Technology: Healthcare in the Fast Lane

November 15, 2006 | Health IT [1]
By Shelly K. Schwartz [2]

We're not ones to prescribe a gadget for every problem, but there are certain thingamajigs you just shouldn't have to live without.

By all accounts, prescribing a drug remains one of the most inefficient processes within the doctor-patient relationship. The physician scribbles the name and dosage of a medication on a paper prescription pad. The patient then hand-delivers that piece of paper to a local pharmacy. Then the pharmacist — who may or may not screen the drug for possible dangerous interactions with other drugs the patient is already taking and who may or may not check if a patient's insurance covers the drug — fills the order. Of course, if the physician's handwriting is unclear, a patient's life is potentially endangered and a physician's career may be ruined as a result.

For safety reasons alone, Michael Nochomovitz, president and chief medical officer of University Hospitals Medical Practices (UHMP) in Cleveland, puts personal digital assistants (PDAs) that enable electronic prescribing at the top of his list of the most physician-friendly high-tech gadgets on today's market. A PDA's wireless hand-held technology allows doctors to access software that enables them to print clear, legible prescriptions at the point of service and even electronically send scripts to the pharmacy of the patient's choice. Most e-prescription software, including Allscripts and iScribe, also allows physicians to review insurance coverage, check for potentially harmful drug interactions, and screen for drug allergies recorded in a patient's chart. And it's not expensive. Allscripts works on any Palm-based operating system, including the Palm TX Handheld PDA, which retails for around $230. Although PDAs entered the market as wireless personal organizers, they now include Web browsers, e-mail functionality, and wireless networking enabled by Bluetooth technology.

"The use of PDAs for electronic prescribing is, I'd say, the most important advance in medical technology over the past couple of years," says Nochomovitz. He notes that 40 offices in his medical group are participating in a national study sponsored by the federal government on e-prescribing. "Writing prescriptions by hand is more cumbersome, less convenient, and, frankly, less safe," UHMP's president affirms.

Nochomovitz says the 330 physicians at UHMP write "thousands" of e-prescriptions each month using Hewlett-Packard's iPAQ Pocket PC, a PDA that retails from $300 to $600. Other PDAs that enable electronic prescribing include the Toshiba Pocket PC, Dell's Axim Pocket PC, and the ACER n30se.

Computing on the go
The tablet PC has come a long way, too. John McCallister, director of information technology for Huntington Internal Medicine Group in West Virginia, says the highly portable technology has fast become an invaluable tool at hospitals and private practices across the country.

Tablets, which also support e-prescribing, provide easy access to data, such as patient charts and test results, in the exam room or on the road. Using a stylus, doctors can update patient files, schedule appointments, and even illustrate procedures on the screen for patients. Tablets also give physicians the ability to connect to their desktop computers, servers, or EMRs. "We're beginning to test scanning chart images so our physicians and patients can see them on the wireless tablet," McCallister says, noting that the doctors in his practice already use the Motion Tablet PC to access patient files and send and receive e-mail.

Screen size, weight, and memory capacity dictate a tablet PC's price. The Motion Tablet LE 1600 with a 12-inch screen starts at $1,900. The LS800 version, with its 8.4-inch screen, is $200 less. Hewlett-Packard also competes with its tc4400 tablet PC, which sells for $1,500; Gateway's Convertible Notebook is priced at $1,399.

Self-serve technologies

From a cost-savings perspective, practice management consultant Elizabeth Woodcock in Atlanta
gives her highest marks to "kiosks" — free-standing computers stationed in medical practice waiting rooms that allow patients to check themselves in and out of the office, submit copays, and electronically sign medical authorizations. Front-desk staff receive this information electronically and can use it to verify insurance eligibility before providing treatment. Kiosk technology has been readily available at airport terminals for several years, allowing passengers to avoid long lines by checking themselves in. Kiosks may also take the form of wireless clipboards.

"This technology is a great return on investment, especially when it's equipped with advanced features like insurance verification and collecting copays with credit cards," says Woodcock. "It's still very new, but we're starting to see them at larger practices in urban markets."

Vendors who supply kiosks include Galvanon in Maitland, Fla., which sells the MediKiosk. Clearwave Corp. in Marietta, Ga., charges roughly $3,000 per kiosk, plus a one-time $1,500 installation fee and a $200 monthly fee for access to Web-based applications; it also offers monthly leasing plans. Company spokeswoman Danielle Misko says practices that purchase their stand-alone kiosk typically see a $15,000 to $25,000 return on investment within the first year. She adds that groups that integrate kiosks into their existing practice management systems can expect an average ROI of $30,000 to $40,000 per year.

**More than just a phone**

Smart phones — relative newcomers to the mobile device market — are especially poised to revolutionize how doctors do business, says Rosemarie Nelson, a consultant for the Medical Group Management Association. This technology is designed to combine the functionality of PDAs with the voice capabilities of cell phones, allowing doctors to talk with colleagues, surf the Web, send e-mail, and browse clinical reference tools — all with a single, hand-held device. Many smart phones, including the Palm Treo, also offer digital cameras, text messaging, and Bluetooth technology that enable wireless connection to other Bluetooth devices, such as headsets and car kits.

But Nelson notes that voice-enabled smart phones, which she says will eventually replace traditional PDAs, are still working out a few kinks. Weak voice reception and slow or shaky Internet connections sometimes make them difficult to use. "Doctors are loving smart phones, but you have to figure out what your dominant need is," she says. "Is it the phone or the PDA? Because the device you select will have one feature compromised at the benefit of the other."

Nelson says physicians who want a hand-held device primarily for its keyboard functionalities, such as sending quick e-mails, accessing the Internet, and text messaging colleagues, may prefer a smart phone over a PDA. But doctors who spend a good deal of time taking calls or who don't want the bulk of a built-in keyboard may do better to keep their PDAs and their cell phones separate.

Although smart phones can cost up to $1,000, Samsung's SCH-i730 retails for around $300, the Palm Treo 700w starts at roughly $280, and the BlackBerry 7130c goes for $199.

**Become truly paperless**

Larger practices with EMRs already in place may want to consider spending the extra couple hundred dollars required to complete their paperless transitions. Bruce Kleaveland, president of Kleaveland Consulting, a Seattle-based healthcare IT consulting firm, says digital signature pads and scanners cost little but pay off big. "When practices get an electronic health record, they're usually so involved in trying to implement the technology and get everyone trained that they don't necessarily explore the other little gadgets that can help minimize paperwork and improve workflow," he says. "That's what it's all about."

With a signature pad, patients can easily sign consent forms and other medical documents electronically, creating a legally binding digital signature that is automatically uploaded to their charts. For administrative staff, there's no need to process additional paperwork or to scan manual signatures.

For $100, Wacom Technology sells the Graphire4 4X5 Pen Tablet, which allows patients to sign on an electronic pad connected to a computer via a USB port. Higher-priced products allow doctors and patients to write directly on a tablet PC. For example, Wacom makes the Cintiq interactive pen display with an LCD monitor, which sells for nearly $2,500. Topaz Systems sells its SignatureGem and SigLite signature pads for anywhere from $98 to $645, depending on the product's technological sophistication. Higher prices usually buy you direct screen-writing capabilities.

Scanners further help reduce patient registration time by copying insurance identification cards and turning them into PDF, TIFF, or JPEG files that can be digitally attached to a patient's electronic medical record. Visioneer sells its Strobe XP 300 portable scanner for around $400, while Card Scanning Solutions offers its MedicScan for $350 to $500, depending upon the product's features.

"These tools were not specifically created for the healthcare arena, but what we're finding is that as
the healthcare industry begins the process of moving from paper-based to paperless, there's a whole host of accessories and gadgets that suddenly become relevant," says Kleaveland.

**Let your mouth do the typing**

Digital voice recorders that enable physicians to verbally record notes, treatment options, and patient information throughout the day give them a high-tech edge in productivity. These devices store dictation as downloadable WAV or MP3 files, which can be e-mailed via a secure server to a transcriptionist or to an on-call physician, who can be informed of any patient health status change that requires action.

"This technology is a lot less expensive and more portable than [traditional] digital dictation systems," says Bruce Eckert, executive consultant for Beacon Partners, a practice management consulting firm in Weymouth, Mass. "It's eliminating the need for written notes."

Many PDAs (and even the Apple iPod) are already equipped with digital voice-recording capabilities, but consumers looking for stand-alone versions can try Olympus, which sells a handful of digital recorders ranging in price from $230 to $450, or Sony's ICD-BMI recorder, which retails for $290. Voice recognition software such as Dragon Naturally Speaking will most likely eliminate the need for transcriptionists in years to come. The software, which can be purchased for $85 to $200, translates a physician's verbal recordings into typed text. Eckert says such software seems to work best in practices with 10 or fewer physicians. "You need to adapt the software to your own idiosyncrasies so it recognizes terminology," he explains. "Large practices, therefore, would have to create a standard medical dialogue, which doesn't always work out so well." The technology remains a work in progress — the automatically transcribed text still requires significant proofing to ensure accuracy.

**Maximizing downtime**

In the race to streamline healthcare efficiencies, both Nelson and Woodcock agree that physician practices of all sizes should incorporate wireless headsets for voice communication as a baseline for their high-tech arsenals. Doctors en route between the office and the hospital can use that downtime to answer phone calls, consult with staff, or schedule appointments hands-free — an increasingly important capability to have as more and more states crack down on unsafe cell phone usage in cars. Woodcock adds that in the office, wireless headsets give staff more flexibility to multitask. "The greatest opportunity with mobile headsets is that you can have a staff member working in medical records or scanning documents and still acting as the operator without physically having to sit there," she says.

Plantronics in Santa Cruz, Calif., markets a collection of wireless headsets with noise-canceling features that fit over the head or around the ear for $100 to $150. Its Voyager 510SL Bluetooth headset, which enables users to switch seamlessly between an office phone and a voice-enabled Bluetooth mobile device, retails for roughly $380, while GN Netcom's 6210 Bluetooth wireless headset will set you back about $200.

**EMRs are not created equal**

For Gill Holland, a solo practitioner in Chandler, Ariz., it's not a gadget, but rather a software solution that gets his highest marks for being one of the most affordable and versatile high-tech picks for smaller practices. After investing nearly $70,000 to implement a complicated EMR and then spending thousands more in annual maintenance fees, Holland scrapped the system shortly after buying it. He turned to a lower-cost alternative called Amazing Charts. This scaled-back EMR software package, designed by a practicing family physician, does away with bells and whistles to provide only the services that solo practices and small medical groups require. It enables electronic scheduling, intra-office messaging, e-mail, and digital patient documentation. "We started off with a much more expensive EMR and scheduler that didn't do nearly as much as this one, and we abandoned it," says Holland. "It was costing us too much money, had too many technical issues, and it was billing incorrectly, so our interfaces kept going down."

A solo practitioner can purchase Amazing Charts for $995; group practices pay $200 more for each additional provider. The company makes its technical support staff available for an additional $500 a year for the first provider, adding $100 a year for additional providers beyond the first. Shelly K. Schwartz is a freelance writer in Maplewood, N.J., who has covered personal finance, technology, and healthcare for 12 years. Her work has appeared on money.cnn.com and Bankrate.com and in Healthy Family magazine. She can be reached via editor@physicianspractice.com.

This article originally appeared in the November/December 2006 issue of Physicians Practice.