

Chapter XIII

Decentralization of the Greek National Telemedicine System

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Abstract

The demographic and geographic dispersion of Greece necessitates the adoption of telemedicine solutions in order to reduce patient transportation and waiting time. A centralized Telemedicine model proves insufficient to support the multitude of islands and other isolated areas of Greek mainland. This chapter records and analyzes the shortcomings and difficulties of the existing Greek Telemedicine system and suggests a more flexible, decentralized model, which upgrades the regional telemedicine centers into mid-range providers of telemedicine services. This reduces the burden of the central telemedicine unit, reduces reaction time in the offering of primary care without losing in efficiency in more serious incidents. In this context, we list the necessary actions at the technical, operational and organizational levels for the smooth transition to a new system, as well as the advantages of this new structure.

The binding of the new regional telemedicine centers with the existing telemedicine system must be performed with the minimum cost. This presumes recording and reuse of the existing infrastructure, training of personnel and smooth transition to the new telemedicine structure. Based on the existing experiences, the specialized needs of the Greek National Healthcare System as well as the modern scientific developments, we present an action plan that covers technical and organizational aspects for the development and successful incorporation and management of the regional telemedicine centers in the Greek National Telemedicine System.

Introduction

The combined utilization of the information and telecommunication technologies for the provision of distant health and education services, in the context of telemedicine, offers important advantages in health systems and respectively in patients (Linkous, 2002). The most important are: (a) immediate access to scarce human and material resources (specialized doctors and expensive biomedical equipment) from remote primary care units, which lack of such resources; (b) reduction of medical errors; (c) improvement of provided health services at the local level; (d) reduction of costs and unnecessary patient transports; (e) offer of primary medical support to transport units; (f) facilitation of distant education and training programs (Apostolakis & Kastania, 2000); (g) large-scale review and analysis of medical data (i.e., by geographical region); and (h) support of health advising briefings and so forth (Wootton, 1996; 2001).

Telemedicine is ideal for offering distant healthcare and medical consulting, but it proves insufficient when advanced healthcare issues must be solved. Primary diagnosis of common incidents can be easily performed from distance, while other more complex incidents demand detailed examination, medical tests and specialized doctors. Common incidents are more frequent than complex ones. As a result, a specialized practitioner is usually less busy than a general practitioner and intervenes less frequently to provide medical advices or diagnosis. A centralized telemedicine system usually has to deal with lack of general doctors or wrong utilization of specialized doctors for trivial incidents. In addition to this, such architectures result in increased information traffic between the dispersed medical units and the single telemedicine central.

This work suggests a dispersed telemedicine architecture with more than one nucleus that hierarchically serves medical requests, starting from local medical units that handle common incidents and delegate complex issues to higher levels. We consider that this approach is more flexible and efficient than the centralized equivalent and use the Greek Telemedicine System as a test bed. The demographic and geographic dispersion of Greece (multitude of islands, isolated highland regions, and unbalanced distribution of population) and the shortage of specialized resources (human

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