

Chapter XXIX

Current Telehealth Applications in Telemedicine

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ABSTRACT

Rapidly emerging information and communication technologies (ICT) have spurred the recent escalation of various telehealth applications. There is an enormous interest in finding new ways to apply telehealth as much as telemedicine as a special part of telehealth. This chapter has along with providing a better understanding of what telehealth is, investigated the ways in which such an avant-garde, advancing, and newly emerging technology could be used in order to be available in an upper-healthcare level.

INTRODUCTION

Rapidly emerging information and communication technologies (ICTs) have spurred the recent escalation of various telehealth applications (Lehoux, Battista, & Lance, 2000). It is true that there is an enormous interest in finding new ways to apply ICT as much as telemedicine as a special part of telehealth. This chapter, along with providing a better understanding of what telehealth is, investigates the ways in

which such an avant-garde, advancing, and newly emerging technology could be used in order to raise the level of healthcare.

First of all, it is necessary to clarify the issue regarding the confusion between the terms telehealth and telemedicine, and even telecare and e-health.

- Telemedicine involves the use of modern information technology, especially two-way interactive audio and video communi-

cations, computers, and telemetry, to deliver healthcare to remote patients and to facilitate information exchanges between primary healthcare physicians at some distance from each other (Bashur & Lovett, 1997). It existed long before the Internet. It has been said that telemedicine was present when the term was first established nearly 30 years ago (Willemian et al., as cited in Maheu, Whitten, & Allen, 2001).

- Telecare refers to services that provide care for people away from institutions, typically in their own homes, for example, in the monitoring of elderly people as they lead their normal lives. In other words, it refers to services that provide healthcare no matter where the doctor, the patient, or his or her medical records are (Cornford & Klecun-Dabroeska, 2001).
- E-health is a relatively new term that first appeared in 1999, and it refers to Internet-based healthcare delivery (McClendon, 2000). It includes all forms of healthcare over the Internet (Singh, 2002).
- Telehealth could be considered an umbrella term because the it is seen by authors as being more encompassing of the above terms whereas telemedicine is restricted toward interactive patient-doctor teleconsultations, and e-health refers solely to Internet-based healthcare delivery. It covers a number of different technologies, services, and professions including medicine, health promotion, health administration, social services, and information systems (Cornford & Klecun-Dabroeska, 2001; Singh, 2002).

In order to avoid a misunderstanding, the World Health Organisation (WHO) distinguished the terms telehealth and telemedicine in 1997: “Telehealth is understood to mean the

integration of communications systems into the practice of protecting and promoting health, while telemedicine is the incorporation of these terms into curative medicine” (WHO, 1997).

THE HISTORICAL EVOLUTION OF TELEHEALTH

Before an in-depth analysis of current telehealth applications is conducted, it is necessary to examine the historical evolution of telehealth. Nowadays, we consider telehealth as being a matter of high technology, especially associated with the revolution of ICTs such as television, fax, or the Internet. Although we cannot ignore the dependence of telehealth on concurrent developments, it is true that humans have since the early 1900s been communicating information about health long before such new technologies arose (Darkins & Cary, 2000; Singh, 2002).

The first stage of telehealth was in the 1970s when scientists made the first effort to transmit health information in order to provide healthcare to people who were travelling by ships (Maheu et al., 2001). There were also more efforts, especially in the United States, to use telehealth in a productive way, but the efforts were aborted due to high costs and some other reasons, such as insufficient image quality or insufficient acceptance from doctors (Darkins & Cary, 2000; Singh, 2002).

The second stage was in the beginning of the 1990s. Almost 20 years after the first attempt, the conditions were good enough for the telehealth sector to expand. The most important reason for this regeneration of telehealth was the lower cost of technology. Many countries took advantage of that low cost, and a great deal of telehealth applications was adopted. The leading countries were the United States and Norway, but Australia was not far away

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