A new world

A new world of information management has exploded over the globe in the past decade. Who has not heard of the World Wide Web and the Internet? Perhaps no other notion in history has been disseminated so rapidly and so broadly. It was only in 1989 that the idea of a World Wide Web was discussed at the European Council for Nuclear Research, followed a year later by a prototype web using Hypertext Markup Language (HTML) and the Hypertext Transfer Protocol (HTTP).

The Web itself was introduced a mere 8 years ago. Remember Gopher and Mosaic? Then came Netscape in 1994, and the number of Internet hosts entered a logarithmic growth curve that grew from a couple million hosts in 1994 to 20 million in 1997 and is now approaching 100 million by some estimates. The number of individuals using the Internet has grown so fast that numbers are meaningless. Uses for the e-mail and Web functions are nearly unlimited as faster computers and more powerful programs are announced monthly.

Health care has joined the excitement from the beginning, as it became immediately obvious that information exchange and communication among colleagues could occur much faster with the new modalities. Special interest groups could debate their chosen topics and newsgroups could post their latest information, while associations, universities, publishers, individuals, and industries could find dozens of new uses for this emerging technology.

Individual practitioners who used computers mainly as in-office billing systems rapidly learned that their modem connection to the outside world opened many possibilities. Information retrieval has become much easier, and innovative support programs that facilitate clinical decision-making are appearing. Access to the global scientific database is a couple of mouse clicks away, and "intelligent" tutoring systems walk us through "on-demand" learning experiences. Teleconferencing among colleagues has become easier and easier. Broadly disseminated grand round teaching sessions are gaining popularity, and telemedicine/teledentistry technology allows a content-expert mentor to look over our shoulder through our in-office video cameras as we tend to our patients.

The article by Schleyer and Dasari in this issue points out the potential for computerized comprehensive patient records. The potential for ever-broader databases on the patient population is intriguing from an academic research standpoint, and equally frightening for others who feel that individual privacy is being eroded at ever-increasing rates.

Besides the annoyances of spammers and hackers and operating system bugs, another potential problem in this brave new world of information technology is quality assurance for content. How can the reader be sure that what appears on the screen is valid and reliable? This question is perhaps nowhere so critical as in the health professions.

Many who enter debates on this issue offer various rules, restrictions, regulations, controls, and other limitations as an answer. I believe such attempts must be vigorously opposed because I believe in the human intellect and our ability to learn how to sort fact from fiction. After all, we've been doing just that for a long time. Until we can define flawless panels of experts and systems to monitor what information we have access to, it should remain the responsibility of the reader/observer to evaluate whatever information presents itself. Since such flawless entities are merely unattainable intellectual speculations, there seems little reason to even entertain their possibility.

Since humans first began to communicate, the potential for good and bad information transfer has been a reality. Just as the printing press prints what is fed into it, the computer screen displays what is fed into it. Whether communication is verbal, visual, or tactile, the chance of bad information and/or bad interpretation is always there. Our public libraries are filled with materials that span the range of human minds, from base depravity to soaring intellect. In free societies it will ever be so. This range of human behavior thrives even in the most restricted societies, albeit underground.

Knowledge is still powerful, as it always has been and always will be. The responsibility of the observer to engage in critical thinking and decision making about what information to accept as reliable is still clearly on the shoulders of that observer, where it rightly belongs. And the responsibility of careful and judicious selection of treatment modalities for our patients is still the primary requirement of attending doctors. The quality of the *source* of a piece of knowledge is still one of the most important aspects of it. Hippocrates got it right more than 2,000 years ago. Regardless of where our information comes from, we have the personal, fundamental, and timeless mandate always before us: *Primum non nocere.*

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