



# PDA's: The Whole World in Your Hands

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Your favourite textbook is useless when it's not at hand. The Internet won't help you answer a question if it's not in front of you. The ability to deliver the information you need, when and where you need it, explains part of the appeal of handheld computers.

Also known as personal digital assistants (PDAs), these computers are inexpensive, fast, easy to use, and remarkably capable for something that fits inside your pocket. Recent surveys are confirming what observers saw early on; the devices are being adopted by physicians at a rate far faster than personal computers ever were. In some areas, they are already used more for clinical care than full-sized computers are. They are quickly becoming universal in medical schools, which is remarkable, given that PDAs have been around for only a few years.

There is already some evidence that PDAs can change physician-behaviour and can prevent medical errors. Few other interventions can make this claim. For this reason alone, their use should be promoted.

PDAs exchange information with regular computers through a process called

synchronization. Synchronization serves as an automatic way to load and backup your programs and data. "Syncing" also can exploit the Internet to actually update applications, which enables PDAs to keep information that is current. Of

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## PDA's

course, all PDAs provide useful organizer functions, such as a scheduler and a contact list. Their main medical function, however, is dominated by clinical programs.

### What are the available applications?

When considering which software to use, personal preferences are important. Consider whether you prefer in-depth information or summaries. You may be more fond of narrative descriptions or conversely, may prefer terse bullet lists.

Fortunately, it is common for the medical PDA software to offer "demos." These are typically complete, but temporarily active, versions of the programs which you can download and try without paying. If you decide to purchase the software, you typically are given a key code which unlocks the program. If the product does not suit you, simply delete the demo.

The following suggestions are a sampling of what is currently available. The number of software titles is simply too large and growing to render a complete list.

#### *Pharmaceutical guides*

The most popular applications are the drug references so often required by the busy clinician. The heaviest used reference is probably the ePocrates



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### Frequently Asked Questions

#### Which model PDA should I buy?

In the absence of compelling reasons to do otherwise, consider:

- Buying a PDA that uses the Palm operating system. There is more medical software using this popular OS.
- Getting a colour screen for better readability.
- Making sure the PDA has the ability to accept a memory card.
- Buying as much onboard memory as you can. It is not unusual for programs to be over 4 Mb now. A bare minimum of PDA memory now is 16 Mb. It is obviously better to have 32 or 64.

#### Should I wait until prices come down?

No. The market is still in rapid development, with new models and features being regularly released. There is little to gain in deferring. Buy now if you're curious. You will likely upgrade within two years if you become a regular user.

#### How much should I be prepared to pay?

A perfectly satisfactory PDA can be purchased for \$250. You can get a PDA with state-of-the-art features for \$600. More capability can push the price over \$1,000.

#### Should I shop around for a better price?

Surprisingly, PDA prices are very consistent from one retailer to another. Buy your PDA from someone who will be there in the unlikely event there is a problem. If you are part of an organization which offers subsidized pricing, you should seriously consider that as an option.

#### Where do I go for programs?

Most software is purchased and delivered over the Internet. After downloading to your PC, the software is loaded onto your PDA when you synchronize. The process will take anywhere from moments to a half an hour, depending on the size of the program.

program ([www.epocrates.com](http://www.epocrates.com)). It offers drug information without going into great detail. The program lacks Canadian content. A free version provides basic drug information, but has a very useful interaction checker. The company is marketing a “Pro” edition that is sold with more functionality, including a herbal medicine compendium and infectious diseases guide. Both programs automatically update each time you synchronize. They also provide bulletins for late breaking news and alerts. The company does collect data on your use of these products, but insists the information is not sold to drug companies.

The Lexi product line is a leader in comprehensive, unbiased pharmaceutical content ([www.lexi.com](http://www.lexi.com)). It takes up much more space in your device (over 6 Mb), and is costly. You can expect to pay \$75 US for Lexi’s basic product, which does not include an interaction checker. This fee buys you a one-year subscription with unlimited updates. Numerous add-ons are available.

There are many other pharmaceutical products now in between these two levels. The well-known Tarascon Pharmacopoeia ([www.tarascon.com](http://www.tarascon.com)) is now available for PDA use. Tarascon has several features of interest, including Canadian drug names and an interaction checker.

### Infectious diseases

The venerable Sanford Guide can be purchased for only \$25 ([www.sanfordguide.com](http://www.sanfordguide.com)). It is comprehensive and reliable, although some users find the interface challenging to navigate. Besides the smaller identification component offered by ePocrates, there is a reference from Johns Hopkins called

POC-IT ABX Guide ([www.hopkins-abxguide.org](http://www.hopkins-abxguide.org)). It is free and auto-updates. Like ePocrates, it also collects data on how you use it. Some people prefer its ease of use and do not mind that it is less extensive than the Sanford Guide.

### Calculators

A clinical calculator can be very useful, and most are free. There are dozens of calculators available for special situations, like pregnancy and intravenous drip rate. Two calculators stand out for providing easy to use collections of frequently used formulae. They are MedCalc<sup>1</sup> and MedMath.<sup>2</sup> No PDA should be without one. They are small, easy to use, and can help with a

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## PDA's

variety of useful clinical calculations, such as body mass index, estimating the risk of coronary heart disease, creatinine clearance, and dozens of other functions.

### Medical texts

There are a rapidly growing variety of medical textbook collections for PDAs. The well-known Griffith's 5 Minute Clinical Consult is a trusted reference for family physicians. It provides essential summaries of diagnosis and treatment for a wide variety of topics in primary care. It can be used alone, or obtained as part of a package of products. The Washington Manual of Therapeutics and an abridged version of Harrison's Textbook of Medicine are also popular.

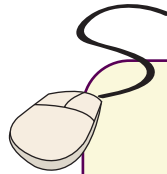
### News services

AvantGo ([www.my.avantgo.com/home](http://www.my.avantgo.com/home)) is a subscription service that automatically delivers selected pages from the Internet to your PDA each time you synchronize. You can access dozens of medical sites for free, including The Canadian Medical Association.

### Newer approaches

Most of the above information has been simply ported over from traditional media (books) to a PDA. However, the handheld offers the capacity to do things that are not possible with print media.

Integrated program suites are an example of an advanced approach to clinical software. They provide a collection of applications and interactivity in an effort to be all things to the clinician. The Portable Emergency and Primary Care Information Database (PEPID) includes a med-



## Net Readings

1. Skyscape  
(Medical references for handhelds):  
[www.skyscape.com](http://www.skyscape.com)
2. handheldmed:  
[www.handheldmed.com](http://www.handheldmed.com)
3. Handango:  
[www.handango.com](http://www.handango.com)
4. Unbound Medicine:  
[www.unboundmedicine.com](http://www.unboundmedicine.com)
5. Dalhousie University Faculty of Medicine:  
<http://handheld.medicine.dal.ca>

ical care reference, drug guide, clinical calculators, and multiple algorithms ([www.pepid.com](http://www.pepid.com)). It has a bias towards emergency medicine, but covers many primary care problems seen in the office. PEPID typically retails for \$139 US, but has been offered at a discount. It requires almost 6 Mb of memory.

The evidence-based database known as InfoRetriever can now be installed on your handheld. It comprises several large collections of relevant patient-oriented information, including decision guidelines, calculators, and thousands of articles that have been digested and summarized by expert reviewers. The collection also comes with 5 Minute Clinical Consult and can be obtained from [www.infopoems.com](http://www.infopoems.com). This extensive resource costs \$249 US for a one-year subscription.

CogniQ ([www.unboundmedicine.com](http://www.unboundmedicine.com)) is a self-described "knowledge management platform" which is multifunctional. It can provide resources to your PDA, such as textbooks (including Harrison's and 5 Minute Clinical Consult), as well as current tables of contents



from selected journals with abstracts. It even supports two-way communication, enabling the user to request articles and perform Medline searches. This means that whenever you encounter a question you wish to look into further, the PDA will take your search criteria right there and execute it automatically for the next time you synchronize. This is an extraordinary utility that takes advantage of the PDA's unique capabilities. These functions are also reportedly offered by Ovid@Hand, and BMJ Publishing Group, and are available from the Unbound Medicine site ([www.unboundmedicine.com](http://www.unboundmedicine.com)).

### Future uses

Surprisingly, the area of continuing professional development has been largely unexploited on PDAs. Being able to perform a CME activity with your PDA, and getting automatic, instant credit for doing so, would be a very attractive feature. While this is potentially available with existing technology, the area has been neglected to date.

Some medical organizations are now integrating PDA use into their applications. Users can get updated schedules and current contact lists from networks and intranets. Several electronic medical record software products can exchange patient information with PDAs. As the field develops, wider use of wireless connectivity means that the practising clinician will eventually be constantly plugged-in to the latest resources needed for patient management. CME

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3. Rothschild JM, Lee TH, Bae T, et al: Clinician use of a palmtop drug reference guide. *J Am Med Inform Assoc.* 2002; 9(3):223-9.

[www.stacommunications.com](http://www.stacommunications.com)



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