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PLUS:

- A PDA in every pocket?
- Facing anorexia



ECTOPIC BRAIN

BY AVERY HURT

When Star Trek's Dr. "Bones" McCoy was faced with a sick crew member or the occasional ailing alien, he waved a small handheld diagnostic device over the patient. His gadget looked eerily like today's PDA (Personal Digital Assistant) without the weird sci-fi beeps and whistles. When McCoy brandished his magical tool, he was likely to get instant answers, and often a cure.

PDA's aren't that good—yet. But for the thousands of physicians and medical students who've come to rely on them, these devices do make the practice of medicine more efficient. Still, they are not without their downsides. And according to some, their niche in the medical world may be a temporary one.

In today's technology-saturated society, where grade-schoolers have cell phones and "BlackBerry thumb" is a recognized ailment, it is not surprising that more physicians are getting jacked in every day. According to a 2006 study in the *Journal of General Internal Medicine*, 50 percent of practicing physicians, and between 60 percent and 70 percent of medical students, use PDA's—defined by the researchers as any pocket-sized handheld computer that typically combines information storage, computing and communications technologies—on a regular basis.

An increasing number of medical schools are requiring students to use PDA's, offering technical support—and sometimes financial support—to facilitate their use. Other schools that do not require PDA's strongly encourage students to buy the portable devices, and learners come to depend on them, especially in the clinical years.

In 2002, Ohio State University School of Medicine (OSU) was one of the first to require PDA's, and now provides all medical students with free Palm handhelds beginning in the third year. [See "The Basics," p. 36.] Incoming residents are given the units as well.

According to Dr. Andrew Thomas, assistant dean for graduate medical education at OSU, "Students are generally embracing this technology; residents, less so."

This may be simply a matter of age and habit, says Allan Platt, senior associate professor

of family medicine at Emory University School of Medicine and author of *Evidence-based Medicine: Using Personal Digital Assistants*, due out this fall from Bartlett and Jones. "In our program we have a diverse age range," he says. "The younger people seem very comfortable with technology; it is second nature to them. The older students have more trouble."

But today's PDA's, which combine many of the functions of a laptop computer, cell phone and personal secretary, can be useful enough to make even old dogs learn some new tricks. After all, there has to be some reason half of all practicing physicians—a number that necessarily includes many who trained in the days when computers stayed obediently on desktops—are carrying around a pocket device McCoy might have envied.

LIBRARY IN A BOX

If you aren't already using a PDA, you may wonder what all the fuss is about. And if you are still walking around with a pocket stuffed to the seams with little plastic reference cards, you'll soon know.

Among other things, a PDA is a library in a box. A variety of medical reference programs, such as Epocrates (pharmaceutical and disease databases, updated regularly), the Merck Manual and many electronic textbooks, are available for PDA's. Programs like MedMath and MedCalc make chores like calculating dosages and determining due dates for OB patients quick, easy and less error-prone. A PDA that can also access the Internet (and most can) puts virtually limitless resources in the pocket of your white coat. ➔

HOW PDAS ARE CHANGING THE CLINIC AND CLASSROOM

"If I see a patient who has a list of 15 meds he is taking, I can do an immediate check for interactions," says Denise Taylor, a third-year physician assistant student at Emory. "Being able to immediately look things up cuts down on mistakes, especially in dosages of medicines." She adds that PDAs also provide a quick and handy way to keep logs of patients seen, tests ordered and so on.

Dr. Brad Crotty, a recent graduate of Harvard Medical School currently interning in general medicine at Beth Israel Deaconess Medical Center in Boston, prefers to use a Palm Treo, a PDA that combines cell phone and e-mail functions alongside typical medical programs. "The best feature of my Palm phone," says Crotty, "is the calendar, which beeps to remind me of appointments and keeps logs of the hours I've worked and procedures I've done. It's more of a personal secretary in a busy world."

Thomas at OSU agrees that many of the most popular features aren't necessarily medical. "Everyone appreciates the calendar," he says. As cell phones get more sophisticated—the new iPhone, for example—there are lots of ways to integrate information and

use the new technologies coming out, he adds.

PDAs are invaluable in the clinical setting, but they have their uses in the preclinical years as well. "Continuing Medical Education articles come in every time you synchronize your PDA," says Taylor. If you have your PDA in your pocket, you can read them in your spare time."

Platt uses PDAs in the classroom in several ways. "One of the beauties of the Epocrates program is the differential diagnosis generator. It's great for new students who haven't had time to memorize much yet."

In one of his courses, students feign particular diseases that they have thoroughly researched, while others try to make a diagnosis. After taking a history, the students who are diagnosing take what Platt calls a "beeper break." They get to say, "Oh, that's my beeper; excuse me, I have to take this call," step out into the hall and look things up on their PDAs. "The students have a blast with this," he says.

Another advantage of the PDA for

study and classroom use is that it offers immediate feedback. That's especially helpful when using self-study programs, many of which offer quizzes and learning games to help with basic sciences courses such as anatomy and physiology, as well as prepare for boards.

Stanford Medical School pioneered the classroom use of PDAs. Its entire curriculum is downloadable from the Internet to the PDA, including streaming video of lectures. This capability allows students to keep up with and review course work any place, any time—as long as they have their PDAs handy and enough charge in the battery.

BRAIN STRAIN

Throw in a digital camera and an MP3 player (available as add-ons to the fancier models) and what's not to love? A lot, actually. Even those who have no serious criticism of the units are quick to point out their limitations. Nathan Morrell, a fourth-year at Stanford, got his PDA as a first-year, but says he is still getting used to it. Though he finds it helpful for getting drug information and logging patient data, many of its capabilities are wasted on Morrell. "Time is always an issue," he says. "No one shows me how to use the programs; I have to figure them out for myself, and I can't spend much time on it. I tend to use only the ones that are self-explanatory."

The most common complaint, however, is screen size. "The old television ad where someone holds up a Palm Pilot with a CAT scan on it is unrealistic," says Thomas. "You can't see that much detail."

Scott Clarke, a student just beginning clinical rotations in the physician assistant program at Emory, agrees. "The reality," he says, "is that PDAs do a lot, but are limited by their screen size. I have lots of small reference books that I still carry around. I am a techno-junkie, but I love to read. It's sort of a love/hate relationship."

Some students, as well as teachers, wonder if relying on a pocket computer, no matter what the screen size, will make them lazy, less inclined to use their intuition and dependent on the information available in their pockets. Of course, as Taylor points out, being able to keep up with evidence-based



THE BASICS

Schools requiring PDAs will either provide one for you or give you the specs you need to choose one yourself. But if you are out there on your own, deciding which device to buy can seem more challenging than organic chemistry. First, a little terminology: PDA is a (very) generic term. The two platforms that support medical programs are the Palm Operating System (OS) and the Pocket PC (Windows). It is generally agreed that Palm has fewer technical problems and much more available software. At this point, Palm is ahead of Windows by 7 to 1, according to Allan Platt at Emory University School of Medicine. Windows Pocket PCs have, at least according to some, more memory, better graphics and better processing speed, but lose out when it comes to battery life.

Find out if your school recommends a format, or offers technical support for one platform rather than the other. If that is not a factor, decide which format you are more comfortable using. Then take a look at the available programs, decide which ones you think you'll need and make sure the device you choose runs those programs. Online sites can be very helpful when making these decisions. For products geared toward medical use, go to www.cent.com for product comparisons and reviews, www.handango.com for software, and www.pdamd.com for a little of both.

—A.H.

medicine is one of the advantages to using PDAs, yet she believes that some caution is necessary. "Instinct in medicine is extremely important," she says. "You have to listen to your gut." Still, she advises, "Check out anything your gut tells you"—an operation that can be done, in part, on your PDA.

For some, the only complaint is when PDAs don't work. Dr. Zack Berger, a first-year resident in primary care at NYU Bellevue Hospital, had recently suffered the catastrophe of a dead battery in his PDA. "I'm suffering from withdrawal," he says.

FUTURE OF POCKET MEDICINE

This year's indispensable gadget is next year's recycling problem; information technology is fickle, and in medicine it will surely evolve beyond handhelds. Crotty sees PDAs as more transition than revolution. "The hopes for medicine switching to [PDAs], and everyone having [one] to sync information to

each other are fading," he notes. "Personal computers are being installed at every hospital desk, and even on roller carts for rounds. PCs are more powerful for researching information, tracking patients and entering orders. Likely, a small version of a tablet PC will come out that will allow quick data entry and quick information retrieval, but is that a PC or a PDA? It's probably a PC."

Even leading-edge OSU knew that the romance wouldn't necessarily last forever. "We didn't do this to solve all

our problems," says Thomas. "We already had in place a digitized ordering system for labs, etc. [when we started using PDAs]. Now we have 200 rolling laptops around the hospital." With laptops getting cheaper, smaller and more ubiquitous in hospitals, they may reduce the need for handheld computers. "PDAs just don't cut the mustard in many ways—mainly screen size," says Thomas.

Taylor, however, thinks that any reports of their imminent demise are very premature. "PDAs won't be replaced by laptops on carts or at stations. PDAs fit in your coat pocket, go wherever you go, and can be personalized with the programs you like to use and information you frequently need," she points out. And until we get our hands on whatever McCoy was using, they'll just have to do. ☺

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