

Chapter 10

The Importance of Telemedicine in Global Health Care

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ABSTRACT

The chapter explains the challenges facing health care systems; the overview of telemedicine; the technological devices of telemedicine systems; telemedicine and chronic diseases; telemedicine and technology acceptance model (TAM); the applications of telemedicine in the oil and gas industry; and the importance of telemedicine in global health care. Telemedicine brings the health care value through its ability for the remote visits with patients, immediate access to health care professionals, real-time access to health data, and health monitoring capabilities. Telemedicine is an effective health care measure that can manage the new and affordable technology with the potential to deliver the convenient and effective care to patients, and provides an alternative way for the health care organizations to deliver the essential health outcomes. The chapter argues that applying telemedicine has the potential to increase health care performance and gain sustainable competitive advantage in global health care.

INTRODUCTION

Telemedicine services have been applied in public health care and private health care (Rho, Yoon, Kim, & Choi, 2015). Telemedicine serves as an alternative to traditional outpatient visits (Berkhof, van den Berg, Uil, & Kerstjens, 2015) and offers the potentially increasing benefits for improving both the accessibility and quality of health care (Le Goff-Pronost & Sicotte, 2010). Information and communication technology (ICT) is a significant component of the health care domain (Gajanayake, Sahama, & Iannella, 2014). Telemedicine includes the adoption of ICT (Doubouya, Kamsu-Foguem, Kenfack, & Foguem, 2015) toward allowing patients to have the rapid health care-related evaluation, diagnosis, and treatment (Chanussot-Deprez & Contreras-Ruiz, 2008).

Telemedicine refers to a number of technologies, systems, and applications that can be adopted to provide the remote support of health care at home (Raffaelli, Spinsante, & Gambi, 2016). Telemedicine is a well-developed tool for medical practice whereby telecommunication is used to support health care

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delivery at a distance (Merrell, 2005) and can utilize the advanced telecommunication and information technology (IT) for the delivery of health care and the exchange of health information across the globe (Kamsu-Foguem, Tiako, Fotso, & Foguem, 2015). The benefits of telemedicine are the accuracy, reliability, efficacy, and effectiveness (Demaerschalk, 2011). Patients can obtain information regardless of place or time and therefore receive telemedicine services at any place and any time (Park, Jung, Shin, Cho, & Lee, 2014).

Telemedicine introduces changes to the communication process between the doctor and patient that may affect health outcomes if not recognized and managed (LeRouge, Garfield, & Collins, 2012). Regarding telemedicine, robots, computers, telecommunication, and information networks are changing the aspects of health care systems (Satava, 2005). The perspectives of telemedicine-related digitization have the positive impacts on teleexpertise, where a medical professional can remotely ask the advice through the operation of ICT to provide treatment to a patient in critical conditions in the remote environment (Doubouya et al., 2015). Telemedicine enables the essential synergy of technological improvements in the field of distant communication on the one hand, and the ongoing need to find cheaper but still effective ways to receive medical consultation for people living in rural areas, on the other hand (Idan, Wallach, Almagor, Waisman, & Linn, 2015).

This chapter aims to bridge the gap in the literature on the thorough literature consolidation of telemedicine. The extensive literature of telemedicine provides a contribution to practitioners and researchers by describing the multifaceted applications of telemedicine in order to maximize the health care impact of telemedicine in global health care.

BACKGROUND

Over the past two decades, the application of telemedicine as a way to provide medical services has grown as the patients seek more convenient ways to receive health care (Yang et al., 2015). There are rapid development in the field of medical imaging and telemedicine (Juliet, Rajsingh, & Ezra, 2015). The use of health information technology (health IT), such as telemedicine, is considered as a major contributing factor to health care service delivery (Karon, 2016) and has the potential to improve patient quality of care, reduce costs, and promote medical practices in modern health care (Pendergrass, Heart, Ranganathan, & Venkatakrishnan, 2014). Telemedicine has been used to address a wide range of health concerns in a wide variety of health care settings (Mackert & Whitten, 2007) and has proven useful in the delivery of health care in remote areas (Klotz, Muir, Cameron, & Delaney, 2005).

Telemedicine is the provision of patient care by telecommunication devices, including transfer of data for the formulation of the medical plan (Malasanos, 2006). Telemedicine allows collaborative activities between health professionals for the deployment of medical procedures remotely executed by means of using ICT (Doubouya, Kamsu-Foguem, Kenfack, & Foguem, 2014). Patients become deeply in despair when telemedicine services stop without any alternative perspective to get medical care (Nakayasu & Sato, 2012). Advances in telecommunication technologies have created the new opportunities to provide the telemedicine as an adjunct to the medical management of patients (Anker, Koehler, & Abraham, 2011). With the advent of telemedicine, patients are likely to purchase more health care from foreign telemedical pharmacy clinics to avoid the costs and the hassle of travel (McLean & McLean, 2007).

Telemedicine facilitates the efficient provision of health care services (Doubouya et al., 2015) and bridges the challenges often encountered across different service levels including the primary care, regional

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