

# Chapter 14

## Wireless Connected Health: Anytime, Anyone, Anywhere

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### ABSTRACT

*Wireless connected health is the most current, inclusive phrase to describe healthcare that incorporates wireless technologies and/or mobile devices. It represents one of the fastest growing sectors in the global mobile and wireless ecosystem, with extraordinary change occurring daily. According to the World Health Organization, 80 percent of people in greatest medical need live in low- to middle-income countries. Not enough has been written about how they will afford wireless connected health, or how it can bring positive benefits to patients everywhere with non-lethal chronic illnesses. It also remains to be seen whether people outside the healthcare industry, without any special interest in science, technology, medicine, or illness prevention, will adopt new and future behavior-changing connected health technologies. This chapter provides a current overview of the global health crises created by noncommunicable diseases, explains the evolution of the global wireless connected health sector, includes information about BRICS nations, and offers observations, insights, and recommendations from a socio-economic and political standpoint for responsible and effective future industry growth.*

### INTRODUCTION

Wireless connected health is the most current and inclusive phrase to describe personal healthcare that incorporates mobile devices and/or wireless technologies. It represents one of the fastest growing sectors in the mobile and wireless ecosystem, with extraordinary change occurring daily.

Today, simply by using their smartphones, people around the world can watch their diets, track their exercise, log their sleep, access

motivational fitness coaches and/or programs, and do myriad other things to support lifelong wellness.

Rapid advances in technology now make possible a global initiative to ultimately eradicate disease by empowering individuals to make informed, positive lifestyle choices that are disease-preventive. This bodes well not only for increased human longevity, but also, and perhaps even more importantly, for improved quality of life (WHO, 2013a).

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The early literature and focus concerning the advent of wireless connected health addressed the successful linkage of systems and networks so machines could communicate with machines, and data—specifically, a patient’s electronic health record (EHR) – could be accessed ubiquitously (Chronaki et al., 2007).

Current literature (Sejdić et al., 2013) focuses on the engineering and software behind new and innovative wireless medical devices and mobile medical applications (MMAs).

Furthermore, now that a variety of wireless medical devices and MMAs have entered into progressive clinical practices and mainstream teaching centers, a growing body of literature has begun to examine the clinical performance of products already on the market. Weight loss, weight management and weight gain all have mobile-inclusive protocols (Turner-McGrievy and Tate, 2011; Patrick et al., 2013; Carter et al., 2013; and Cardi, Clarke & Treasure, 2013).

Behavioral sciences and mental health have noteworthy studies and pilot programs that address everything from bipolar disorder (do patients prefer using mobile phones for charting moods or traditional pen-&-paper diaries?) (Depp et al., 2012), to psychosis (Palmier-Claus et al., 2013), to depression, anxiety and stress (Proudfoot et al., 2013), to the effectiveness of a suicide prevention app for indigenous Australian youths (Shand et al., 2013).

Two excellent studies (Spyridonis, Ghinea and Frank, 2013; Kristjánsdóttir et al., 2013) address pain as a significant component of many chronic illnesses and how wireless and mobile technologies can help alleviate this aspect of noncommunicable chronic disease (NCD).

Unfortunately, too few papers focus on ways the changing healthcare landscape affects the end-user as a patient, beyond becoming a personal source of biological data points. One that does is “Telecare, Surveillance, and the Welfare State” (Sorrell & Draper, 2012), which examines whether or not bringing a variety of health and

wellness monitoring devices into the sanctity of the home strips individuals living there of autonomy, depersonalizes their care and, as an unintended consequence, actually increases their isolation.

Another excellent paper, entitled “How places matter: Telecare technologies and the changing spatial dimensions of healthcare,” (Oudshoorn, 2012, p.124) argues that “Places are not only important because assumptions about the contexts of use are inscribed in technologies.... They also matter because places shape how technological devices are used, or not, and (de)stabilize the specific identities of technologies. Equally important, technologies participate in redefining the meaning and practices of the spaces in which they are used and...introduce new spaces in which people and objects interact.” The author goes on to say, “The idea that places matter thus provides an important point of departure for an investigation of how reciprocal relationships between people, places and technologies enable or constrain the identities of users, places and technologies (Oudshoorn, 2012, p. 124).”

Clearly, wireless connected health already has begun to help many people with chronic illnesses. Four chronic illnesses typically used to illustrate its benefits – diabetes, hypertension, heart disease and asthma – are such that if a patient ignores unusual, fluctuating symptoms, results can prove catastrophic or fatal. New wireless medical devices and apps make regular surveillance of signs and symptoms remarkably easy, and they empower these patients to enjoy better health as a result of having better tracking systems to prevent undesired health crises.

However, not enough has been written about whether or how wireless connected health can bring significant, positive outcomes to resistant patients and those with lesser known and rarely fatal chronic illnesses...patients who tax the global healthcare system with a never-ending variety of very real, perplexing ailments that defy easy diagnosis or standard remedy.

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