Healthcare Selfies

CONSUMERS GO MOBILE FOR BETTER HEALTH // By John R. Patrick

>> TODAY'S consumers are taking more responsibility for their health, and they have a vast array of tools at their fingertips to help them do that. Smartphones have become incredibly powerful. A new app called Isabel can instantly and accurately compare data input—such as age, gender, location, and numerous medical symptoms—with a database of more than 6,000 diseases and conditions and produce a diagnosis. While some healthcare providers balk at consumer self-diagnosis, the new technologies are pushing the boundaries of doctor-patient relationships in ways that can be beneficial to both parties.

Part of the shift in consumers' attitudes toward taking care of themselves involves collecting data related to their activities and conditions. More than half of Americans track their weight, diet, or exercise as a way of improving their health. Innovators are developing new mobile-health apps and devices at a frenetic pace, and consumers have a healthy attitude about adopting them. According to industry estimates cited by the FDA, 500 million smartphone users worldwide will be using a healthcare application in 2015, and by 2018, 50 percent of the more than 3.4 billion smartphone and tablet users, including healthcare professionals, consumers, and patients, will have downloaded mobile-health applications. As consumers adopt these "mHealth" apps and devices, they will be performing tests at a much lower cost than traditional laboratories charge.

The FDA sees the widespread adoption and use of mobile technologies as a way to improve health and improve the delivery of health-care services. To date, the agency has approved more than 150 apps and devices. Here's a sample of recent mHealth developments:

AliveCor has a heart monitor that attaches to the back of an iPhone and creates a 30-second EKG.

Cedars-Sinai has integrated consumer data with the hospital's electronic health record (EHR) system for more than 80,000 patients. Cardiac data will flow from the Apple Watch to the iPhone Apple Health database to the EHR database.

The CellScope Oto turns an iPhone into an ear-in-

specting otoscope. Pictures of a child's ear canal can help diagnose ear infections.

A team of engineers at **Cornell University** has developed a smartphone camera attachment that takes a photo of a single drop of blood that a consumer has placed on a strip, and in a matter of seconds a colorimetric analysis displays cholesterol level.

Developed for asthmatics, an app called **Propeller** reports the latitude and longitude of a consumer at the time of an inhalation.

A San Diego startup named **Cue** has developed a compact, consumer-oriented device that can detect five biological conditions/levels at a molecular level, including inflammation, vitamin D, fertility, influenza, and testosterone.

Kinsa's innovative "smart" thermometer is a thin, flexible device that plugs into the audio jack of an iPhone or Android smartphone.

Otoharmonics has an mHealth app that uses a combination of iPad and iPod Touch apps to treat ringing in the ears, a medical condition called tinnitus.

And **Ralph Lauren** is taking the lead in wearable mHealth technology with a new Polo Tech T-shirt interwoven with a set of sensors that track heart rate, breathing rate, breathing depth, activity intensity, steps walked, calories burned, and heart-rate variability.

The pace of mHealth adoption will accelerate; self-monitoring and self-diagnosis are here to stay. ■