Chapter 25
Mobile Health:
Precision Post-Operative Wellness Monitoring Solutions

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ABSTRACT

Today most people have at least one smart phone irrespective of socio-economic standing. Such a penetration of mobile phones has enabled mobile health to rapidly develop over the last 5 years. There are many benefits to patients and clinicians afforded by mobile health including the convenience of any time anywhere access to data and information and the possibility to monitor so that critical issues can be caught early. One key area is in the post discharge phase as patients return home to ensure they are making good progress. This chapter discusses developments of mobile health solutions and precision post-operative wellness monitoring solutions.

INTRODUCTION

Mobile Health

With the current globalization, smartphones have become an integral part of people's lives with their use being applied in many industries. The healthcare system is certainly not left behind in adopting mobile technology in their treatment approaches (Stephanie et al., 2017). Mobile health is enough proof of mobile technology's importance in the healthcare system (Robbins et al., 2017) MHealth applications have dominated the health care landscape due to their capability to simplify access to care and deliver greater care experience from both the health professionals' and the patient's perspectives (ibid). The mobile health applications have not only developed into a vibrant ecosystem or a market that is not only dynamic but also provides massive potential (ibid). With the adoption of smartphones in the medical care sector proliferating, the business opportunity for MHealth is great (ibid).

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The fast-growing digital sector, as well as the slow, paced healthcare sector continues to collide thus bringing disruptive alterations to the market (ibid). However, the MHealth applications market has been increasing steadily over the last few years with the emergence of the novel technologies, novel business models as well as novel workflows that are revolutionizing the healthcare industry (Stephanie et al, 2017). Shareholders within the healthcare sector are giving life to these revolutionary MHealth solutions. The innovation of the mobile technologies is accelerating fast and maintains a great promise with evidence of these tools playing a positive role in costs of care as well as patient outcomes (ibid).

Statistics on Mobile Health

The number of mobile health applications in the present market has proliferated substantially. There are now more than 318,000 health applications available on the top app stores across the globe, approximately double the number of apps which were available in 2015 with more than 200 apps being added in every single day (Källander et al, 2013). The worldwide MHealth apps market is estimated to be valued at 28.320 billion dollars as of 2018 and is postulated to reach 102.35 billion dollars by 2023 (Källander et al, 2013). The core driving aspects motivating the growth of the MHealth market is the up surged adoption of mobile phones and the continued heavy investments into the digital medical market (ibid). Källander et al (2013) assert that healthcare consumers continue to show a robust use of digital technology, with numbers increasing annually. Actually, nearly 75% of users surveyed stated that technology is essential to managing their health (ibid). This study also recorded increases across the board in the use of smartphones, social media, online communities, electronic health records, and wearable devices (ibid). Particularly, approximately half of the healthy population (48%) is consuming MHealth apps compared to 16% consumption in 2014 (Källander et al, 2013).

Healthcare users are taking advantage of the fact that they can use their smartphones anytime and anywhere to access care (Robbins et al., 2017). In actual fact, nearly 79% of respondents are more likely to identify a caregiver who enhances them to conduct healthcare interactions whether online or on smartphones (ibid). Moreover, 50% of consumers are promising to leave their current providers for one that undertakes better technology (Robbins et al, 2017). With this constant and widespread adoption of mobile technologies, mobile technology has evolved as a novel subfield of health (ibid). As the eHealth is widely focused on information and communication technologies, mHealth looks forward to discovering more into mobile devices as well as wireless communication (ibid). Up to this time, no standardized definitions for MHealth have been recognized (ibid). However, WHO defines MHealth as the use of smartphones, personal digital assistants, other wireless communications, and monitoring devices to aid health and public health practice (ibid). It was postulated that 50% of persons in remote areas across the world would own mobile phones by 2012 while 500 million individuals would have access to these mobile phones MHealth applications by the year 2015 (Carroll et al, 2017). Accordingly, MHealth is likely to carry all the promises of Electronic Health (ibid).

From 2015, approximately 64%, which amounts to about two-thirds of the United States citizens owned smartphones (Carroll et al., 2017). This is a proliferation from a 35% recorded in 2011 and it is estimated that 90% of the global population will own a smartphone by 2020 (Carroll et al, 2017). According to the current UK data, it is revealed that smartphone usage is up-surging as 66% of the adult population had possession of a mobile phone in the year 2015 (ibid). This is an upsurge from 61% in the year 2014 (ibid). Smartphone possession is higher among younger individuals with about 77% possession for those within the 16-24 age brackets (Carroll et al, 2017). Although smartphones possession