Athletic Therapy in the Information Age

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"Knowledge is power."

Most readers will recognize this phrase as an advertising slogan for a major computer manufacturer. Despite its present day usage, this quote is attributed to Sir Francis Bacon over 400 years ago, and not by coincidence, during the midst of Europe's Renaissance.

Today the world is in the dawn of a new Renaissance in which information (knowledge) is the principle commodity, and the ability to access information is the key to both personal and professional empowerment.

Human existence has been marked by three distinct periods that have shaped the way we live, work, and interact. During the first of these periods, the Agricultural Age, people lived and worked in small isolated pockets, gathering only to exchange their goods. The quality of the land for growing crops and raising livestock was what attracted people to, or drove them away from, their habitat.

Inventions such as the steam engine and innovations such as the assembly line gave rise to the Industrial Revolution. This mechanization created urban societies in which a large number of people clustered within a small area. Most major industrial centers formed near major waterways, which were needed to supply and transport raw materials and the finished products.

The advent of microcircuit technology has provided the impetus for the third wave of human existence, the Information Age. During the early years of the Information Age, the major technology companies developed near the source of the main natural resource required: brain power. The Route 128 technological centers around Boston, North Carolina's Research Triangle, and California's Silicon Valley all emerged around the nation's major educational and technological research centers.

As described by Toffler, humankind is now in the dawn of the "Third Wave" of its existence. We live in a technological based society in which there are more televisions, telephones, and computers per capita in the U.S. than in any other country in the world.

Instantaneous access to and availability of information are making the world smaller. In effect we are living in a global community. No longer must technology based companies be located next to a major research university. All that is required is a telephone line or coaxial cable to transmit information.

Although the term information has become a synonym for the computer, the scope of information delivery mechanisms exceeds any one piece of technology and often requires that several individual (and seemingly unrelated) systems work in concert with each other. Cellular telephones, fax machines, satellite and cable TV, and even voice mail increases a person's instantaneous access to information.

As key participants in a large conglomerated health care delivery system, athletic therapists by necessity fit all the available information into a framework that yields the power of knowledge. Without this knowledge, the information lies useless.

Athletic therapists must collect pertinent information from diverse sources that address all areas of practice, and they must disseminate it throughout the rest of the health care system. With capitation of health care dollars being the trend today, this information and its efficient implementation becomes a commodity.

Historical Perspective

Physicians have long possessed unquestioned knowledge and authority regarding their patients' care. The individual who was injured or ill was essentially a passive participant in his or her treatment and (hopefully) recovery. The physician's omnipotence grew out of the profession's esoteric language—although the same may be said about computer technology (see clarification of...
COMPUTER TERMS

Baud  Number of bits per second that are transferred across a modem. The higher the baud rate, the faster the modem. In practical terms, the actual number of bits per second transferred is twice the baud rate.

Byte  Formed by 8 bits (bits contain a value of either 0 or 1)

DPI (dots per inch)  Describes the resolution of output (printers) and input devices (scanners). The higher the DPI, the better the quality.

ftp  File transfer protocol.

Gigabyte (GB)  Storage capacity (memory or disk) of approximately 1 billion bytes (1,073,741,824 bytes). One gigabyte equals 1,000 MB.

http  Hypertext transport protocol. When clicked, these links transfer data (web pages or files) to your computer.

Internet  A conceptual, loosely structured framework of computer networks. Analogous to the nation’s entire highway system.

Megabyte (MB)  Storage capacity (memory or disk) of approximately 1 million bytes (1,048,576 bytes).

PDA  Personal digital assistant.

RAM  Read-only memory. The location to where programs and data are loaded. Computers tend to run faster with increased RAM.

URL  Universal resource locator. Identifies a complete World Wide Web address (e.g., http://www.nata.org).

World Wide Web (WWW)  A structured hypertext system. Clicking on “hot spots” (link) loads a specific topic. Similar to the windows help system.

computer terms above). Prescriptions were written in Latin, medical conferences were closed to the public, and, quite simply, physicians were more educated than the rest of society.

Various information delivery systems have given patients the tools to question their physician’s decisions, thus enabling them to take an active part in their own health care. Where once the physician dictated what care he deemed best for the patient, today interaction and consultations about the patient’s needs are part of the treatment plan. Again, a shift in power is occurring as a result of knowledge.

During the mid-to late 1970s several ambitious telemedicine (live TV images and sounds transmitted across standard telephone lines) experiments attempted to link teaching hospitals and other medical centers, thus creating a virtual educational consortium.

Though these early attempts did not live up to expectations, they provided a knowledge base for future such attempts. Interestingly, much of the growth in information technology is directly associated with military and governmental (e.g., NASA) developments in this area.

The growth of the computer often has resulted in an immediate impact on the health care delivery system. Desktop personal computers have been a standard piece of equipment in health care settings since the 1980s. Prior to this, and concurrent with the development of the first personal computers, computer use was confined to institutional mainframes. These computers functioned in their mostly rote capacity of word processing, spreadsheet manipulation, data analysis, and database management.

The mid-1980s saw the development of software dedicated to the needs of athletic therapy. Injury reporting programs were used to record, classify, and categorize injury, treatment, and rehabilitation records.

Specialized account management packages were developed to assist and improve the handling of insurance claims. The tedious and time consuming administrative functions associated were slowly becoming streamlined and automated. In addition, computer hardware innovations have had a profound impact on medical diagnostic techniques such as CT scans and MRIs and have helped advance surgical techniques.