Many aspects of medical practice are being revolutionized by innovative technologies. The Internet, personal digital assistants (PDAs), electronic medical records (EMRs) and wireless technology are gradually making their way into physician practices. Tablet PCs, which have just become available in the last couple of years, are another example of a new technology that has expanding utility in medicine.

What is a tablet PC?
A tablet PC is a truly portable computing tool. It is as powerful as a modern PC, but it doesn’t require a keyboard. Instead, using “digital ink” technology, you can add information by writing on the screen (or “tablet”) with a digital pen or “stylus,” much like you do in a patient’s paper chart. There are two main types of tablet PCs: a slate tablet PC, which is a tablet with no attached keyboard (though one can be added), and a convertible tablet PC, which is basically a laptop computer with a screen that can swivel and fold onto the keyboard to create the tablet.

Tablet PCs are powered by a special version of the Microsoft Windows operating system called Windows XP Professional – Tablet PC edition, which contains the features of a standard desktop operating system and those specific to tablet PCs. Though an abundance of additional software is not yet available, tablet users can purchase several applications that harness a tablet’s unique features. For example, the Microsoft Office applications have many pen-enabled functions (http://www.microsoft.com/office/editions/prodinfo/tabletpc.mspx), FranklinCovey offers a personal planning application for tablet PCs (http://www.franklincovey.com/tabletplanner) and abletFactory has some special-interest dictionary (SPID) applications that can improve the tablet handwriting recognition of medical terms, drug names and abbreviations (http://abletfactory.com).

The cost of a tablet PC ranges from about $1,500 to $2,500. This generally includes the tablet with built-in wireless capability, the pen, the tablet operating system and, in some cases, additional software or hardware. If it’s not already included with the tablet, optional additional hardware may include a floppy or CD drive, a mouse, a keyboard or a docking station. While the cost of a docking station, which can turn a tablet PC into a full-functioning desktop computer, can be about $200 to $300 and the cost of a floppy or CD drive can range from $65 to $300, the costs associated with the other optional hardware are minimal. (See “Comparing tablet PCs.”)

Putting a tablet to use
Tablet PCs have a number of features that make them especially appealing and useful to physicians: portability, wireless capability, handwriting and speech recognition capability and security options. Of course, any new
technology also comes with its own set of problems. Here’s a discussion of some of the tablet PC’s benefits and drawbacks:

**Portability.** When most people envision a computerized office, they probably think of a big PC in every room. However, that PC will not budge when you want to take a trip to the sample closet or leave the room to confer with a consultant. The tablet PC gives you the portability of a PDA and the increased screen size and power of a desktop PC. Although some tablets can remain unplugged for as long as nine hours, most will need to be recharged within four hours. All-day portability can be maintained by charging your battery at lunch or carrying an extra battery with you. Depending on how much you carry your tablet around (and especially if you carry an extra battery), the weight can become burdensome at times. However, the average weight of a tablet, which is only about three pounds, is smaller and more manageable in many cases than that of the equivalent paper charts.

The portability of a tablet can also be a drawback since it has unique pieces, slot covers and pens that can be broken or lost. The hinge on a convertible tablet that allows the screen to swivel may be especially prone to wear-and-tear, depending on how well it’s made. You can provide some general protection for your tablet by using a portfolio or sleeve case, which is usually made of nylon, leather or neoprene, depending on which tablet you have. There are also “ruggedized” tablet PCs available that are covered with external casings to protect them from falls and external elements. Though ruggedized tablets are intended mostly for use in outdoor industries, such as telecommunications, utility work and emergency services, and are heavier, they may be worth considering if your tablet gets damaged often.

**Wireless capability.** Tablet PCs can recognize and connect to wireless networks with no added hardware required. This allows physician users to quickly and easily access the Internet or their network, for example to review patients’ EMRs, research a particular drug or look up ICD-9 codes. Of course, this capability is only useful if you have a wireless network in place in your practice or hospital. (For more on wireless networks, see “A Primer on Wireless Networks,” *FPM*, February 2004, page 69).

**Handwriting and speech recognition capability.** With digital ink technology, a tablet PC uses a screen digitizer to turn your print or cursive handwriting into text that can be inserted into documents. This can be especially useful when you’re taking notes at a meeting or filling out a documentation template at a patient visit. Since the digitizer

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**COMPARING TABLET PCs**

The price, weight and battery life of a tablet PC can vary significantly among different models. Here’s a comparative list of some of the tablet PCs currently available.

<table>
<thead>
<tr>
<th>Model</th>
<th>Price*</th>
<th>Weight</th>
<th>Battery life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motion Computing M1400</td>
<td>$1,649 to $2,351</td>
<td>3 pounds</td>
<td>3.5 hours</td>
</tr>
<tr>
<td><a href="http://www.motioncomputing.com">http://www.motioncomputing.com</a></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Toshiba Portégé M200/M205</td>
<td>$1,777 to $2,348</td>
<td>4.4 to 4.6 pounds</td>
<td>4 hours</td>
</tr>
<tr>
<td><a href="http://www.toshibadirect.com">http://www.toshibadirect.com</a></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compaq tc1100</td>
<td>$1,649 to $2,299</td>
<td>3.1 to 4 pounds</td>
<td>3 hours</td>
</tr>
<tr>
<td><a href="http://h18000.www1.hp.com">http://h18000.www1.hp.com</a></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Electrovaya Scribbler</td>
<td>$1,999 to $2,599</td>
<td>3.5 to 4.5 pounds</td>
<td>9 hours</td>
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<tr>
<td>SC2100/SC2010</td>
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<td></td>
<td></td>
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<tr>
<td><a href="http://electrovaya.com">http://electrovaya.com</a></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>NEC Versa LitePad</td>
<td>$2,399</td>
<td>2.2 pounds</td>
<td>2.5 hours</td>
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<td>http:// nec.com</td>
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</tbody>
</table>

*Price information was gathered from each manufacturer’s Web site as of Sept. 10, 2004.

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**A tablet PC is as powerful as a modern PC, but it doesn’t require a keyboard.**
THE IMPACT OF A TABLET PC

After using my convertible tablet PC in practice for eight months, I have come to depend on it. Having been given wireless Internet access throughout our hospital, I am able to enter the hospital’s electronic medical record (EMR) and e-mail systems via the Internet and access patient labs and reports while I’m in their hospital rooms. The digital pen features available in the Microsoft Office applications that I purchased for my tablet have been useful for resident conferences and faculty brainstorming sessions, since the tablet becomes an immediate digital blackboard when it is displayed on a projector screen.

Of course, I’ve had my share of frustrations with the tablet PC as well. My convertible tablet is heavier than most, which makes it somewhat of a burden to carry around the hospital for prolonged periods, and I’m never sure where to put the tablet while I’m examining the patient. While my battery has never run out during rounds, it has come close; and I’ve found that carrying an extra battery around the hospital is not practical. Another problem for me is that our office’s wireless network does not reach to my patient rooms, which severely limits the usefulness of my tablet in that setting.

Despite these frustrations, I am extremely happy with this new technology. It has already had a significant impact on my patient care and faculty responsibilities. Because of its portability, power and impact at the point of care, I believe the tablet PC will become an integral part of the EMRs and wireless networks that are being incorporated into hospitals and practices.

Some of the drawbacks of certain tablet PCs include a relatively short battery life, a somewhat burdensome weight and a proclivity to wear-and-tear.

Despite these problems, the author has found his tablet PC to be a great resource in his practice, assisting him in patient care and resident teaching.

Mastering all the features of a tablet PC can take time, but it’s well worth it.

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This technology has been a great resource in my practice, assisting me in patient care and resident teaching. It has also helped me to show our hospital that our practice is ready for an EMR. Whether a tablet PC is right for you depends on how much you use PC applications in your practice now and how much you are willing to learn about this new technology. Two good places to start are http://tabletpcbuzz.com, which has general support, tips and recommendations for tablet PC users, and http://medicaltabletpc.com, which provides information specific to the use of tablet PCs in medical practices. Even once you’ve purchased a tablet, mastering all the features it has to offer can take time. But once you get used to using a tablet PC in practice, you may find that it is just what the doctor ordered.

Send comments to fpmedit@aafp.org.

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