

The Acceptability of Teleconsultations in Teledentistry: A Case Study



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INTRODUCTION

Telemedicine and teledentistry are both relatively recent developments. Even telework, the field from which these specialties emerged, only dates back to the 1973-1974 oil crisis (Bailey & Kurland, 2002). Telework is often classified along three dimensions: organizational (working in the same or a different organization), spatial (working in the same or different physical space) and temporal (where communication with co-workers is either synchronous or asynchronous) (Kimble et al., 2000); as we shall see, these three basic divisions apply equally to telemedicine and teledentistry.

In its short history, various definitions have been put forward and various terms have been coined for telemedicine (Tulu, Chatterjee, & Laxminarayan, 2005). Perhaps the simplest is that proposed by Celler, Lovell, and Basilakis (2003, p. 242), telemedicine is “a system of healthcare delivery in which physicians examine patients through the use of telecommunications technology.”

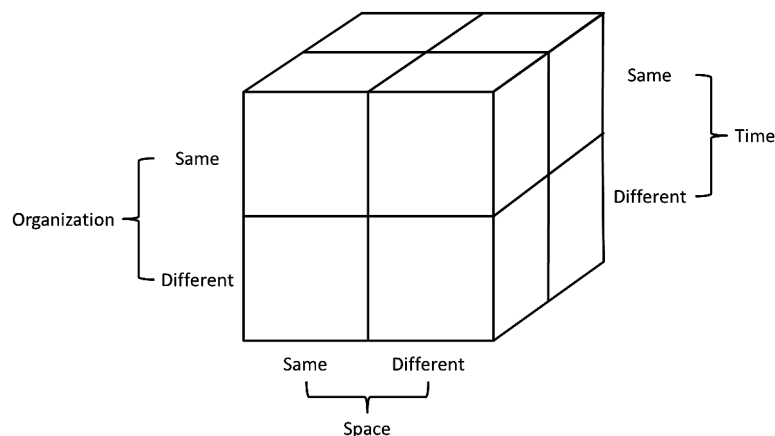
There have been a number of reviews of telemedicine (Roine, Ohinmaa, & Hailey, 2001; Hailey, Ohinmaa, & Roine, 2004) which put forward a wide range of potential benefits; nevertheless, despite the scope of the topic, certain themes appear consistently:

- Making specialist skills available in remote locations or to groups such as the elderly and disabled (Kimble et al., 2000; Asthana & Halliday, 2004; Noel, Vogel, Erdos, Cornwall, & Levin, 2004; Tulu et al., 2005).
- Improved adherence to standards and notions of best practice, particularly in the case of chronic conditions (Celler et al., 2003; Noel et al., 2004; Kimble, 2014).
- Reducing the cost of healthcare (Tulu et al., 2005; Bashshur, Shannon, Krupinski, & Grigsby, 2011; Kimble, 2014).

Although a number of activities can be placed under the heading of telemedicine, most involve some form of teleconsultation. Referring to Figure 1, a teleconsultation takes place when a physician in one location gives a consultation to a patient at some remote location (i.e. physician and patient are located

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Figure 1. A classification scheme for teleworking
Kimble et al., 2000.



in different spaces). The patient may, or may not, be supported by some other healthcare professional (i.e. a teleconsultation may involve a number of different organizations). The goal of the teleconsultation is for the patient and / or the healthcare professional to provide the physician with the information they need to make a diagnosis. Thus, finally, the communication between patient and physician, and the delivery of the diagnosis, may be either synchronous (e.g. via a live video link) or asynchronous (e.g. data is stored and accessed later).

Telemedicine is now well established in countries such as the United States and Australia (Celler et al., 2003) and there is growing interest in the topic in developing countries where problems of transport and access to healthcare facilities make telemedicine an attractive alternative to more traditional forms of healthcare provision (Chen, Cheng, & Mehta, 2013). Although various forms of telemedicine such as teleradiology, telepathology, teledermatology, and teleophthalmology are well established, teledentistry, the focus of this chapter, is relatively new.

According to Mihailovic, Miladinovic, and Vujicic (2011), the origins of Teledentistry can be traced back to the U.S. Army's Total Dental Access Project in 1994. They note that despite advances in the field of telemedicine, the field of teledentistry remains somewhat neglected. Although the situation is improving thanks to interest from transition and emerging economies such as Brazil (Torres-Pereira et al., 2008), Turkey (Ata & Ozkan, 2009) and India (Sukhabogi, Hameed, & Chandrashekar, 2014), teledentistry is still an emergent field. Below we briefly review some of potential benefits of teledentistry and some of the obstacles in the way of its further development.

TELEDENTISTRY: BENEFITS AND OBSTACLES

“Teledentistry is a combination of telecommunications and dentistry involving the exchange of clinical information and images over remote distances for dental consultation and treatment planning” (Jampani, Nutalapati, Dontula, & Boyapati, 2011). As indicated, this may include synchronous and asynchronous consultations on the same or different sites and the involvement of a variety of different professions.

Perhaps not surprisingly, many of the motivations for developing teledentistry are broadly the same as for telemedicine. It is claimed to improve access to and the delivery of oral healthcare whilst simultaneously decreasing costs (Golder & Brennan, 2000); to be particularly important in rural areas (Bhambal,

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