

# Chapter 17

## Telemedicine R&D Influencing Incoming Strategies and Organization Models

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### ABSTRACT

*In the modern medicine and surgery, innovations arise from interdisciplinary work. Therefore, to analyse how telemedicine R&D is influencing strategies and organizational models in healthcare systems we have to study how ICT and robotics innovations can interact with structured healthcare services on a large scale. The problem is interdisciplinary, and the answer has to be on different levels: economical, technological, and organizational. Overall, change needs of two paradigms from telemedicine to telematic medicine and surgery and from financial strategies for saving to lean thinking for innovations. The innovation of value can be obtained when healthcare organization combines innovative telematic medicine and surgery services with utility, prices, and costs. To work on these innovations without rearranging the whole organizational flow around the future e-health service means inducing the healthcare organization to generate wastes and face unnecessary expenses attached to future healthcare processes with such high and probably unsustainable costs.*

### INTRODUCTION

Generally speaking the aims of research and development are clear. To research means to explore new paths and to develop means to apply new effective solutions.

Professionals working in healthcare organizations know the interaction of the research with the development processes cannot be so simple and

clear. At first, we have to distinguish the application of new technologies to old therapies from new treatments performable thanks to technological innovations. Physicians are usually available to adopt new technology when it does not modify the consolidated treatment scheme. They are much less available when the technological innovations open a new treatment possibility cause of in this case they have the responsibility to abandoned a

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well known treatment process to a new one and through new sophisticated hi-tech products not easy to manage. The ICT and Robotics industries prefer to apply technological innovations into highly standardized treatment processes which are more sure, easier and with faster return of the investment. Nevertheless, we can observe a certain progress in medical treatments anyway, but the overall results in quality and safety improvement of the healthcare services can be not so clear for patients (Scuffham, 2002; Whitten, 2002; Franzini, 2011; Ekeland, 2010; Weinstein, 2008; Schweitzer, 2012; Kohn, 2000; U.S. Food and Drug Administration, 2009).

To understand these complex organizational interactions it is useful to remember the bio-medical studies are basic research while the medical practice is essentially applicative research and for that reason in the modern Medicine and Surgery the innovations arise from interdisciplinary work rather than individual efforts (Das, 1996; Lum, 2006; Greer, 2008).

Therefore, to analyse how the Telemedicine R&D is influencing strategies and organizational models in healthcare systems we can begin to an inquiry: why in this period of great technological progresses is the ability of medical practice lower in using ICT and Robotics innovations in structured healthcare services on a large scale?

If the problem is interdisciplinary then the answer has to be on different levels.

## **INFLUENCING STRATEGIES AND ECONOMICS**

Even if there has been any period in history a period never existed in which available resources were sufficient to satisfy the human wish to increase quality and length of life, it is real that in the last three decades the gap between healthcare expectations and resources appears disproportionately high (Klarman, 1965).

Then, all over the world, people have realised that all desired care cannot be administered to everybody, but resources have to be allocated following ethical criteria accepted by people and that at the same time are equal and effective. European politicians have chosen to invest in healthcare systems based on a cooperative spirit in order to guarantee the access to care to every citizen while saving costs at the same time.

Nevertheless, citizens are impatient owing to bureaucracy and waiting lists in public healthcare systems and they do not often realise that such limitations are a kind of hidden form of rationing. They simply perceive these systems as disorganised. To mitigate the social and economical pressures on these systems, in the last two decades several reform processes have been carried out with the aim reducing requests and increasing efficiency of healthcare services (Pink, 2003; Ikkersheim, 2012; Wyss, 2000; Hurley, 1995).

To achieve this objective in the public healthcare systems the redefinition of services using the concept of priority is considered the main action to be implemented in the experience of many countries: UK, New Zealand, Australia (Manning, 2011), Canada (Gibson, 2011), USA (Mirelman, 2012). This kind of action has led to the new criteria of filtering essential services in Holland (Tanke, 2012), or the new system of waiting list management in New Zealand (Dew, 2005).

All they are interventions made to advance from the generic model of universal care toward the selective one. Without a deep assessment of the real situation of the healthcare organizations, analyzing overall the main steps which have to be taken to create more benefits for their patients, the cost cutting based only on financial logic has the same meaning of a symptomatic cure administered without understanding the reasons of the illness. In recent years, experience has shown that, not only in management of healthcare systems, the illusion of decisive costs cutting often produced opposite results to the objectives. To copy-and-

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