracticeLink Magazine's* Tech Notes department.

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