

BOOK REVIEWS

STORING A BIBLIOGRAPHIC DATA BASE ON YOUR PC: A REVIEW OF REFERENCE-MANAGEMENT SOFTWARE

Searching the MEDLINE data base (by means of CD-ROM, on-line services, or a diskette service) is considered routine in most academically oriented clinical and research work. Whatever the search strategy, much garbage accumulates, and the results must be carefully scrutinized. Furthermore, while browsing through references, one may occasionally wish to delete a reference, add additional key words, or attach a footnote. Even if MEDLINE files are kept neatly in subdirectories, no efficient way exists to view and retrieve specific articles of interest. Editing, deleting, and pasting the down-loaded files may indeed be accomplished, but with immense effort, necessitating obsessive-compulsive personality traits. It is at this point that software for managing a personal bibliographic data base can be of great assistance. Apart from storing references, bibliographic software makes it possible to format citations to suit particular styles requested by various biomedical journals.

There are more than 20 commercial programs for creating bibliographic data bases on the market. In this review, we

shall look only at software for use on DOS-operated personal computers. There are also software packages for use on Macintosh, VAX/VMS, UNIX, and other operating systems. The packages reviewed here are DMS4Cite (Sidereal Technologies, Westwood, N.J.), Notebook II (PRO/TEM Software, Palo Alto, Calif.), Papyrus (Research Software Design, Portland, Oreg.), Reference Manager (Research Information Systems, Carlsbad, Calif.), and Refsys Super (Biosoft, Ferguson, Mo.).

All these packages were capable of performing the following tasks: importing MEDLINE files down-loaded from CD-ROM or on-line data bases into the personal bibliographic data base; entering references (such as books and chapters) from the keyboard; editing and deleting references within the personal data base; attaching comments, notes, and additional key words to the references; conducting searches in various fields, using different approaches — logic, the use of strings (free text), and so on; and grouping citations to construct bibliographies to be appended to manuscripts or used for teaching purposes.

For the construction of bibliographies, citation codes are entered into the manuscript, either manually or automatically. Each code represents a particular citation from the data base. The program then automatically replaces the codes with consecutive numbering (or author-year refer-

Table 1. Features of the Five Software Packages Reviewed.

FEATURE	DMS4CITE	NOTEBOOK II	PAPYRUS	REFERENCE MANAGER	REFSYS SUPER
General information					
Version	5.30	4.0	7.0*	5.03	2.3
Price (including optional modules)†	\$295	\$330	\$99	\$499	\$249
Minimal recommended RAM	318K	512K	470K	384K	384K
User-friendliness‡	3	3	4	5	2
On-line help	Yes	Yes	Yes‡	Yes	No
Pull-down menus	No	No	Yes	Yes	No
Entering data and editing from keyboard					
Alphabetical list of authors, journals, and key words available through a pop-up window‡§	No	No	Yes	Yes	No
No. of predefined data-entry templates	4	0	8	6	2
User-definable data-entry templates	No	Yes	No¶	No	No
Duplicate-record detection on input	Partial **	No**	Yes	Yes	Yes
Importing from commercial data bases					
No. of predefined import MEDLINE formats†	5	3	12††	20	1
No. of predefined commercial-data-base formats (excluding MEDLINE formats)	2	1	37††	71	2
User-definable import formats†	No	Yes	Yes	No	Yes
Output					
TSR for implanting references in manuscript‡‡	No	No	Yes	Yes	No
Output in word-processor format	Yes	Partial	Yes	Yes	No
No. of word processors supported	2+13§§	6	11	13	0
No. of journal bibliographic styles supported†	23	—¶¶	36††	100+***	0

*A beta version was reviewed.

†A particularly important feature. User-friendliness is rated on a scale from 1 (low) to 5 (high).

‡Only single-line help.

§This feature is important for fast data entry and searching and to minimize duplication and spelling errors.

¶Three user-definable fields within predefined templates.

||By accession number only.

**A manual routine exists for marking and deleting duplicates.

††These figures apply to version 6.09; no information is available as yet for version 7.0.

‡‡A module allowing the viewing and retrieving of references from the user's data base while word processing the text. TSR denotes terminate and stay resident.

§§Through a separate module ("Perfect Exchange").

¶¶Journal formats are available through nbCitation (by Oberon Resources, Columbus, Ohio); this module is included in the price listed above.

||Only biomedical journal styles were counted; additional journal styles are available.

***Although 147 journals are listed in the format module, 31 journals conform with the Uniform Requirements (Vancouver) style format, so the number of distinct formats is actually much smaller.

ences) within brackets. References are automatically formatted according to the requested journal style and sorted either in the order they appear in the manuscript or in alphabetical order. This reference file is written in either the ASCII format or in a word-processor format (most packages support the common word processors).

All the programs we reviewed lacked a spell-check function, which would be of help when manually entering references and notes.

The five packages have much in common. Which of them to purchase should depend, in our opinion, on price, user-friendliness, and other features listed in Table 1. We found two of the packages — Papyrus and Reference Manager — most suitable for the task of dealing with down-loaded MEDLINE references. If the data base is intended for use by a large group of people, nonstandard features may become useful. The ability to import from a wide selection of commercial data-base vendors, installation on a network, and use of non-English characters may make the programs more attractive for use by departments.

The right way to choose the product that best suits one's needs is by trying out the demonstration versions of the software. Demonstration versions permit the full appreciation of the product, but they restrict data bases to no more than a few dozen entries. They cost a fraction of the price of the actual software (usually about \$20 to \$30). We believe that every medical library should purchase and provide access to demonstration versions of several programs, installed on one of the library computers. Medical schools should consider purchasing site licenses to encourage awareness of the literature on the part of their students.

EYTAN Z. BLUMENTHAL, M.D.
RAZ GILAD, B.A.

Jerusalem, Israel

Hebrew University

UPToDATE IN NEPHROLOGY AND HYPERTENSION

Edited by Burton D. Rose; system designed by Joseph Rush. Eight diskettes with manual, 44 pp. System needed: Apple Macintosh with minimum 14 MB free hard-disk space. Wellesley, Mass., Carol Peckham, 1992. \$495 (individual); \$250 (partner); \$135 (fellow); \$1550 (institution).

Keeping current with new information and changing practices is a constant challenge in any subspecialty. Fortunately, UpToDate makes this task a lot easier in the field of nephrology.

UpToDate is a HyperCard application that covers all the major areas of the field, including clinical nephrology, mineral metabolism, drug interactions and dosing, hypertension, dialysis, and renal transplantation. The program is more than a computerized textbook; it is extensively cross-indexed, allows searches by key word as well as subject, and has other useful functions. For instance, the program includes a helpful calculator function that prompts the user for the relevant data to determine such indexes as creatinine clearance, transtubular potassium gradient, and time-average concentration of urea for peritoneal dialysis. UpToDate also features a good selection of charts and tables, as well as light, immunofluorescent, and electron micrographs.

As an example of what you can do with this program, you might choose the search function and enter "hyperkalemia." The program presents you with a list of 28 relevant phrases, such as "causes of hyperkalemia," "potassium balance in acid-base disorders," and "NSAID: electrolyte complica-

tions." If you select "causes of hyperkalemia," a screen of text appears that presents an orderly, brief discussion of potassium balance followed by a description of the major causes of hyperkalemia. You can refine your search by selecting from a list of modifier terms supplied by the program, such as "treatment" or "etiology." Embedded in the text descriptions are underlined phrases, such as "show table," "show graph," or in other sections "show histology," which you can select to see additional material. Also included at various points is the underlined phrase "see card," followed by a description such as "potassium balance in uncontrolled diabetes mellitus." Choosing this phrase allows you to flip to a more detailed discussion of this topic.

Another noteworthy feature of the program is that you can print the card you are viewing; this can be useful in consultations, by supplying the referring physician with a brief explanation of the pathophysiologic features of the case and some recent journal references. Finally, the program is updated quarterly. The cost of such a comprehensive system is that it requires a fairly large chunk of space on a hard disk (15 megabytes if the pictures are included and 10 megabytes without them), and there is a pause as you flip from card to card. However, the many efficient features and other advantages of UpToDate more than compensate for these minor inconveniences.

UpToDate is a welcome improvement over paperbound textbooks. It facilitates searches and allows selective reading without the constant need to flip to the index to see where to go next. Its information and functions can be useful learning tools for residents and fellows and can also help guide patient care by providing a quick reference to the current therapeutic interventions for specific problems.

Philadelphia, PA 19104

THEODORE DANOFF, M.D., PH.D.
University of Pennsylvania

HYPOKINESIA AND WEIGHTLESSNESS: CLINICAL AND PHYSIOLOGIC ASPECTS

By Oleg Y. Atkov and Victor S. Bednenko. 560 pp. Madison, Conn., International Universities Press, 1992. \$60. ISBN 0-8236-2415-3.

In recent years there has been a trickle of books and a number of general medical articles dealing with the medical problems encountered by humans during space flight. A recent example is *Space Physiology and Medicine* (edited by A.E. Nicogossian, C.L. Huntoon, and S.L. Pool. Philadelphia: Lea and Febiger, 1989), which made a clear statement about American research (with some data from Canada, the European Space Agency, other Western space laboratories, and the Soviet Union) that defined an area of biomedical science: changes in human structure and function associated with space flight.

Now comes a book from the other side of the former iron curtain. It is by two Russian scientists and deals with anatomical and functional changes due to weightlessness. The authors do not discuss some of the other aspects of space flight reviewed in the American book. However, Arnauld E. Nicogossian, one of the editors of that book, wrote the foreword to this one. For many years director of the Life Sciences Division of the Office of Space Science and Applications at the National Aeronautics and Space Administration (NASA), Nicogossian has always fostered close contact with Russian scientists, has mastery of the language, and has frequently visited Russia and sponsored Soviet visits here.