Computers in Family Practice

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The Computer for Practice Management: Part 2. Software, Hardware, and Aftermarket Services

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In the preceding issue, Dr. Cushing introduced the importance of system goals and design, hardware, elements of the system, and software elements. In Part 2, Dr. Cushing covers how to search for the right software, how to fit the hardware to the software, and aftermarket services.—Roger A. Rosenblatt, Editor

How to Find the Right Software

Finding the right software dealer may be the hardest part of the whole process. Advertising is of little use, other than to make buyers aware of the existence of an outlet and what brands of hardware it handles. Most dealers advertise machines, not software, and untrained and naive buyers respond to this merchandising approach. First, test the knowledgeability of the salesperson. Does he know accounting, and can he direct you to more than one package, especially in the medical field? Second, is it possible to get the names of the primary care people with whom he has dealt? Generally speaking, the broader the range of hardware brands offered, the wider the choice of software available. One-brand stores have a limited selection and probably should not be consulted initially. It is also wise to avoid mail-order products entirely. These products are less expensive, but the headache factor in trying to deal with problems and questions at long distance more than compensates for any savings. Delays of three to five months are not unknown in response to letters of inquiry to major and reputable hardware and software manufacturers. Avoid also the "supermarket" stores, which thrive on volume and quick turnover and are not equipped, either in personnel or attitude, for hand-holding.

The following are five rules to follow when deciding which software to purchase:

Rule 1: Never buy any software until all the requirements for the system design have been identified and listed, including number of users, number of terminals, backup requirements, and so on.

Rule 2: If a fully designed software package is being considered, take home the manual of instructions (documentation) and read it through, then give it to the bookkeeper to read. If anyone

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has trouble understanding it, return it and try another package.

Rule 3: If the manual is understandable, have the salesman run the program on his machine. Be sure to allow at least 90 minutes for this. Go through dummy data entries several times. Make frequent deliberate mistakes, especially hitting the wrong keys (like "ctrl" instead of "return," and "esc" and "break" instead of alphabetic-numeric keys) to see whether the program can be made to crash. If it can crash accidentally, do not buy it. If the program does not crash, then be sure that it is possible to change fees, procedure codes, and diagnosis codes during data entry, that lists of these codes can be called up on the screen without having to look them up in a book, and that data entry mistakes can be corrected, even after the "return" key has been pressed. Also ensure that all lists can be displayed on the screen as well as on a printout. Inability to print all lists and tables on the screen is a common problem. Finally, any "error" messages must be easily understood—no "error PC at line 1256" nonsense.

Rule 4: Determine what operating system (the software that interfaces the program with the hardware) the package under consideration uses. It should be a common one so that it will be possible to obtain the names of at least five users of that package from the dealer. The following are some common operating systems: CP/M, MP/M, MS-DOS, PC/DOS, APPLEDOS, TRSDOS, NEWDOS, LDOS, UNIX, TURBODOS, DOSPLUS, and RT11.

Rule 5: After the right software package has been found to fit the needs of the practice, get the names of at least five users of that package from the dealer. Call the users to determine whether all are satisfied with the product and its support. Make sure they have been putting it to practical use for a minimum of several months. List their complaints, if any (there should be complaints with every product), and return to the dealer with these comments to see (1) whether the author of the program is aware of the problems, and (2) if so, whether he is writing an update or "fix" for them. If the author is not aware of them, be sure he is made so.

If the footwork thus far seems too much, it is possible to pay a consultant to find and install a system. Most are reasonably proficient in computers, but can be ignorant of the realities of running a medical office. Before engaging a consultant, determine how much knowledge and experience he or she has had in running medical practice systems, and, of course, check references. A few questions to test the consultant are (1) does the system handle piggyback payments to third parties, (2) how does it deal with coordination of benefits, and (3) can it tell the difference between concomitant and concurrent care?

If the consultant cannot respond intelligently to two or three of these questions, find another consultant. If a consultant will not be used, be prepared to spend the equivalent of an eight-hour day, excluding travel time, in making a decision.

Be particularly wary of the company that will sell an integrated package but does not know or will not say who made the hardware, what language and operating system are used, whether the dealer has access to the source code (the original, English-like instructions to the machine) for the purpose of custom modifications, or whether the machine and code are modular.

Remember, also, that vendor lifetimes in the computer business are distressingly brief. An obscure company may turn into another IBM, but there is a significant risk of its never being heard from again, which would leave the buyer with a dead-end system.

Now, a word about word processors. A word processor is a program that accepts typed text input and allows manipulation of the text in an area of memory (RAM) before it is stored on nonvolatile memory (disks) or printed. This manipulation consists of additions, deletions, and transposition of letters, words, phrases, and paragraphs until the author is satisfied with the construction of the text. Most programs are very versatile, allowing changing of the margins and page format (how the printed text appears), automatic headings and page numbering, searching and changing similar text throughout a document, and many other features. Such programs can make typing a report a pleasure. Further, some programs will allow insertion of variables from other files to create form letters (MailMerge, for example).

If the only text typing done in the office is three-line progress notes and an occasional letter, it is not necessary to have a word processor. If a secretary does all the typing, is a confirmed computerphobe, and likes her IBM Selectric, a word processor is not necessary. If most of what is sent

out is "boilerplate" (repetitive paragraphs, such as x-ray reports) that needs at most minor revision for the case at hand, if a large amount of original writing is done in the practice, and if the computer will be used to print out order sheets for the hospital or instruction sheets for patients, a word processor would be indicated.

The best known leading word processor program, WordStar, is relatively complete and unusually versatile. WordStar uses menus printed at the top of each page to remind the operator of the commands available, it is rather complex, and the commands are hard to remember because they are two to three letters long and are not necessarily mnemonic (for example, "ctrl" plus "d" is the command for "move cursor right one character"). Other programs combine versatility with commands that are easier to understand. If a word processor is being considered, first be sure it will run on the operating system chosen, then sit down and try it out.

How to Find the Hardware to Fit

The selection of software and an operating system limits the buyer to a fairly small number of computers. For example, if the software runs under LDOS, it must be run on a Radio Shack, an LNW, or a similar computer. If the software runs under PC/DOS, the buyer is limited to IBM and IBM-compatible machines. Within the area of choice, choose hardware based upon the following criteria:

Rule 1: A machine that is modular (has plug-in circuit boards) is preferable to one that is not (is "hard-wired").

Rule 2: Never buy a machine that must be repaired at a facility more than one hour away. Be sure that the service facility will guarantee a reasonable turnaround time. (Machines can be in the repair shop for months.) If they have loaners, so much the better.

Rule 3: A contract for service after the warranty expires will get faster and more dependable service. Typical costs are 15 percent of the purchase price per year. The contract should specify turnaround time on repairs (ie, two business days at the most).

After satisfying those rules and fitting the hardware to the software and operating system, look at the added features on the hardware, the thing that neophytes look at first. Good fringe benefits would be several user-programmable function keys (special keys that can be taught to mean special commands to save time), separate keypad for quick number entry, nonglare and tiltable screen, keys with positive-action click (sometimes audible) and comfortable feel to the fingers, and "arrow keys" to move the cursor (the flashing line or dot that tells you where you are typing on the screen) around the screen for data entry (some machines have gimmicks, such as a "mouse," which is a little box on wheels that you roll around on the table, controlling the cursor). At the least the keyboard should allow upper and lower case, all the punctuation marks, including bracket, brace, backslash, carat, tilde, underline, a key labeled "ctrl," one labeled "esc," and all the digits.

Aftermarket Services

A salesman is easy to find when he wants to sell his equipment and is hard to find when a problem surfaces after the sale is closed. If there is a "glitch," an incomprehensible instruction, a confusing error message, or an unpredictable result during data entry or retrieval, it is essential to have someone committed to good follow-up service. The liaison person must be reliable. To determine whether this person is honorable and will remain available, ask for references from clients to whom the salesman sold equipment more than six months ago. Does the salesman return calls promptly? If he cannot answer a question, does he get the answer, or refer you to the library? Will he refer the buyer to experts if the machine has a problem he cannot solve? Will he promptly and cheerfully replace defective parts and software?

The salesman should make arrangements for training the office staff, either in person or by audiovisual aids. Ensure that this service is included in the purchase agreement.

In summary, a computer is a marvelous technical advance and can be great fun to use, as well as useful and time-saving, but there are many pitfalls to avoid in buying one. The above comments should help any buyer in making the right choices.