Sleuthing With Data Base Systems

By Simson Garfinkel

BOSTON—A colleague brings his grandson into your office. The boy has been complaining of a numb chin for weeks, and the boy's dentist reports that the child's lower incisors are loosening. But after examining the patient and reviewing his medical history, you are unable to find anything wrong. What do you do?

This was the problem facing Dr. William M. McClatchey, an internist. While the boy and his mother waited, the doctor sat at his office computer and dialed into a system containing a copy of "Medline," a data base of abstracts of recent medical journal articles. He asked Medline for any references to "numb chin." He received one response: A report of 19 patients complaining of numb chins, nine of whom were later found to have lymphoreticular malignancies.

On McClatchey's recommendation, the boy was hospitalized, and that afternoon a CAT scan revealed he had cancer. The growth was confirmed 24 hours later by exploratory surgery, and chemotherapy was begun the next day.

"I doubt that this diagnosis could have been made in a timely fashion without the use of the computer to access the literature," McClatchey wrote in "Healthcare Online," published by Medical Data Exchange in Los Altos, Calif.

Dial-up Data Bases

Although the use of bibliographic data bases has long been established in medicine for research and training, more and more physicians are finding uses for the systems in the clinical setting. Physicians who want access to state-of-the-art information on cancer treatment, including how to get their patients into ongoing studies, can use a system produced by the National Library of Medicine called "Physician's Data Query." Besides providing information on cancer treatment, dial-up data bases provide information on AIDS, drug interactions, and even diagnostic

"expert systems."

A commonly used system is Medline, which is abstracted, indexed, and distributed by the National Library of Medicine (NLM). Physicians can either call the NLM's computer directly, or Medline can be searched through third-party "data

base vendors" who often provide easier-to-use programs and additional services, albeit at a higher price. Nearly 3,000 physicians in the New York metropolitan area subscribe to Medline through BRS Information Technologies, according to Bernadette M. O'Grady, a BRS representative. In addition to abstracts, BRS allows physicians to print the full text of articles found in searches.

Dr. Robert Hogan, who writes a column on computers for the "Journal of the American Medical Association," said that BRS and similar data base vendor services are ideal for "somebody who is in a place where, occasionally, they really need a significant body of information, but don't have access to a library."

Medline can be used to find articles that physicians have forgotten, said Hogan. "There are several ways that I use these services. For example, I'm trying to locate a paper that I remember reading. I think I saw it in the 'New England Journal of Medicine' about six years ago. The typical physician who isn't using the computer hopes that he or she tore the article out and put it in his article file. Failing that, he or she hopes it can be found in the index of the 'New England Journal of Medicine.'" Hogan, by contrast, will go to Medline and ask it to search for all

the articles published in the journal on a certain topic within a particular range of dates. "Generally, one can find articles within five minutes."

Dr. Richard Bockman, a Manhattan endocrinologist, uses Medline for refresher courses. "Clinically, it's extremely useful to me. We've all become highly specialized. I'm often asked a question about something I should know about but is not exactly in my field."

200,000 Pages Of Data On A CD

A growing number of medical publishers are turning to "CD-ROMs" (discs for storing computer data) to put the data bases directly on the physician's desk. A single CD-ROM, which resembles a compact disc, can hold more than 200,000 pages of data and make the material instantly available to the physician.

Medical Economics Company, which publishes the "Physician's Desk Reference," (PDR) has recently put that standard reference volume on CD-ROM. A computer with the PDR can print out every drug recommended for a particular condition in seconds, and compare each against a data base of drug interactions to see if there would be any conflicts with a medication the patient is already taking, said David Sefton, director of special editorial projects at "Medical Economics."

Recently, Hogan took a portable computer with CD-ROM to a hospital where he visited a patient who appeared to have drug-induced lupus. He instructed the computer to search the drugs whose descriptions included the word "lupus."

"In about three seconds, the PDR on CD-ROM produced a list for me of every drug mentioned in association with lupus in the entire PDR—about 25. It was as though I could read the entire PDR in 15 seconds and extract those references to the clinical question which was raised. We could make a very confident statement that the patient was not taking any drugs associated with development of drug-

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induced lupus," Hogan stated. "Personally, I think that it's the kind of software that justifies the purchase of the hardware to operate it."

"Poisondex," another CD-ROM product, "has really standardized the care of poisoning across the country," according to Dr. Richard Weisman director of Bellevue Hospital's poison control center. For any substance in its data base, Poisondex will provide a physician with a complete list of the substance's ingredients and recommended treatments. "It could take you an entire day to gather the same information that you can obtain with this system in 15 seconds," Weisman said.

As both online and CD-ROM systems become more common and easy to use, many physicians think the profession may be forced to use these systems to protect itself. "Ultimately, the physicians who ignore it will do so at their own risk," said Hogan. "Attorneys will be able to say:

A computer modem could give physicians almost immediate access to medical literature needed for a diagnosis.

Well, Doctor X, you could have had the information in your hand in 30 seconds...if you had turned on your terminal and dialed the on-line service. There is a possibility that a new standard of care will exist." ■

Costs of these computerized systems and services vary greatly. Data base vendors usually charge a sign-up fee, an annual fee, and a per-hour connect charge. Most CD-ROMs are sold by subscription for $500 to $2,000 a year; CD-ROM players cost between $600 and $1,200.

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Medical Connection
Dialogue Information Services
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Medis Data Central
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Dayton, Ohio 45401
(800) 227-4908
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• Cancer data bases, including Physician Data Query
• Drug information library
• Health care administrative library
• Poisondex $50 monthly subscription; $32/hour connect time

Physician's Desk Reference on CD-ROM
Medical Economics Company
680 Kinderkamack Road
Oradell, N.J. 07649
(800) 526-4870
$595/year (includes three annual updates) (requires CD-ROM player)

Poisondex, toxicology data base, on CD-ROM
Micromedex
660 Bannock, 3rd floor
Denver, Colo. 80204-4506
(800) 525-9083
(prices not provided)

SilverPlatter Information
37 Walnut Street
Wellesley Hills, Mass. 02181
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• All data bases are on CD-ROM
• Nursing and health planning data bases
• Toxicological and cancer data bases
• Medline on CD-ROM $700-$2,000/year, depending on data base (requires CD-ROM player)