

Drug Resources for Hand-held PDA

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This issue of the RxFiles takes us away from the typical assessment of drug therapy, and into the technical area of drug information for personal digital assistants (PDAs). PDAs offer a valuable, portable, updateable reference tool for physicians and other health care professionals. HOWEVER, to make the technology really work for you requires a little time and dedication early on. This RxFiles newsletter will attempt to provide basic information for beginner users and an opportunity to *compare notes* for intermediate/advanced users. In addition, our academic detailing sessions will offer our Saskatchewan colleagues an opportunity to check out, discuss and troubleshoot PDA drug resource issues one-on-one so that you can get up and running with the programs most likely to suit you.

Looking for a more detailed review?

- ♦ *Handheld Recommendations* from the Faculty of Medicine, Dalhousie University; PDA hardware and medical software. <http://handheld.medicine.dal.ca>
- ♦ *Health Sciences Resources for your PDA* from the University of Alberta Libraries website. <http://www.library.ualberta.ca/pdazone/health/index.cfm>
- ♦ PDA for rural Alberta physicians – U. of Calgary. <http://ruralnet.ab.ca/medinfo/handhelds/index.htm>
- ♦ PDA Links from our website, <http://www.rxfiles.ca>

Overview: Palm Drug Resource Applications

The PDA Drug Resources chart on pages 2 and 3 provides a summary of the most common PDA drug programs available. It includes potential advantages, disadvantages, frequency of updates, memory requirements and cost. Choosing the program that's right for you involves sorting through the following:

- What information will you most appreciate?
- How much are you willing to spend?
- Do you like more or less detail?
- How important is "ease of use"?
- Do you mind *Spyware*? (see glossary, page 4)
- Is inclusion of Canadian information important?

Try before you buy! Most programs offer you a free trial version of the software for a limited time.

Packages with Drug Information

PDAs are useful to check for drug dosage, effects, interactions, pregnancy/lactation, disease management and herb/natural product information. Products that package several databases together are often good value options. (See also chart - page 2)

Lexi-Complete

- gives you just about everything; 18 interactive medical handbooks & medical calculator (US\$ ≤285/yr or 570/3yr)
- is great if you like detail & take the time to setup/learn to navigate the databases
- requires lots of memory space (main or card) & money
- **Lexi-Comps Clinical Suite:** drug, interaction, lab, disease (US\$ ≤175/yr); add natural products for \$40 US
- **PEPID, Skyscape, Unbound Medicine** also comprehensive

Dr. Drugs Clinical Suite

- drug, interaction, natural product, disease information (US\$ ≤165/yr); more concise than Lexi; easier setup

PEPID-Primary Care Plus (or PEPID-ED: emergency)

- care pathways, disease info, pearls, natural products; DI multicheck only; EBM, easy to navigate (US\$ 140≤/yr)
- impressively well integrated; disease oriented

Tarascon Pharmacopoeia

- drug, interaction ^{Med Letter}, natural product and a useful drug options in pregnancy tool; lacks disease info
- concise, easy to navigate, low cost (US\$ ≤28/yr)

ePocrates Pro

- basic, limited & concise drug information; easy to setup & navigate; lacks Canadian drug information
- drug, interaction, natural product, infectious disease and clinical tables (US\$ 60/yr; with disease info for \$150/yr)

Free Programs

ePocrates

- Free, but spy on usage habits & some advertising; easy to download and use; lacks Canadian drug information
- drug interaction, DocAlert & MedMath information

Other Useful Free Medical Programs/Tools Include:

- MedCalc, MedRules, John Hopkins Infectious Diseases, Opioid Converter, RxFiles Comparative Drug Charts, ebm2go, Cancer Staging, Calculators: CV Risk, Strep, etc.
- Medical news: (www.AvantGo.com) Medscape Mobile

	Program	Web site (These links are active from the RxFiles web site)	Program Summary / Advantages & Disadvantages	Updates	Memory Space (MB) P=PalmOS; PC=Pocket PC (Main vs Card: see footnote)	Cost/yr US\$
GENERAL	Lexi-Drugs {Support Desk Phone 1-877-837-5394}	http://www.lexi.com	Most comprehensive & up-to-date drug info , 7000 USA & CDN names, Detailed large database (even off-label uses) but tabs make it quick to find info. {Note: may add Lexi companion databases for \$40 US; e.g. <i>Natural Products</i> }	Auto via Lexi-Connect	P <7.3 PC ✓ Main 0.1; Card remainder	75 / 1yr 150 / 3yr
	Lexi-Comps Clinical Suite	http://www.lexi.com	Lexi-Drugs Platinum + Griffith's 5MCC [†] + Lexi-Interact + Diagnostic Med {Note: many Lexi companion database can be added for \$40}	(Every few days)	P 15 PC ✓ Main 0.2; Card remainder	175 / 1yr 350 / 3yr
	Lexi-Complete {includes any/all 18 Lexi-databases that link to each other; comprehensive!!!}	http://www.lexi.com	Drugs Platinum CDN , Peds , Griffith's 5MCC , Natural Products >175, Infectious Dx , Poison/Tox , Diagnostic Med , Lexi-Interact DI, Companion, Drugs-Dentistry/Nursing , Med Abbreviations , Nuclear/Biological/Chem Agent Exposure , Pharmacogenomics , Pt Leaflets , Calc , Stedman's Med Dictionary ^{Concise}	(Every few days)	P ≤ 45 PC ✓ Main 0.2 + -1 buffer; Card holds databases PC ≤ 55MB	285 / 1yr 456 / 2yr 570 / 3yr
	DrDrugs	http://www.skyscape.com	Davis' Drug Guide for Physicians: 4000 USA & CDN names; (no monitoring info), >165 alternative/natural products , useful if limited PDA memory Recommended by Dalhousie for 1 st /2 nd year med students - <i>explains the basics</i>	Auto via smART Update (Every 3 months)	P 2.5 Main 0.4; Card 2.5 PC 6.7	50
	Clinical Suite	http://www.skyscape.com	DrDrugs with >165 natural + 5MCC + iFacts drug interactions; data-linked	Monthly	P 9.5 Card ✓ PC 19	165 / 1yr
	A2zDrugs	http://www.skyscape.com	3500 drug names, patient care information (lacks natural product info)	Monthly	P 4.1 Card ✓ PC 8.4	50
	ePocrates Rx 7.5	http://www2.epocrates.com	3300 drugs – very basic info, DI MultiCheck , (7 th best by Barrons ^{version 6.0}), Cholesterol Calculator, DocAlert messages; MedMath SPYWARE Lacks info on CDN drugs, kinetics, pharmacology, off label & monitoring	Auto	P 4.3 PC 3.4	Free
	ePocrates Rx Pro	http://www2.epocrates.com	3MB only; contains Epocrates (DI , MedMath, Cholesterol, DocAlert...) plus 400 natural products, 75 clinical tables, ID guide ; SPYWARE	Auto	P 4.8 PC 4	60 / 1yr, 100 / 2yr
	ePocrates Essentials	http://www2.epocrates.com	Suite : ePocrates Rx Pro (see above) + ePocrates Dx (by 5MCC) + ePocrates Lab + ePocrates MedTools SPYWARE	Auto	P 7.6 PC 6.1	150 / 1yr 245 / 2yr
	AHFS Drug Information	http://www.franklin.com	1000 drug monographs, lengthy discussion of info; comes on multimedia card {The more concise AHFS Drug Handbook is downloadable ~ 2.3MB; \$60}	Monthly	P PC 32 on multimedia card	100
	Mobile Micromedex	http://www.micromedex.com/products/mobilemicromedeX	Free for institutional subscribers to Micromedex. Contains: Acute care, >265 alternative/natural products, drug , DI (4 th best by Barrons) & toxicology info.	Auto Monthly	P 6.3 Main 0.7 + Card PC 8.4	75 (100 with DI tool)
	MosbyMDR	http://www.skyscape.com	850 generic & 2800 trade, patient education info Mosby Drug Consults, DI (3 rd best by Barrons)	Not regular	P 3 Main 0.75 + Card 2.5 PC 7	40
	PDR Drugs	http://www.skyscape.com	Based on Physicians Desk Reference (FDA approved information); lacks side effect frequency & monitoring info	Every 3 months	P 2.1 PC 5.6	50
	PEPID-Primary Care Plus (or PEPID-ED ^{Emerg})	http://www.pepid.com	3700 drugs; CDN ; DI-Multicheck only ; Calcs; disease info ; EBM , Pictures, 1700 clinical pathways ; >100 natural products; SI units: chemistry but not drug levels	Every 8 weeks	P 14 Main 3.5 + Card PC 20	140 / yr 230 / 2yr
RxFiles - for MobileDB Lite or HanDBase	http://www.rxfiles.ca	29 CDN Drug Comparison Charts (dose , CDN cost , forms, side effects, comparisons, herbal DIs ...), requires MobileDB Lite ^{FREE} or HanDBase ^{\$40}	Dec 2004	P 0.6 with MobileDB Lite 0.6 with HanDBase	Free	
Tarascon Pharmacopoeia	http://www.tarascon.com	Some CDN drugs-Peds & >60 natural products. Tools: drugs in pregnancy, dose calculator; DIs from Medical Letter-DrugIX ; less detailed; non-SI drug units.	Auto & ongoing	P 3.5 PC 5 Card 1.3 ✓ but requires 3.5 Buffer	28	
DRUG INTERACTION (DI)	Lexi-Interact	http://www.lexi.com {Lexi-Interact & Drugs Online free to CMA members http://www.cma.ca }	Competent & complete ⁴ ; May be added to, or included in Lexi packages. Rating scale: A,B,C,D,X (A=No known interaction; X=Avoid combination). Info: Title, Risk Rating, Summary, Interacting Members, Patient Management, Discussion & Footnotes	Auto & ongoing	P 1.9 Main 0.1; Card 1.8 PC 2.8	75
	iFacts	http://www.skyscape.com	Competent & complete ⁴ ; May be added to, or integrated in Skyscape packages Info: Precipitating Drugs, Effects, Mechanism, Management, Significance, Principal Drugs, Discussion, References	Auto q-3 months	P 3.2 Main 0.4 + Card 3.1 PC 6.2	70
	Medical Letter Handbook-Adverse Drug Interactions Palm	http://www.franklin.com	Ebookman format, a quick guide to possible adverse effects of drug interactions for over 3,000 drugs; does not perform multicheck	N/A	0.9	50
	DrugIX	http://www.skyscape.com	DIs from Medical Letter's The Handbook of Adverse Drug Interactions	q6 months	P 2.7 Card ✓ PC 4.5	50

•Also: DI program part of the package for the following: ePocrates, Mosby MDR, PEPID & Tarascon DrugIX (See above package descriptions)

\$US

Calculator	Archimedes http://www.skyscape.com	>70 formulas. In color. <u>Lacks</u> SI units, custom menu. Integrates with Skyscape.	-	P 0.7 PC	Free
	Med Calc 5.3 (new version July 2005) http://www.med-ia.ch/medcalc	82 formulas: Age, Anion gap, Apgar, BMI, CHD Risk, Corrected Ca ⁺⁺ , Phenytoin & Na ⁺ , CrCl, Dose, Glasgow Coma, Growth, IBW, Iron deficit, NNT, Pregnancy, Steroid equivalence, Units...; SI units for chemistry (e.g. CrCl) but not drug; Customize menu; Save patient data	Last update Apr 04	P 0.35 including 0.05 MathLib	Free
	MedMath 2.0 http://smi-web.stanford.edu/people/pcheng/medmath/index.html	34 formulas. Keypad on screen. May save patient data. Can select for SI units for both chemistry & drug levels.	-	P 0.05	Free
Clinical Evidence	CEBM: Center for Evidence Based Medicine (Mt. Sinai)-Handheld Resources http://www.cebm.utoronto.ca/	Evidence based tools: EBM Calculator – calculates relevant statistics for studies; EBM Tables including NNTs, likelihood ratios & sensitivity/specificity; funded by the Mount Sinai Hospital in Toronto; CDN	N/A	P ≥0.05 PC	Free
	ebm2go http://www.ebm2go.com	CDN ; guideline summaries, clinical trials, Ont/BC/Alt/Que/SK formularies , tools	N/A	P PC	Free
	MedRules 3.3 http://pbrain.hypermart.net/medrules.html	Clinical prediction rules : acute sinusitis, breast cancer risk (Gail), community acquired pneumonia score, strep pharyngitis Probability & Stroke Risk in A-fib...	N/A	P 0.35 includes 0.1 NSBRuntime	Free
	BMJ – CogniQ http://bmj.bmjournals.com/handhelds	Clinical Evidence Based Medicine: Trial or subscription to Clinical Evidence via CogniQ ; summaries of systematic reviews & abstracts from bmj.com. etc.	Ongoing	P Main 1.1 + Card (remainder)	\$60
	InfoRetriever http://www.info poems.com	Huge collection (~37 MB): InfoPOEMs , Cochrane Abstracts, Clinical Prediction Rules, EBM Guidelines, 5MCC, Pictures . (Drug database links to Lexi-Drugs)	Every 3 months	P Main 1; Card 37; PC	249
Clinical / Guidelines	Redi-Reference http://www.redi-reference.com	Clinical guidelines (American); FM Package includes: Redi-Reference Clinical Guidelines + Infectious Disease, Cardiology, & Obstetrics handbooks, 1 yr subscription biweekly Clinical Update (\$90 US/yr)	Ongoing	P Card 0.4 program + remainder	Varies
	5MCC http://www.skyscape.com http://www.lexi.com	Information on medical disorders/disease. Comprehensive & concise! Info by: Basics, Diagnosis, Treatment, Medications, Follow up, Miscellaneous	Not regular	P 4.3 Main 0.36 + Card 7.3 with images PC 9.5	65 – 75
	National Heart, Lung & Blood Institute– Clinical Medicine Consult	Asthma guide, BMI, ATP III Cholesterol...TealInfo Reader http://hin.nhlbi.nih.gov/palmapps.htm	Ongoing	P Card 0.8 + remainder	Variable
	Lexi-Natural Products http://www.lexi.com	>175 natural products from Lexi-Natural Therapeutics Pocket Guide (nutraceuticals, vitamins, minerals, glandulars, herbs & amino acids)	Regular	P Card 0.3 PC	75 (40 if added to Lexi-Drugs)
Herb/Natural Products	NaturalDB http://www.skyscape.com http://www.naturaldatabase.com	>1000 comprehensive natural product info on herbs, supplements, minerals & vitamins. \$60 if ordered with Natural Medicines Comprehensive Database web/book.	Not regular	P 5.4 PC 8.7	92
	RxFiles Herbal-Drug Interactions http://www.rxfiles.ca	>100 herbal-drug interactions & adverse effect information; herbs to avoid Pre-op requires Mobile DB Lite (free) or HandBase database program	When needed	P 0.15	Free
	The following drug databases and/or database packages also include information on herbal/natural products: DrDrugs, Epocrates Pro, Micromedex, PEPID & Tarascon				
Infectious Disease	ABX Guide (Johns Hopkins) http://www.hopkins-abxguide.org	Easy to use; online version available; <u>Lacks</u> pediatric information; SPYWARE ; limitations in Pocket PC compatibility; industry sponsored.	Auto	P 1.8 ?Card PC 4.9	Free
	Sanford Guide http://www.sanfordguide.com	<u>Comprehensive & reliable</u> ; includes pediatric information; somewhat hard to navigate; recommendations based on non-Canadian/non-rural resistance patterns	Annual	P 1.5 Card PC 3	25
	♦ID software part of packaged “suites” or add-on options for Lexi, ePocrates & Skyscape: 1) Lexi-ID (P 2.1MB; PC 2.5MB; \$75), 2) ePocrates ID (0.5MB), 3) 5mID (5 Minute-ID Consult: P 1.7MB, PC 2.5MB; \$90) ♦ SHOTS 2006 with high-resolution photos of common infections; recommended vaccination schedule for USA http://www.immunization.org/anypage.aspx?pagename=shotspalm				
Texts & Dictionaries	TEXTs http://www.franklin.com http://www.skyscape.com	Harrison's ^{\$60} , Merck Manual, Oxford Handbook Clin Med, Pocket PDR...; Applied Therapeutics, Drugs in Pregnancy & Lactation, Washington Manual(s)...	-	{e.g. Harrison's P 5; PC 11}	Varies (e.g 20-100)
	eMedicine.com http://www.emedicine.com	Medical specialty texts; Also emergency medicine: in-depth text format database	-	P 8	Varies
	PEPID-ED http://www.pepid.com	Emergency medicine: concise, point form, linked to PEPID drug & DI database	q-8 weeks	P 7 PC 10.5	140
	Stedman's Concise Medical Dictionary http://www.skyscape.com	Comprehensive (48,000 terms), more technical Full version (102,000 terms) also available but large (P 14.4 MB; PC 21.2 MB)	-	P 7.8 PC	35
	Taber's Cyclopedic Medical Dictionary http://www.skyscape.com	Comprehensive (55,000 terms), expensive; somewhat less technical & useful for allied health professionals	-	P 6.1 PC	50

UpToDate: current, 890MB, ~\$500, only for PC www.uptodate.com

† CMA (=Canadian Medical Association): ~10% discount on many products from the online CMA store. ✓ = available but lack additional information; † 5MCC= Griffith's 5 Minute Clinical Consult; **Auto**= information updated automatically with HotSync; **Buffer**= amount of free internal (Main) memory required for programs to function; **CDN**= Canadian content included; **DI**= drug interaction; **P**=Palm OS; **PC**=Pocket Personal Computer
Memory Space: Size of memory space required to load program. If possible to load to a memory card, size broken down to show internal (**Main**) and expansion card (**Card**) space requirements.

Beginner Basics – Tips to get you started.

How likely are you to carry a PDA on you?

- Those who carry the PDA (e.g. pocket or clip to belt) are most likely to make extensive use of it

Purchasing a PDA^{3,8,9}

- decide between Palm OS vs Pocket PC options
- remember that the life of a PDA is only around 2-3 years after which time you will likely want to upgrade
- ensure you have adequate built-in RAM memory; for Palm OS, **≥32MB** is the bare minimum
- ensure **expandability**; **memory cards** can be used to increase the memory & prolong the life of a PDA. {SD-Cards with 256MB- ≥2 GB memory ~ \$40-130}
- **color** and high resolution (≥320x320 pixel) is useful
- desired options: e.g. camera, phone, voice recorder...
- Usual Cost Range^{CDN}: **\$250-\$600**; See comparison chart: <http://www.rxfiles.ca/acrobat/Palm-comparisons.pdf>

Software (programs added after you buy the hardware)

- Most drug information programs offer free trial versions so you have a chance to try before you buy
- Discounts offered for packages and may be available for members of professional organizations (e.g. CMA)
- Getting a package of integrated software may be more efficient than several stand-alone programs (see page 1)
- If your memory space is limited, look for programs which install most of the program to a memory card

Using the PDA - The process at a glance

So now you have your PDA. It is going to take you a bit of time to get it working for you. Time spent now, should help save you time down the road.

1. **Install Palm software** from CD, plug in hardware and follow basic setup instructions in the manual
2. **Download desired programs from the internet to your computer** following specific program instructions
 - ♦ some files may require “unzipping” or double-clicking the program on desktop or in program file
 - ♦ if you wish to install to a memory card, open the palm desktop and click on the “install” tool; some program files may then be moved from main to card
3. **Transfer programs to your PDA** by pressing the cradle HotSync button; depending on the program, this may or may not be straightforward; most software vendors provide support online or by phone
4. Find and tap program icon on the screen of your PDA
5. You are now ready to explore and use the program ☺

Glossary of Some Common PDA Terms

Beam: wireless transfer of data from one PDA to another
Clones: Non-Palm [®] brands of PDAs that run on the Palm OS (e.g. Sony Clie, Sony PEG, Handspring); often less expensive
Cradle: holds PDA during HotSyncing & recharging
Graffiti: PDA feature that allows you to “type as you write”
HotSync (Synchronization): the transferring of information between PDA & computer; allows for data back-up & updating
MB: megabytes; a measure of data storage size
Memory Card: external card that can be inserted into PDA to increase memory capacity. {Typically 256 MB - 2 GB; \$40-130}
Palm Handheld / Palm OS: PDAs that utilize the operating software developed by Palm (distinct from Pocket PCs)
PDA: personal digital assistant (hand-held)
pdb: program data base file (often can be installed to card)
Peripherals: optional add-ons - modem, keyboard, MP3 player, digital camera, Presenter-to-go; voice recorder , etc.
Pocket PC: PDA utilizing a Windows based operating system
prc: program operating file (often installed to main PDA RAM)
RAM: random access memory (working memory) which is built into the PDA; it is essential to have adequate RAM for routine function and for storing installed programs.
ROM: read only memory; stores the operating system
SD: secure digital (e.g. SD cards such as SanDisk [®] , Lexar [®])
Spyware: programs that return information on user usage
Stylus: the little pen-like pointer used to tap/write on the screen
Unzip: “.ZIP” files cannot be used til decompressed by a tool like WinZip. For more information from see http://www.winzip.com
Wifi: wireless connection to local area networks e.g. internet

See also chart: <http://www.rxfiles.ca/acrobat/Palm-comparisons.pdf>

A Few RxFiles PDA Pearls

- ♦ If you have an **older PDA &/or are low on internal memory**, Lexi-Complete will install up to 40MB on a SD-card, requiring only 0.3MB of internal memory & >1MB internal free space for buffer.
- ♦ Some programs do not download to a card, or may require a lot of free internal memory to function (noted on our chart where possible)
- ♦ Some **downloading problems** can be overcome by HotSyncing 2 or more times or reinstalling the program.
- ♦ If a card will not accept a program due to “**read only**”, try removing and reinserting the card.
- ♦ Create a “**Medical**” program file using “Edit Categories”
- ♦ **Version 5.3** of the “**MedCalc**” is now available^{Mar 06}.
- ♦ Set up a **Custom MedCalc** list of your favorite formulas
- ♦ Set calculator program preferences for **SI units**. eg. CrCl; cardiac risk (<http://www.statcoder.com>), corrected phenytoin levels, etc.
- ♦ **Physician Program Picks:** CV Risk Calculator, Pregwheel, Opioid Converter & Strep Throat Predictor
- ♦ **Customize PDA buttons/stylus links to favorite programs**
- ♦ Consider attending a **PDA CME Workshop** in your area

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¹ Adatia F, Bedard PL. "Palm reading": 2. Handheld software for physicians. CMAJ. 2003 Mar 18;168(6):727-34.

² Keplar KE, Urbanski CJ. PDA applications for the healthcare provider. Ann Pharmacother. 2003 Feb;37(2):287-96. Updated 2005 May.

³ Recommendation for Handheld Hardware and Software. Dalhousie University Faculty of Medicine. Spring 2004. <http://handheld.medicine.dal.ca>. Access verified April 28, 2004.

⁴ Barrons R. Evaluation of personal digital assistant software for drug interactions. Am J Health Syst Pharm. 2004 Feb 15;61(4):380-5.

⁵ Miller SM, Beattie MM, Butt AA. Personal digital assistant infectious diseases applications for health care professionals. Clin Infect Dis. 2003 Apr 15;36(8):1018-29. Epub 2003 Apr 07.

⁶ Lewis M. Evidence-Based-Medicine Tools for Your Palm-Top Computer. American Academy of Family Physicians. <http://www.aafp.org/fpm/20030500/73evid.html>. Access verified April 23, 2004.

⁷ Balan RM. Information. Pharmacy Practice 2003;19:49-53.

⁸ Wilderman I, Dobrousin A, Cameron S. Which hand-held computer is better for doctors? Part 1: Comparing models with Palm OS. Can Fam Physician. 2003 Nov;49:1507-8, 1510-1. Also see <http://www.freewebs.com/webhelpdoctors>

⁹ American Academy of Family Physicians: Personal Digital Assistants and wireless technology. Access verified April 29, 2004. <http://www.aafp.org/x433.xml>