

Software Reviews

POCKET DOC, version 1.1 (1995). Physix Incorporated, 1720 Dryden, Suite 205, Houston, TX, 77030. 1-713-797-1199. \$449.00 (stand-alone version), volume discounts available.

DOCUMENTATION: 44-page booklet with illustrations and an instructional video.

HOW SUPPLIED: 1 Macintosh or PC diskette.

HARDWARE REQUIREMENTS: Newton MessagePad 110 or 120 (Apple Computer, Cupertino, Calif) or Marco (Motorola Corporation, Schaumburg, Ill) hand-held computer. A Macintosh or windows-compatible computer is needed to install the software.

MOUSE SUPPORT: No. Newton is a pen-based computer.

TOLL-FREE CUSTOMER SUPPORT: No toll-free number, but free support available via e-mail (pocketdoc@physix.com) or the World Wide Web (<http://med.amsa.bu.edu/newton.medical/PocketDoc/pocketdoc.html>).

MONEY-BACK GUARANTEE: None noted.

Pocket Doc is the first commercially available medical record software for the Newton MessagePad (Apple Computer, Cupertino, Calif) series of hand-held, pen-based computers. (A Technology Review in this issue of *The Journal* discusses the Newton and other hand-held computers in more detail.) Written by a physician, *Pocket Doc* is a very ambitious and well-thought-out program that enables physicians to document history and physical exams, progress notes, and discharge summaries at the bedside. Notes, check-out lists, referral letters, and billing lists can be printed, transferred to a desktop computer, or "beamed" by way of the built-in infrared connection to another Newton. *Pocket Doc* also supports a detailed formulary, extensive ICD-9 and CPT codes, and links to other medical products for the Newton. *Pocket Doc* is available in both stand-alone and network versions; the latter is able to take advantage of a variety of wireless network connections. Physicians are the intended user.

To install the software, the user must copy it to a Macintosh or PC-compatible computer, then transfer it to the Newton using a serial cable connection. The process is straightforward and works reliably.

Three files are copied to the Newton: the program, an installation file, and a file for automatically synchronizing data with your desktop computer. After running the installation file, it can be safely deleted.

The software is very easy to use. As with all Newton software, the user navigates the program by touching the computer's screen with a special pen. Tabs at the bottom of the screen resemble those of a traditional paper medical record; the authors of the program have done a good job of maintaining familiar paradigms while extending their functionality using the computer. Touching a tab takes the user to one of three areas: "Pt list," "Profile," "Codes," "Rx," and "Chart." Pt list enables a search for patients by hospital and status (inpatient, outpatient, and/or discharged). Profile, an overview of a specific patient's medical record, functions as an electronic notecard. It is especially useful when rounding or presenting information to another physician. Codes enables the user to search for ICD-9 and CPT codes, and add them to a billing list if desired. This is an important potential advantage of *Pocket Doc*, because it may make possible more complete and accurate billing. Rx displays a list of the patient's medications, including the dose and the number of days it has been given. Prescriptions can be edited and printed from this screen as well. Finally, Chart, the most comprehensive part of the program, contains the history physicals and progress notes.

The program makes excellent use of pop-up lists and other techniques that minimize the use of handwriting recognition, which is necessary only for names and for diagnoses and medications not included in the built-in lists. For example, if a patient has chest pain, you would pick the chest pain clinical template. Then, in the HPI section, you could choose from a list of attributes including "onset," "location," "radiation," "intensity," and so on. This list varies depending on the patient's chief complaint. Choosing onset causes a second list to pop-up, which contains the options "sudden," "gradual," "over minutes," "over hours," "unknown," and "other." You can choose more than one of these options, for example sudden and over minutes. The program then generates the following sentence fragment, which is inserted in the HPI: "The patient reports the onset was

sudden and over minutes" The process is quite rapid, and very complete HPI can be entered in approximately the same time that it would take to do so by hand. Progress notes use a SOAP format, and save time by using data from the previous note to fill in the current note, which can then be edited by the user.

Perhaps the greatest strength of *Pocket Doc* resides in the clinical templates. These can be completely customized for a physician's practice, and the company is encouraging physicians to exchange templates using their site on the Internet. Care plans for common problems are also included, making it quick and easy to write a comprehensive assessment and plan for a patient's problems. These care plans can also be customized by users on Macintosh or PC-compatible computers and exchanged with other physicians.

The major limitation of *Pocket Doc* is the speed of the software and the quality of the Newton's built-in handwriting recognition. It takes about 10 to 15 seconds to load the software, and 3 to 6 seconds to change between screens. While this sounds fast, it can seem quite lengthy while talking to a patient. A new operating system for the Newton and faster processors, which should be available later this year, may solve this problem. Handwriting recognition can be improved significantly by adding Graffiti (Palm Computing, Los Altos, Calif; \$59), a software add-on that makes rapid and almost perfect recognition possible. The program has several misspellings and several minor inconsistencies: among other, it is possible to enter an obstetrical history for a male patient, smoking pack-year choices are too low (1 to 6 or other), and there is no "sublingual" as a route of drug administration. These problems, however, are minor and do not detract significantly.

If physicians are to accept the cost, learning curve, and occasional headaches and limitations of any electronic system, the electronic record must provide benefits not available from a paper record. For *Pocket Doc*, these benefits are significant and include more accurate drug prescribing, more complete and accurate billing, and the ability to easily share information with other physicians and to print reports and letters without duplication of effort. In summary, *Pocket Doc* provides a comprehensive solution for physicians who would like to experience the advantages

of an electronic medical record. It is most useful in the inpatient setting, although the wireless version has the potential to extend this functionality to the outpatient setting.

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SMARTDOCS BASIC, VERSION 1.2 (12/94). Berdy Medical Systems, Inc, Mack Centre I, 365 West Passaic Street, Rochelle Park, NJ 07662-3012. (201) 843-3366. \$270.00 software only; \$595.00 for software and a Psion Model 3a Personal Digital Assistant.

DOCUMENTATION: 17-page *SmartDocs* users' guide, 260-page Psion 3a users' guide, and a 242-page Psion 3a programming manual (the latter two with hardware purchase).

HOW SUPPLIED: Preloaded or on Psion disk.

HARDWARE REQUIREMENTS: Psion Model 3a handheld computer.

TOLL-FREE CUSTOMER SUPPORT: Yes. 1-800-662-3739.

MONEY-BACK GUARANTEE: Yes; 15 days for a limited time.

SmartDocs is a hospital patient tracking program for the Psion 3a hand-held computer. This program keeps a patient roster that can be sorted by name, location, admission date, or whether the patient is active or inactive. Demographic and insurance information can be attached to each patient, as well as CPT codes and their associated ICD-9 diagnoses. According to the distributor, "*SmartDocs* replaces the error-prone traditional methods of recording patient information on index cards or notepads during hospital rounds for later transcription." The intended user is the physician.

I tested the Psion 3a and the *SmartDocs* software for 2 weeks while taking my turn on hospital rounds. I usually enter each of my stints on rounds vowing to be more organized so as to keep my billing

sheets up to date. Many times things get so hectic that I forget levels of care, discharge dates, and the like, and end up pulling a lot of medical records. I was keenly interested in the possible benefits of a palm-top computer.

The Psion 3a weighs only 11 ounces and is one of a generation of more powerful yet smaller Personal Digital Assistants (PDAs). I do not wear a white coat in hospital, but the PDA fit nicely into my hip pocket and did not rip my trousers when I sat down. The unit can be held and operated easily while standing or walking but also sits firmly on a counter or desktop without sliding. The keyboard has a sturdy feel to it. It suited my so-called typing, but those who can touch type will be frustrated by Psion's small size. The display screen was easy to see and had an adjustable contrast control. For more information about the Psion 3a and other hand-held computers, see the Technology Review in this issue of *The Journal*.

SmartDocs is generally easy to use. I pride myself in rarely reading any documentation that comes with software or hardware. After briefly toying with the unit and experimenting with various keys, I was able to successfully use all of the features of the *SmartDocs* program. Entering the names, admission dates, and room numbers of patients was the first and quickest step. If mistakes were made or if changes were necessary, entries could be edited quite simply. After a patient roster is generated, the list can be sorted. This allows you the user to keep discharged patients at the end of the list.

Unfortunately, editing ICD-9 and CPT codes was not as easy. ICD-9 codes cannot be removed without erasing the patient completely and starting over. After the day's CPT code is entered, the date and diagnoses can be edited but the code itself cannot; the CPT entry must be completely erased and a new code reentered. In addition, the search engine for the ICD-9 codes is limited and can be

frustrating. Multiple attempts to find certain diagnoses may be necessary. The distributor indicates that this is because the CPT nomenclature licensed from the American Medical Association does not correspond with many physician's descriptive diagnoses. This makes it difficult for the "Basic" *SmartDocs* package to easily enter some of the conditions that family physicians treat. I tried every which way to find "acetaminophen overdose" only to be given a "no record found" message over and over. In frustration, I pressed the Select key anyway, causing the diagnosis of "typhoid fever," (the first ICD-9 code listed) to be entered into the patient's problem list. By accident, I found that I had to press the escape key twice in order to get back to the roster without adding "typhoid fever" if the search turned up nothing.

The hardware slows to a maddening degree after data accumulate. After 6 days and 24 admissions, it took 30 seconds to carry out each CPT update. On the advice of the distributor, I closed all other applications on the Psion 3a. Unfortunately, this did not appreciably improve performance. I noted a couple of other quirks. I encountered an "out of memory error" that disappeared after turning off the unit. The distributor explained that this was because too many applications were open at once. I also encountered the error message "/add% read only file;" again, turning off the machine seemed to remedy the situation without any loss of data.

In summary, the software and its system bogged down during situations in which a family physician would need it the most, ie, with large patient volumes. With some software modifications, such as a search engine more tolerant of spelling errors and faster hardware, these systems hold promise as a replacement for financial sheets and a billing card.

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