



Chapter IX

Telemedicine and the Information Highway

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Health systems broaden their importance in the midst of the ongoing international communications revolution. Health services are a natural candidate to become an integral part of the "information highway". Terms such as telemedicine, telehealth, teleradiology, and teledermatology have been integrated into technical and academic jargon and have become the object of research and organizational planning.

Telemedicine is the utilization of electronic technology to send medical data from one location to another. Supporting technology may be anything from a simple telephone, to complex communication satellite, and modern, videoconference equipment.

The term telemedicine is used to define the practice of medicine through communication technology. These two ancient words, medicine and communication, were first linked at the beginning of the 20th century, when ships used radio communication to receive medical assistance. It was only in the early 1960s, however, that link became truly significant. When we discuss communication from the technological aspect, we refer to the means permitting widespread transfer of information.

Improving access to information, minimizing cost, lowering professional isolation and improving quality of medical services are

considered to be the main advantages offered by telemedicine.

The two central components affecting the success of telemedicine assimilation are the cost of service and the quality of service.

There is a clear and obvious correlation between technological development, in communications and other technological areas, such as image compression and adaptation, storage, and robotics, and advances in medical service in communication.

A basic and central element of telemedicine is the computer-based patient record. This subject has been widely discussed in the medical world, and is a central subject in the reform plans of American health systems.

Acceptance of telemedicine in the life of the individual and the health services organizations will demand a substantial change in clinical and organizational conceptions, and will result in a revolution in the existing health organizational structures, in treatment and diagnostic procedures, and in the health system policy as a whole.

BACKGROUND

Electronic communication continues to develop and evolve. Utilizing computer sources at distant locations is as popular today as was the use of typewriters 20 years ago. There are *online* commercial services such as CompuServe, automatic registers linked to banks in other countries, and companies with offices worldwide that routinely transfer information between distant sites.

The common denominator between all these sources is that they are all a part of an information channel "*network*." Communication over these networks enables computer stations to send and receive information without regard to distance.

There are few areas, if any, that will not benefit from taking advantage of the various information communication technologies. Utilization of information technology as a whole is particularly relevant to health and clinical systems. Ongoing advances in the various medical technologies, together with the desire to offer superior medical services to society, while giving consideration to cost and results, are just part of the reason for the widespread use of information technologies in health systems.

Factoring in the profusion of different services, the diversification and proliferation of insuring bodies, the growing self-awareness of personal

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