Chapter 4

Supporting a Value–Based Healthcare Paradigm With Digital Health and Wellness Personalised Monitoring Solutions

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ABSTRACT

Especially in the US, many are advocating for the incorporation of a value-based system for healthcare delivery including bundled payments for services in an attempt to address escalating healthcare costs. The following proffers the role for digital health solutions to support health and wellness management and the need to develop suitable sustainable business models. However, this approach brings a focus onto comorbidities and chronic conditions, which often need to be addressed or at least better managed before surgery can take place. This opens up the opportunity to examine the potential for digital health solutions such as mobile apps and serious games to provide an enabling or support role for individuals to better manage their chronic conditions. It also brings up the need for better, flexible models to assist health and wellness solution development.

INTRODUCTION

In the US, there is a move towards a value-based system (Lynn, 2016; Zuvekas and Cohen, 2016; Rauh et al., 2013; Bozic, 2016;), in which critical components include bundled payments and clearly defined care paths which in turn dictate care processes (Rauh et al., 2013; Bozic, 2016; Kaplan and Porter, 2011; Porter and Tiesberg, 2009; Porter and Lee, 2013; Porter, 2010; Betbeze, 2016; Bracy, 2016). This perspective is also being embraced in other OECD countries such as the UK, throughout Europe and Australia (Gray, 2018; Elf et al., 2017; Wickramasinghe et al., 2019). This is interesting and significant because US, UK, western Europe and Australia all have very different structured healthcare delivery systems and consequent payment mechanisms, thus, for all these countries/regions to be seriously evaluating and incorporating some or all aspects of a value-based care paradigm suggests that this paradigm will have a significant and far reaching impact on healthcare delivery moving forward.

Such a value-based model of care has been enabled by the introduction, adoption and increased penetration of electronic medical records (EMRs) into the care process. These digital health solutions serve to provide essential data and information necessary to facilitate the design of appropriate care paths and the calculation of bundled payments for specific care processes (Hero et al, 2016; Porter and Lee, 2013). However, the system is not without its own challenges, because it tends to take specific data on outcomes and cost and then apply them to general cohorts which can prove problematic and troubling especially for individuals with chronic conditions (Wickramasinghe et al., 2019; Elf et al.,2017). Moreover, some believe that the term value is being confused with efficient, and while the approach suggested by a value-base paradigm typically leads to the realization of greater efficiencies this does not necessarily translate into greater value for all healthcare stakeholders, most especially the patient (Gray, 2018). In this chapter, it is not possible to unpack all the issues of value-based care; however, the focus is on greater equity for patients i.e., subscribing to the WHO directive healthcare delivery for all (WHO, 2019). In particular how technology solutions can be used to support individuals with chronic disease such as diabetes within a value-based paradigm.

What is the Issue?

Assisted largely by federal policies and initiative such as President George W. Bush's 2004 Executive Order enabling eHealth, and the subsequent ARRA/HITECH legislation and Meaningful Use program (Hsu et al, 2005), over the last 10 years in the U.S. the adoption, and use of EMR has significantly increased. This in turn has resulted in the availability and use of significant amounts of captured and generated clinical data. This data is being used by clinicians to provide appropriate care to their patients, which is expected to lead to optimal clinical outcomes. A key aspect of this approach is centred around minimising complications and adverse events as these typically lead to expensive healthcare interventions and unplanned readmissions.

Hence, these data are being used to scrutinise cost, quality and calculate risk assessments at a specific point in time (Lynn, 2016; Zuvekas and Cohen, 2016; Porter and Lee, 2013; Bracy, 2016). In the context of a healthcare system that is facing substantially increasing costs, many encourage the move from a focus on volume to value (Porter and Tiesberg, 2009; Porter and Lee, 2013; Porter, 2010; Betbeze, 2016). This shift in focus is defining appropriate care paths and narrow definitions of risk and then applying them broadly to patients presenting for specific treatments, such as a knee arthroplasty (Porter, 2010; Betbeze, 2016; Bracyc, 2016). Specifically, such an approach often translates into patients being told

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