

# Chapter 13

## Teledermatology and Telemedicine: Expanding the Reach of Medical Consulting Beyond Physical Barriers

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### **ABSTRACT**

*Telemedicine is a new branch of medicine exploiting the new communication devices to expand medical services and consultation beyond physical limits. This new significant chapter in medicine will interest every medical area, taking advantage of digital devices that are becoming more complex, reducing the need for the patient's physical presence only to perform analysis or interventions. Teledermatology is a new expanding area in telemedicine, consisting of the ability to resolve skin-related health problems without the physical presence of the patients. Skin diseases represent a significant source of morbidity and a minor source of mortality worldwide. In this chapter, the authors analyze how telemedicine and teledermatology developed, their current use in medicine, and current studies and reviews already present in literature. Also, future possible prospects and developments of these techniques will be analyzed.*

### **INTRODUCTION**

Information and telecommunications technologies have radically revolutionized the daily activities of millions of people, contributing to the improvement of life quality and work in the most varied fields. One of the sectors that have drawn the most significant benefits, particularly from the synergy between information technology and biomedicine, is health. Thanks to these new technologies, it was possible to initiate a concrete process of renewal and rationalization aimed at overall improving the quality of the system itself (Hjelm NM.,2005).

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The World Health Organization has defined telemedicine as follows: “The delivery of healthcare services, where distance is a critical factor, by all healthcare professionals using information and communication technologies for diagnosis, treatment and prevention of diseases and injuries, research and evaluation, and for the continuing education of healthcare providers. All in the interest of advancing the health of individuals and their communities”. Various areas of medicine have been interested in this new method of visiting patients.

The birth of telemedicine fits into this context to conceive the activity of the doctor who, thanks to the help of technologies, manages to control and monitor patients without their physical presence; in this way, it is possible to optimize time and resources, as well as favoring weaker groups of patients, in particular the elderly, for whom it becomes problematic to move to perform hospital checks.

At present, it is not possible to give an unambiguous definition of the term telemedicine, especially in consideration of the fact that discipline is constantly evolving, parallel to the progress made by information technologies; A fairly comprehensive definition was provided by the experts of the

European Commission in 2008 for which telemedicine is ” ‘the provision of healthcare services, through the use of ICT, in situations where the health professional and the patient (or two health professionals) are not in the same location. It involves the secure transmission of medical data and information, through text, sound, images or other forms needed for the prevention, diagnosis, treatment, and follow-up of patients” (Nikus et al. 2011). In addition, in 1997 the World Health Organization also described telemedicine as “delivery health care, when distance is critical, from part of health workers; for this purpose, computer technologies are used and telecommunications for the exchange of correct information for the diagnosis, the therapy, the prevention of pathologies, for the permanent education of operators health and research and study in all sectors of interest for improving the state of health of the individual and the community “.

Ultimately, it is clear from all this that telemedicine always involves the provision of a health service and always places at the center the patient and the assistance he needs; It is therefore not a new medical specialty, but of a modality that uses the tools made available by new technologies to improve health performance while retaining the implications of any medical procedure from a professional point of view, ethical and legal. In this sense, implying the mediation of audiovisual communication systems in the doctor-patient relationship, telemedicine involves the complete computerization and integration of all hospital activities’ be they clinical but also administrative and managerial (Ekeland et al.2010).

However, telemedicine must not distort the physician figure and the relationship with the patient; it must contribute to maintaining the interpersonal relationship established in the therapeutic act intact. Therefore, attention to non-verbal language, considering the patient as a person rather than as a sick person, and interpersonal relationship must be guaranteed by the physician, especially when communicating a diagnosis or deciding on a therapy. However, it should be noted that telemedicine has a considerable value, especially from a psychological point of view for the patient and his family. A concrete example is given by the practice of the so-called homecare in which, thanks to remote assistance, it is possible to establish a direct connection between the patient and his family and the hospital that is treating him; continuous monitoring carried out remotely by medical personnel, it allows the sick person to feel safe even in his own home, with the advantage of enjoying the proximity of loved ones. This is an example of the “positive” application of technology to medicine; nevertheless, it is necessary to be vigilant in using these tools. (Sica et al.2010)The general issues that revolve around telemedicine do not concern only the medical field; there is, in fact, another delicate problem that affects a broader sector, namely that of information technology applications and their accessibility. If widespread diffusion use of new

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