Chapter 45
Working Anywhere for Telehealth

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ABSTRACT

Clinicians (general practitioners, specialists, and allied health professionals) are experts in medicine, not technology. The delivery of health care using technology includes changes to the way the clinician works; in effect, they work from anywhere. This study examined telehealth adoption from the perspective of clinicians. Data was collected from 44 in-depth interviews undertaken with a variety of Australian clinicians. The findings show that telehealth is a complex endeavour involving multiple stakeholders. While the potential of telehealth service provision is significant, the realities of delivering telehealth services involve many challenges for clinicians. These include technology-related issues; lack of funding and financial incentives for telehealth; the changing skills and capabilities required by clinicians who engage in telehealth consultations; as well as changes to business processes resulting from the introduction in a complex environment. A conceptual model for the adoption of sustainable telehealth is proposed for better understanding of these complexities.

INTRODUCTION

Telehealth has been defined as 'enabling health care services and related processes delivered over distance, using information and communication technologies' (Carati & Margelis, 2013, p. 3). Telehealth encompasses the curative, preventative and promotive aspects of health care delivered over a distance (van Dyke, 2014) and is a subset of e-Health that incorporates more broadly the use of information and communications technology to support health and health-related fields (Al-Shorbaji & Geissbuhler, 2012). Telemedicine is a subset of telehealth and is specifically focused on the curative aspect of health delivery using information and communication technology (van Dyke, 2014).

Access to affordable, reliable technology is a key enabling factor for telehealth. Information and communication technologies (ICT) supporting telehealth service delivery include video conferencing, web-based applications, mobile computing, body sensors and other monitoring applications, in an environment where advances in technology continue to disrupt the way modern healthcare is delivered. Recent examples include wearable technologies such as mobile phone apps that provide novel opportunities, and new risks, for health care provision (Siddiqui, Miller, McKinley, Maduekwe, & Schwaitzberg, 2014).

If telehealth is to be sustainable, it must be both effective (clinically appropriate) and efficient with regard to service delivery. Overall, the complexity of telehealth has been underestimated (van Dyke, 2014). Thus, it has been difficult to establish the effectiveness and overall cost efficiency of telehealth service delivery because the financial benefits are inconsistent and may be specific to situations, locations or stakeholder groups.

Globally governments are grappling with rising health care costs. The United States has the highest expenditure in healthcare, spending US$2.8 trillion in 2012. The UK spent £144.5 billion in the same period (Yang et al., 2015). Challenges include aging populations and more chronic disease (Yang et al., 2015). At the same time, technology is disrupting the way health care is delivered (Topol, 2015).

These challenges suggest a need for rigorous research that carefully considers both the context and the myriad of stakeholders, processes, systems (including technology) and costs, to better understand the practicality of telehealth services from the perspectives of the clinicians who deliver health care. This understanding provides insights into how a key stakeholder, the clinician, can adopt telehealth service working from anywhere in a clinically effective and financially sustainable way.

Health care delivery facilitated by technology is a complex endeavor involving multiple stakeholders and many challenges. Careful consideration of both the choice of technology and technology support that facilitates telehealth for both the patient and the clinician is the first criterion for successful telehealth adoption. The second criterion involves funding incentives for clinicians and appropriate funding for telehealth consultations. Analysis of changes in roles, responsibilities and skills of clinicians adopting telehealth consultations is the third criterion. The fourth criterion is the recognition of the necessary changes in business processes and workflow that result from telehealth adoption.

In *The Patient Will See You Now*, Topol (2015) argues that the smartphone is the Gutenberg moment (Gutenberg's printing press enabled the production of books for the masses for the first time in the 1450s) for medicine because medicine is becoming digitized. Computers are increasingly used for diagnostic tasks that do not necessarily require a visit to a clinician. For example, the Apple ResearchKit platform uses iPhone apps to gather data from patients for medical research into conditions such as autism, epilepsy, and melanoma. The ResearchKit platform is designed to remotely transfer medical data such as blood pressure, heart rate and body weight (Kang, 2016).

Other enablers of telehealth include user skills and training, the development of appropriate medical and ethical protocols, and health care providers' acceptance and collaboration. The development of appropriate business models and supportive legislative and policy frameworks also enable the successful uptake of telehealth (V. A. Wade, Eliott, & Hiller, 2014). Conversely, barriers to sustainable telehealth delivery include the lack of technical support; quality, ethical and legal concerns; absence of protocols for telehealth delivery; the lack of appropriate business models to support telehealth delivery; and regularity barriers in licensing and standards (V. A. Wade et al., 2014). Moreover, clinicians need to have the clinical expertise to ascertain if a patient is suitable for telehealth (Sabesan & Kelly, 2015).

This chapter examines the issues relating to the provision of telehealth services from the perspectives of the workers (clinicians) engaged in delivering these services from anywhere. The next section

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