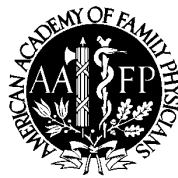


Computers and Family Practice



An FP Report Special Section

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FPs lead computer crusade

When it comes to the computer revolution in medicine, family physicians are leading the march. FPs are designing software, implementing computer systems, providing technology consultations, and pressuring the computer industry to develop tools relevant to primary care.

"Family practice, more than any other specialty, is information intensive," says Randall Oates, MD, a practicing family physician in Springdale, AR. "My vision of the future of health care is based on family physicians with good information skills. If family physicians learn how to manage information, get the right knowledge at the right time, and get the information to their patients, then family practice will step to the forefront. Otherwise, it will become obsolete."

Dr. Oates founded DOCS Inc., which provides software for ambulatory care and consulting systems. He says many FPs like himself have been ready and willing to embrace technology for years, but the industry wasn't catering to family practice. That's changing as more family physicians clamor to find technology to improve their practices' efficiency and effectiveness.

In fact, pressure from FPs has led to an ever-growing sup-

ply of tools. For example:

- "There's software designed to electronically recreate the visual image of a chart, so a physician is immediately familiar with it," Dr. Oates explains. "It looks like a chart; it acts like a chart; it's just on the monitor instead of in your hand."

- Software called "5-Minute Consult" provides a concise outline of most problems encountered in the primary care office, Dr. Oates says. "I just had my first patient in five years with rheumatic fever. I couldn't remember all the diagnostic criteria and the latest information, so I switched on the '5-Minute Consult' and reviewed the information on rheumatic fever. I printed out two copies—one for the patient and one for the chart. The family was impressed and I was comfortable that I was doing state-of-the-art medical care."

- Drug interaction software will alert you when a patient's medications pose dangerous combinations. Dr. Oates says 10-20 percent of hospitalizations in the United States result from iatrogenic complications, usually medicine-related. **"There's a significant potential for cost savings and improved quality of care using drug interaction software,"** he adds.

Not psyched up about computers?

For a long time, family physician Mary Jo Welker, MD, hated computers. "My brother can make a computer do anything, and I always figured, 'Let those people do it,'" she says.

Now, however, she's a convert—not quite loving computers, but at least working with them. "Computers are here to stay. I realized there's no way around them," says Dr. Welker.

She uses them every day—for example, to obtain the results of lab work she's ordered or to check a patient's ER report. As a residency faculty member of Rardin Family Practice Center at Ohio State University, Columbus, Dr. Welker can retrieve many records in the OSU hospital system.

The information sharing is extensive: "If I send a patient to see one of several hundred OSU-affiliated physicians, the doctor can access reports on all the blood work, X-rays, or stress tests I've ordered for the patient," she says.

Physicians should hire consultants as guides in computerizing their offices and training their staffs, Dr. Welker suggests. "We need help making decisions about computerizing. It's hard enough to know how to practice medicine, let alone how to do all this computer stuff."

You may be one of about 24 percent of AAFP active members whose offices are not computerized, even for billing. If so, there are ways to ease into computer use.

Family physician Gilbert Solomon, MD, of Canoga Park, CA, suggests: Find something that's easier to do with a computer than

with what you use now.

For example:

- It may be more convenient for you to find information on a CD-ROM or the Internet than in books.

- Instead of dictating a letter for each patient you refer, you might compose referral letters on a computer, save them, and revise them for other patients.

- You probably could save time by reading lab results at a computer instead of calling the lab and waiting to be told the results.

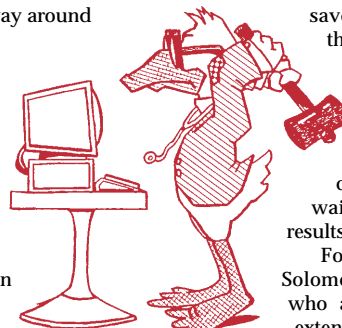
Fortunately, says Dr. Solomon, most physicians who are using computers extensively are somewhat evangelistic about it. In any

hospital lunchroom, there's likely to be a group of people talking about their CD-ROMs. "They'll be glad to give you demonstrations," Dr. Solomon says.

He and Dr. Welker served on AAFP's Technical Panel on Office Computerization, which has recommended ways to encourage family physicians to adopt computer technology. **One way is this FP Report special section, filled with tips for the computer-challenged and success stories about computer use.**

According to Dr. Solomon, family physicians' prognosis for overcoming computerphobia is good.

"Family physicians are not technology-adverse," he says. "When the flexible sigmoidoscope came out, family physicians embraced it. Ultrasound, the CT scan—when these came out, family physicians didn't say, 'I don't want to do it.' We use technology when we see it improves patient care."



"Hit any key to continue."

Surfing AAFP Online

Illinois AFP board members visit the Academy's new World Wide Web site during the State Officers' Conference May 4-5 in Kansas City. Chris Robinson of the AAFP Research Division (right) stands by to assist (seated, from left) Raymond Weber, MD, of Glen Carbon; Ed Hirsch, MD, of Sycamore; and (standing) Kelly Carroll, MD, of East Moline. You, too, can surf the AAFP Web site; see the story on page 3 to find out how.



Sharon Dent/AAFP

To contact FPs quoted here...

The family physicians quoted in this *FP Report* special section would welcome your questions and comments about computerizing.

Here are their phone numbers and e-mail addresses:
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 Gilbert Solomon, MD, (818) 226-3666, 75500.402@CompuServe.com
 Todd Swanson, MD, (715) 839-5177, tswanson@eauclair.fammed.wisc.edu
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 John Zapp, MD, (610) 876-8814, zappj@hal.hahnemann.edu

Programs for Patients

'Patients will tell computers anything,' FP discovers

For a head start on diagnosis, Allen Wenner, MD, has his patients provide their own health histories, answering questions at computers in his reception room. Then he reviews the histories before seeing the patients.

"I come to the patient with a high level of data," says Dr. Wenner, a practicing family physician, computer consultant, and teacher at the University of South Carolina in Columbia. He explains, "Patients will tell computers anything."

Early this year, Dr. Wenner imbedded a domestic violence scale in his questionnaire. **Within a month, he had identified five cases of domestic violence—compared with making two such diagnoses in his previous 17 years in practice.**

One case involved a patient with a hematoma of the ankle. When the nurse asked how she got hurt, she said she tripped over the phone—an odd answer. Furthermore, the patient had answered "sometimes" to the computer's question, "Do you ever feel afraid or threatened at home?"

So while Dr. Wenner taped her ankle, he asked what she meant by "sometimes." And she admitted her husband had thrown the phone at her.

"She told the truth to the computer," says Dr. Wenner. "And there I was, an accidental tourist; I

didn't exactly know what to do." But at least he had the diagnosis right.

In the late 1980s, after Dr. Wenner put a depression scale into his questionnaire, he began discovering twice as much depression as other physicians were finding. He had similar success identifying alcohol abuse. However, drug abusers and pushers don't like his computer program because it catches them lying.

Dr. Wenner's computerized patient questionnaire has grown to about 15,000 questions. He and his students find the questions in medical literature and elsewhere.

"Most medical software is simplistic," Dr. Wenner says. "Patient interview software has to branch, so if a patient replies in a certain way, that triggers the next logical series of questions. Branching is modeled after the way physicians think."

The real lab for this technology is the doctor's office, not the medical school, Dr. Wenner says. "Until physicians help developers capture what physicians need, the technology will just plod along at a slow pace, of no benefit to anybody."

His solution: "We have to jump in and make these tools work. We can deliver better medical care at lower cost right now, using information technology."

AAFP joins health information network on Web

Invite your patients to visit America's House-Call Network, a new World Wide Web site with health care information. If you've been giving them AAFP patient education materials, some of what they'll see on AHCN will look familiar.

That's because the Academy is a strategic partner in AHCN. Under "patient education," people can read AAFP's Health Notes From Your Family Doctor brochures and *American Family Physician* handouts.

The site, which premiered in May, already has about 90,000 "hits" a day—the tally of AHCN pages people are accessing.

A video news release promoting AHCN links the house calls of the past with the new network. It opens by saying, "In simpler times, house calls were the backbone of American medicine, and with the launch of America's HouseCall Network, doctors are making house calls again—this time, by computer."

America's
HouseCall
Network

NBC, ABC, CBS, and the Fox network have been airing all or part of the video news release. Within a recent nine-day period, an estimated 6,380,000 viewers saw the release in 27 cities across the country.

So the word is spreading about the new health information clearinghouse.

Eventually, the Academy will work with Orbis to produce online CME programs.

Orbis' AHCN partners include the Academy, US Pharmacopeia (which provides AHCN with information on drugs), United HealthCare (a national managed care organization), and the National Health Council (including its 106 member organizations).

To access AHCN, use the following address—<http://www.housecall.com>

—and tip off your computer-savvy patients about this new site to visit on the Web. You also can get to AHCN from the Academy's new Web site (see story, page 3B).

Research update

Plugged-in people can combat addiction

Can computer programs persuade you to change? Can technology help people combat addiction?

Yes, says Mary Alice Gillispie, MD, a family physician researcher in Fargo, ND. She's designed computer programs that have helped people stop smoking.

Her trick: Her software focuses on stages of behavior change rather than the goal of quitting smoking. Young adults in her 1994-95 study worked through three 15-minute computer sessions over two months, and they set their own pace for change.

"Everybody lives in their own skin," Dr. Gillispie says. "If somebody's not ready to quit smoking and they have barriers we don't know about, we're not going to help by focusing only on quitting. However, patients can use computer programs to figure out where they are and where they're ready to make some change."

Sixty-five smokers who were undergraduate psychology students at North Dakota State University, Fargo, participated in the collaborative study. Their responses to computer questions triggered tailored feedback.

By seven months after the computer sessions, about 30 percent of the subjects had stopped smoking. Dr. Gillispie credits computer use with the success of the smoking cessation study. "Something about quick, personalized feedback is helpful. You put in your information and get suggestions back right away from the computer."

To make patient education comprehensive, physicians are going to have to call on the computer, says Dr. Gillispie. "We forget things, we tend to be rushed, and it is difficult to cover all the important health issues with each patient. But the computer never tires out. It turns patients into resources for carrying out the work of health care."

Dr. Gillispie and her colleagues have also developed Pap test, STD, and health assessment computer programs and are conducting a study on binge drinking among college students.

Keep the human touch in a high-tech family practice

Computer systems—traditionally stationed at the appointment counter or in the billing office—are frequently joining the physician and patient in the exam room. What impact might this "third presence" have on the patient exam?

At a recent workshop, John Zapp, MD, director of the Crozer-Keystone Center for Family Health in Springfield, PA, said studies indicate that patients generally accept computerized medical records.

Two findings he noted relate to the flow of communication during the exam and the patient's image of his or her physician.

"If I've got my head buried in the

computer, that's just about as bad as if I've got my head buried in the patient's chart. You've got to make the human contact," he said. "Also, when we use a computer, there's the patient's perception, 'My physician is up on new things.'"

He said another issue patients raised in one small study was confidentiality. Although the subject was mentioned by several patients, most had confidence that mechanisms were in place to protect the confidentiality of their records.

Several patients expressed their belief that computerized record systems could be more secure than paper records, and only one respondent indi-

cated that concern about confidentiality limited his interaction with his physician.

Dr. Zapp made his presentation at a medical informatics workshop during the Society of Teachers of Family Medicine annual meeting, held April 27-May 1 in San Francisco. He and other speakers at the meeting said that, with widespread and proficient use, the computer may enhance physician-patient encounters. It could, for example, allow the physician to easily obtain clinical information, distribute patient education materials, and write treatment orders at the point of service—leaving more time to care for the patient.

In a presentation to the 1993 Sym-

posium on Clinical Applications in Medical Care, François Gremy, MD, professor of public health at the University of Montpellier in France, also theorized that a high-tech medical practice could contribute to retaining the human touch in medicine.

"Although informatics can be helpful in the treatment of disease, it is useless in the treatment of the patient," Dr. Gremy said. "But it can alleviate [our] analytic, intellectual work, save part of our time, and make us more available to meet the patient's needs and wishes. So the most inhuman science may be a contributor to the reintroduction of some humanity into our profession."

Academy Initiatives

AAFP opens new "home" on World Wide Web

The Academy entered a new world of communication May 16 when it opened an AAFP site on the World Wide Web.

If you already surf the Web, visit AAFP's home page at this address—<http://www.aafp.org>—and gain access to about 4,500 pages of information from the Academy.

If you don't already use the Web, perhaps the information at AAFP's Web site will encourage you to get access to the Web, says Jeff Altwies, AAFP's online services manager.

What's up?

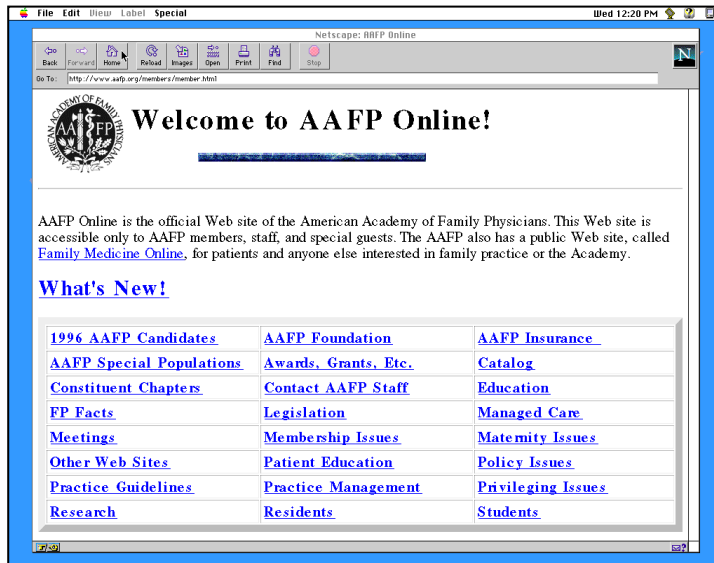
From the home page, you can follow the links to AAFP Online, the "members only" section of the Web site.

When prompted for your "User name" or "User ID" (depending on what software you're using), enter your AAFP ID number. For "password," enter your last name, all in capital letters, without punctuation.

You will see pretty much what the above illustration shows you.

What can you do from there? For starters:

- Name a topic and scan Academy materials on that subject.
- Read AAFP materials on patient education, obstetrics, privileges, practice guidelines, and age charts for periodic health exams.
- Scan AAFP CME course descriptions and



AAFP Online puts Academy information at your fingertips. Come and browse!

check dates and locations for meetings you might attend.

- Read the *FP Report*, excerpts from *American Family Physician* and *Family Practice Management*, *AAFP Catalog*, and Academy policies.
- Open the family practice residency directory, click on a state, and read about the state's residencies.
- Review the program for the AAFP Scientific

Assembly Oct. 3-6, including CME and family events.

- Use the "guest book" to tell the Academy what you think about AAFP Online.
- Search for funds for education or research in AAFP's list of awards, scholarships, and grants.
- See who's running for AAFP offices.
- Contact online constituent chapters.
- Send e-mail to AAFP staff members for information about AAFP services and products.
- Read information on state and federal legislation and send e-mail to online members of the US Congress.
- Read information from the AAFP Foundation.

Family Medicine Online

The public does not have access to AAFP Online, but can enter another section of the AAFP Web site, Family Medicine Online, without a password. This section tells what a family doctor is and what medical problems an FP is trained to treat.

Family Medicine Online gives patient education information and contains information for health care professionals, reporters, and students who want to know about family practice.

The public can also use Family Medicine Online to link with other Web sites, including America's HouseCall Network (see story, page 2B).

Resources help family physicians plug into computers

Get FPs turned on to computers—that's a high priority for the AAFP Board of Directors.

Board Chair Kenneth L. Evans, MD, of Edmond, OK, says the Board is committed to bringing the AAFP to the leading edge in electronic communication and record keeping to serve as a resource and example for members. He encourages family physicians to log on and venture into the world of information available via computer.

"In the very near future, literacy in all areas of electronic communication and information management will be as expected and necessary as the ability to read and write is today," Dr. Evans says. "In order for family physicians to remain current and competitive, they must be able to participate in this exploding arena."

The Academy offers a growing number of resources for FPs making the leap into the world of cyber-medicine. Here are the main products and services currently available.

• **AAFP Network of Consultants.** Looking for someone with expertise in computers? The Academy maintains a

database of individuals and firms qualified to consult in all areas of practice management, including computerization. Paying a good consultant up front may save you from making costly mistakes.

To make your network connection, call the AAFP Socioeconomics Division at (800) 274-2237, ext. 3448. For \$30, you can receive information on up to five consultants; \$60 will get you information on six or more. A helpful monograph, *How and When to Choose a Practice Management Consultant*, is available for \$15 by calling the AAFP Order Department at (800) 944-0000 and requesting item #R9249.

If you would like to be a consultant in the network, call Susan Rehm, practice development manager, at (800) 274-2237, ext. 3450.

• **1996 Scientific Assembly.** This year's Assembly Oct. 3-6 in New Orleans will feature a variety of computer courses, demonstrations, and hands-on opportunities. Basic classes will be offered in Windows 95, Word for Windows, Excel for Windows, and Quicken. Medically related computer

classes will cover the Internet, e-mail, the World Wide Web, Grateful Med, and electronic patient records. The Assembly's Computer World will encompass the Computer Zoo, lectures and demonstrations, and computer exhibits. For more information, call the hotline at (800) 926-6890 or use AAFP Online (see story above).

• **Recommended Core Educational Guideline.** The Academy recently released a new educational guideline detailing what family practice residents should be taught in the areas of medical informatics and computer applications. To receive a copy,

call the AAFP Education Division at (800) 274-2237, ext. 5208.

• **Guidelines for the Selection of Office Computer Systems for Family Physicians.** Developed in 1992, this handbook still offers useful tips for choosing a computer system, particularly for billing/accounts receivable purposes. It was written specifically for family physicians and includes tips on what to look for and what to avoid in software and hardware. The cost is \$8 for members and \$20 for nonmembers. To obtain a copy, call the AAFP Order Department at (800) 944-0000 and request item #R603.

New e-mail address

Use the Academy's new Internet address—fp@aafp.org—if you'd like to send e-mail to the Academy.

Confused? Use AAFP Express!

Do you know the difference between a Web site, the Internet, and your kitchen sink? If you're cyber-challenged, use your phone (a trusty, late-19th-century invention) to request the following faxes from the AAFP Express fax service.

These materials may help you decipher computer terms, consider computerizing your practice, and (after computerizing) see how you can access the World Wide Web without much expense:

- a glossary of basic computer terms—document #1005,
- a bibliography of books, articles, CD-ROMs, e-mail or Web site addresses, and other resources—document #1006; and
- tips on what you need to access the AAFP Web site—document #6000.

To receive these documents, call (800) AAFP EXP [223-7397], enter your AAFP identification number, and follow the voice prompts.

Thespian FPs present their 'Vision of the Future'

SAN DIEGO—The janitor bemoaned his assignment to sweep up piles of medical charts littering the floor. He finally gave up; lay down to take a nap; and received a visit from the wizard, Merlin, who detailed an appealing view of a future with no paper records at all.

So began a day-long multimedia presentation on the "Vision of the Future"—a look at health care in the year 2010—staged at the Medical Records Institute's Toward an Electronic Patient Record '96 conference May 13. FPs dominated the

cast, leading the janitor—family physician Allen Wenner, MD—to explore health care in the patient's home, physician's office, and institution.

Dr. Wenner coordinated the presentation, working with other participants to plan the entire show via the Internet. He said the program was designed to "make docs think outside the box."

Dressed in Star Trek shirts and other costumes, the "actors" portrayed a future rich with technological opportunities and creative ways to enhance patient

care. They interspersed lectures with colorful skits: examining a patient via a home TV monitor, studying lab results on a laptop computer during a round of golf, working on a computer in a hospital room, and tapping into the Internet to provide resources for a noncompliant patient.

"Cleaning up chart paperwork 30 percent of the time makes a doctor a janitor," said Dr. Wenner. "The electronic medical record is the most powerful tool that family doctors will have in my lifetime."

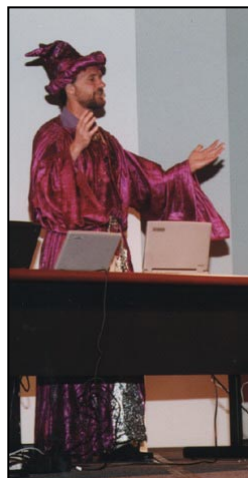


(Right) Allen Wenner, MD, of Columbia, SC, plays a janitor in a skit and takes a break from sweeping to declare his frustration with paper medical records.

(Far left) Merlin, portrayed by Jonathan Peck, PhD, of Alexandria, VA, uses wizardry and laptops to take a peek at health care in the year 2010.

(Left) If you're a parent in the year 2010 and your youngster has a sore throat, what will you do? There's no need to rush to a clinic or emergency room. As seen here, you'll call up your family physician, who will examine your child from an office using scopes attached to your TV monitor. John Bachman, MD, of Rochester, MN (on TV screen), examines Ross Goldman of San Diego while his "dad," David Brannen of San Diego, helps by positioning the scope.

Story and photos by Sharon Dickinson Dent Associate Editor



Timeline: Should you get your feet wet first or jump right in?

So you're ready to computerize. Are you going to build your electronic medical records system piece by piece or implement it all at once?

Get your feet wet

When it comes to the sea of computer technology, Peter Geerlofs, MD, of Port Townsend, WA, recommends wading in a step at a time. "This method reduces the culture shock inherent in moving too quickly towards the electronic patient record," he says.

He practiced rural family medicine for 14 years and later founded Medifor, a company dedicated to an incremental, modular approach to clinical computing, focusing first on patient education.

Many inexpensive features can offer big benefits. For example, drug interaction software is available for less than \$250, Dr. Geerlofs says.

Converting to an electronic medical record incrementally may help the intimidated FP feel more comfortable with technology, says Dr. Geerlofs.

Jump right in

On the other hand, Todd Swanson, MD, clinical associate professor at the University of Wisconsin medical school's Eau Claire Family Practice Residency, reminds FPs that sometimes it's easier to take a deep breath and jump in.

He should know. In 1994, the residency went from paper charts and 13 computers to paperless charts, 60 computers, and a Novell network in six months. "It was fairly fast, but having a paperless EMR as the endpoint forced

change to happen," Dr. Swanson says. "The electronic medical record requires everybody to become computer literate and change how they do things."

He suggests that family physicians planning to computerize do so over the course of a year. "If you put the whole electronic medical record in fairly quickly, you don't have to struggle with integrating different modules."

Dr. Swanson says a small group may have an easier time "jumping right in" than a large organization, which would

probably have to phase in the system. What about the cost of the two approaches? "Eventually you need personal computers in the exam rooms, and that's half the cost," says Dr. Swanson. "Either way, it comes out about the same."

Invest in 'peopleware'

Regardless of which approach you take, your success depends on solid planning, says Randall Oates, MD, of Springdale, AR. "It's a re-engineering," he says. "Most obstacles can be anti-

ipated and addressed long before you bring the system in."

He recommends budgeting as much or more for "peopleware" as you do for software and hardware. **Build trust among the people who will be affected by the new system**, involve all office personnel early in the decision process, and begin retraining. "Education, conferencing, getting the communication system in place so everyone can share their successes and frustrations—these are often overlooked," Dr. Oates says.

Expert describes phases of medical record computerization

SAN DIEGO—Health care providers around the world have embarked on the road toward electronic records, but nobody has quite reached the destination, according to Peter Waegemann, executive director of the Medical Records Institute, based in Newton, MA.

Mr. Waegemann gave a talk at an MRI conference in mid-May. "Health care is changing," he said. "And it all depends on information flow. If you have a patient record system fully computerized, you have a nerve center for information."

Automated medical record. This is the level representing most of today's computer use among health care professionals, Mr. Waegemann explained. Information stored on a standard personal computer doesn't comply with legal requirements for electronic medical records, so a paper file must be maintained. The computer information

is used as a working file, and then pages are printed and filed in the chart.

Computerized medical record. At this level, physicians and staff collect information on paper and scan it into the computer. As with the automated medical record, it's departmentalized, so patients must provide their names and other information each time they visit a different department. However, the computerized medical record addresses some legal issues—such as preserving data integrity—because information can't be altered on screen.

Electronic medical record. Information from all departments in an enterprise would be accessible through the same system. It would eliminate the need for paper records because it would meet legal requirements for confidentiality, security, accountability, and data integrity.

Electronic patient record. This level reflects the Medical Records Institute's

vision: a system that would link all patient information, including data from outside the enterprise. Emergency room services, primary care, mental health treatments, fitness training, dental care, and all other health care would be accessible via one database. Before this level is reached, a number of issues—such as national patient identifiers and privacy—need to be resolved, Mr. Waegemann said. "Do you really want your dentist looking through your OB-Gyn records?"

Electronic health record. This ultimate level in computerized patient records would place some responsibility on patients to keep track of their own health. Patients would record their own health information to supplement data from health care professionals. "You and your children should all have your own health records and you should be in charge of the information," Mr. Waegemann said.