Patients, Physicians and the Internet

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Abstract

The Internet will have a profound effect on the practice and business of medicine. Physicians, eager to provide high-quality care and forced by competition to offer online services, will introduce e-mail and patient-friendly Web sites to improve administrative services and manage common medical conditions. Patients will identify more health information online and will take more responsibility for their care. The doctor/patient relationship will be altered: Some aspects of electronic communication will enhance the bond, and others will threaten it. Patients will have access to vast information sources of variable validity. Many physician organizations are preparing for the electronic transformation, but most physicians are unprepared, and many are resistant.

Introduction

The Internet will become a major vehicle or health maintenance and health care. Even before application of the new technology has spread extensively, familiar worries about the quality of care, privacy, security of personal health information, malpractice, and physician reimbursement have emerged. Here I explore principally how physicians and patients will be affected by online communications. I address the following questions: How will the physician's life change? How will the patient's role change? What will happen to the traditional relationship between doctors and patients? What are the potential benefits and drawbacks for each? What forces are driving these changes? How will the overwhelming volume of health information available on the Web influence doctors and patients? What are some of the policy implications of these upcoming adaptations?

Origins of change.

Many, including myself, assumed that an electronic transformation of the health care delivery system would be gradual, and that the new technology the Internet and the World Wide Web would be the prime agent of change. (1) In fact, the pace of the transformation has accelerated. Although technology has been a critical enabler, turmoil in the health care delivery system and the resulting disaffection of both doctors and patients are proving to be powerful forces for change. Physicians are dissatisfied with large patient loads, burdened with administrative tasks, frustrated by reporting requirements, and angry about losing control of patient care decisions. (2) Patients are intimidated by the dense technicalities of health plans and frustrated in trying to speak to their doctors. Many complain that their doctors are rushed and do not listen
adequately to their complaints. Many patients are beginning to use online communications and are dragging their doctors along. Patients are taking more interest in their own care, and many are expecting their physicians to interpret the information that their newly acquired online search strategies uncover.

A New Role For Doctors

Because many barriers exist to a major implementation of the Internet in medicine, it would be folly to predict when large numbers of doctors and patients will be fully engaged in online medical care. Imagining the shape of a transformed medical care delivery system is not difficult, however, based on current technology. Nonetheless, the following formulation will almost certainly underestimate the complexity and the organization of any online system.

Eventually, doctors will treat common diseases such as urinary tract infections, common back pain, and upper respiratory infections by e-mail, just as they have previously done by telephone. E-mail will be used as an adjunct to direct patient encounters, not instead of them. Using patients test results from reliable home monitoring equipment, physicians will adjust doses of drugs. Access to patients electronic records and test results will be vastly enhanced. Physicians ability to respond to patient inquiries will be more convenient because of the asynchronous nature of e-mail, although with video cameras and substantial increases in bandwidth, patients and doctors will be able to interact simultaneously. Doctors and their organizations will provide highly customized Web-based services to patients such as disease management tools, patient care protocols, and consumer-oriented health information. Some of this material will be supplied by their own staffs, and others by surviving dot-coms. Physicians will be called on to develop a new partnership with a public that is more responsible for its own care.

Doctors also will use encrypted e-mail for prescribing, scheduling appointments, sending laboratory reports, referring to other doctors, reminding and alerting patients about new diagnostic and therapeutic approaches or newly identified side effects of drugs, and possibly even informing people regularly about the status of their family members. Doctors will make a major attempt to integrate their clinical and clerical activities into a seamless electronic operation that will increase their efficiency and reduce their office costs.

By advertising their expertise through Web sites, physician organizations will try to increase their market shares and extend their reach well beyond the local community. Web sites will become potential platforms for e-commerce, extending physicians capacity to profit from selling various commodities. The Web sites of hospitals and physician groups already offer an enormous range of information, including lists of clinical trials, chat rooms, access to online research tools, discussion forums, frequently asked questions, news items, and health plan performance reports.

Patients Go Online

Patients now seek information on the Web mainly about complaints, syndromes and diseases, drugs, nutrition, and fitness. Many now arm themselves with reports of all kinds from controlled trials to hearsay and this trend will increase. More than in the past, they will expect their doctors to interpret such information. Patients also will demand better service: immediate access to care; responses twenty-four hours a day, seven days a week to their questions; efficient scheduling; personal electronic record keeping; and regular communications from their doctors such as therapeutic advances and reminders of appointments. Patients will expect such services to be tailored to their specific needs. They will expect to receive timely electronic exchanges with doctors offices and will insist on assurances that electronic information on their health will not be shared without their permission. Patients will use e-mail and the Web to get information that doctors know little about, such as home health services, nursing homes, assisted living facilities, and local suppliers of medical equipment. They also will draw emotional support
not only from their doctors, but from far-flung people in online chat rooms and disease-focused interest groups.

Benefits And Drawbacks Of Health Care Online

Barriers to physician acceptance.

Many doctors use the Internet now, but most use it to search databases for medical information or for commercial transactions. There are no reliable or consistent data on the number of physicians who use e-mail regularly for clinical encounters. Many physicians will resist the scenarios described above. Many are wary of new computer applications: They became jaded when predictions that computers would help them solve diagnostic and therapeutic problems did not pan out. Many aver that patients questions from reams of material derived from questionable medical Web sites will erode their tight schedules even further, and they fret that no reimbursement will accompany the progressively increasing time required to deal with patients e-mail. Physicians worry about litigation in direct patient encounters, but e-mail places a new dimension on the problem. Not only could physicians be sued for diagnosing and prescribing without examining the patient, but (in contrast to telephone exchanges) the record of the electronic encounter is permanent. Finally, doctors need proof that whatever facilitated online administrative and business activities they receive will be worth paying for. [4]

Many physicians have predicted that their time will be under even greater demand by a new barrage of Web-based material and e-mail messages from patients. However, in the current system of care, vast amounts of physicians time is consumed by paperwork and by the need to communicate with insurance companies about changing formularies and for permission to provide expensive care. Answering dozens of phone calls from patients at the end of a busy day is another burden. Yet some physician groups and health plans will undoubtedly move aggressively into an electronic mode, converting their high-overhead clerical and business activities such as billing, reporting, and ordering supplies to electronic transactions. It seems plausible that in the future electronic efficiencies in office management, patient record keeping, prescribing, laboratory reporting, and interactions with patients will free up physicians to do what they should be doing: talking to and examining patients.

Growing consumer demands.

The public’s use of the Internet to find health-related information and their interest in contacting their physicians by e-mail continue to increase. From approximately seven million Internet users in 1996, the number climbed to approximately twenty-five million in 1999 and had nearly reached thirty-seven million by May 2000. [5] A large fraction of these Internet users believe that such use empowers them to make better health choices. In one survey approximately half of health seekers urged a family member or a friend to visit a doctor, changed their exercise or eating habits, or made a treatment decision. [6] Many users join an illness support group after visiting a disease-specific Web site.

Another survey found that about half of online users were interested in using a Web site operated by their doctor’s office, but only 4 6 percent were actually doing so. [7] Only 3 percent were using e-mail to communicate with their doctors offices. [8] Surprisingly, one-third of the online health seekers said that they would probably switch doctors if they could communicate with them by e-mail. [9] In another survey, almost half of consumers were not concerned about the Internet as a threat to confidentiality or to their privacy. [10] Either these people do not appreciate yet how such breaches can occur and how serious they can be, or they are willing to trade a possible loss of privacy for more efficiency and convenience.

A new physician/patient relationship.

Much will be gained by enhanced electronic communication, by access of the public to health and
medical information, and by reduction of hassles for both patients and physicians. Patients acceptance of e-mail and home monitoring all predict acceptance of the newer technology. Nonetheless, e-mail, which can be a sterile, mechanical encounter, has emerged at a time when many consider direct doctor/patient inter-actions to have become too impersonal already. If e-mail takes the place of some person-to-person interactions, we are in danger of losing essential benefits of the doctor/patient relationship. Such repeated personal interactions often give the physician a rich and profound appreciation of a patient's needs and personal preferences. Doctors gain an understanding of patients capabilities to coordinate their own care, their abilities to follow a complex drug regimen, and their willingness to endure lifesaving maneuvers when they are desperately sick. A physician learns gradually which patients should be examined when they call and which patients can be safely managed in other ways.

E-mail exchanges also lack context, so the multiple clues during a direct patient encounter can be lost if online care is substituted for person-to-person care. A patient's tone of voice and physical appearance often lead a doctor to consider new and important diagnostic possibilities. The capacity to readily follow up on the clues observed during a medical interview and the ability to elicit unanticipated physical findings could easily be lost in a purely electronic encounter. Many doctors have been quite reluctant to diagnose and prescribe by telephone (and appropriately so), and they are likely to be even less willing to do so by e-mail.

Despite the lackadaisical attitude of many, privacy and confidentiality are of utmost concern. [11] How will patients be assured that their e-mail messages are seen only by their doctors and not by office staff, insurers, employers, or other third parties? Many people who use e-mail at work on company time to send sensitive personal information to their doctors are unaware that such e-mail messages remain stored on servers and hard drives even when they delete them and that many employers have legal access to them. [12]

For the patient, loss of trust in the physician is a potentially serious consequence. Patients trust their doctors not only because of physicians special expertise but because they believe that their doctors are committed to protect each patient's best interests. Trust has a critical, intensely personal dimension. The repeated personal interaction between patients and doctors is one of the most powerful influences on the trust that patients have in physicians opinions, judgments, and recommendations. Intensely private and personal conversations and the laying on of hands during examinations are essential bases of this trust. In turn, trust reassures and comforts.

Doctors will have to recognize that the acceptability of e-mail for private health information will vary from patient to patient. Although some will be reticent to relate symptoms such as impotence, bedwetting, or suicidal tendencies, other patients may even be more forthright about such intensely personal issues when they are facing an inanimate computer in the privacy of their homes. [13]

**Impetus For Accelerated Change**

Some companies that evaluate health applications on the Internet argue that based on interviews and polls of doctors, much of the excitement over e-mail between physicians and patients is only hype and that physicians resistance to change, the high cost of office automation, and time pressures on doctors will seriously deter implementation of an online medical care system. [14] They ignore, I believe, the pressure from patients and the beginnings of electronic networks initiated by physician groups, health plans, and integrated delivery systems. [15] Solo practice is declining. A large fraction of physicians now work in groups, and many groups are developing online capacities to conduct day-to-day administrative and business functions using the group or health plan as the organizer and the source of funds. Some executives of these organizations believe that they are uniquely positioned to enhance value by simplifying these functions in a secure, predictable, and screened environment. The naysayers also ignore powerful forces from below: a generation of students and house officers who are far ahead of their elders.
in computer applications. Many are already using personal digital assistants to sign out to each other at the end of a shift in the hospital, to retrieve critical prescribing information from large drug databases, and even to capture the news of the day. Their elders are not likely to be blind to the advantages of the new technology or long.

Policy Implications

Role of government.

The federal government has an obligation not only to provide reliable Web sites from its outstanding health and medical institutions but also to educate the public about how to identify erroneous and misleading material. Many federal Web sites designed for the public exist now; they selectively list Web sites of governmental agencies and respected professional organizations. Monitoring the quality of the medical content on medical Web sites is not possible because of the enormous number of sites and the multiplicity of links to other Web sites. Given this complexity, a full-fledged regulatory system with legal restrictions, surveillance mechanisms, and punishments to cope with medical sources on the Internet is unworkable and probably unconstitutional.

Government does have a critical role in regulating certain kinds of electronic health transactions and information, and, to some extent, it is already doing so. Both the Food and Drug Administration (FDA) and the Federal Trade Commission (FTC) have some jurisdiction, but so far they have limited resources to investigate inappropriate online sales of drugs or advertising. An essential role for the federal government is to enact strong laws that ensure patient privacy and confidentiality. Following passage of the Health Insurance Portability and Accountability Act in 1996, many bills have been introduced in Congress, and action on them is pending. [16]

Medicine's role.

So far physicians and physician organizations are not engaged much in establishing guidelines and policies. The Institute of Medicine (IOM) has recommended that professional organizations work with health care networks to develop clinical guidelines and has urged the Department of Health and Human Services (HHS) to be more assertive in this area. [17] The American Medical Informatics Association has proposed guidelines on the clinical uses of e-mail, and several other organizations have adopted these suggestions. [18] All such guidelines are voluntary. The use of online communication in the care of individual patients, in specific diseases, and in various socioeconomic groups has not been systematically evaluated. This domain is a fruitful one for agencies and foundations that support health services research to fund and explore.

There are substantial risks of deep involvement by physicians in transforming medicine, yet there are also grave risks of opting out. As one report aptly put it, The question is whether physicians will participate themselves or leave it as a medium for others to control. Should they decide not to participate, they risk seeing the importance of their role aseducators for their patients diminish at the same time that their patients risk being misled by bad health information. [19] Yet for individual doctors the world of the Web is expensive and time-consuming, and for professional organizations it can be a minefield. Building a successful Web site for an organization's members requires a large capital investment, made possible for nearly all medical organizations by partnering with a commercial enterprise. In turn, partnerships with industry can be constraining and even compromising. Returning invested capital and making a profit may require not-for-profit organizations to agree to add commercial advertising to their sites, to allow sponsorship of parts of a site, or to sell information about their subscribers. Each of these profit-making mechanisms has potential consequences. Nonetheless, reliance on the market to provide high-quality information is likely to be as effective as it has been in current forms of communication. The most highly respected commercial and not-for-profit sites and those with trusted institutional brands are likely to be
among the most frequently visited.

Role of the courts.

The courts will play a role when substandard medical advice given via Web sites or e-mail yields poor medical outcomes, especially when professional advice is given without a direct patient encounter or when state lines are crossed. Lawsuits will ensure some accountability, but consistent with past malpractice experience, such suits will almost certainly be a blunt and inadequate tool to deal with quality issues in online medical care.

The changes I have described are, I believe, inevitable. Although most young physicians will have little difficulty adapting, most physicians now in practice are unskilled in electronic communication and in data searching, and not enough is being done to foster their online competence. Moreover, aside from the progressively increasing demands of patients, there are few incentives for unskilled physicians to gain expertise. Professional organizations, educational institutions, certifying boards, and other health care organizations must begin to grapple with this generational electronic gap.

Finally, the ultimate barrier is not the physician, the patient, or legalities. To transform care will require new, sophisticated software that permits unconstrained interaction with computers by voice, that incorporates patient information from disparate electronic sources, that unerringly solves clinical problems, and that makes information searching reliable, focused, and fast. With such tools, resistance will vanish.

References