

# Chapter 11

## Success Dimensions of ICTs in Healthcare

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### ABSTRACT

*During the last decades, the call for Information and Communication Technologies (ICTs) in healthcare has been augmented to endow with healthcare services at a global scale and to trim down medical errors that cost human lives. Enriched with explosive computing and high communicating power, ICTs like Internet, mobile telephony, and other enabled gadgets plays a prominent role in our day-to-day activities. With the potential to provide access to service for patients in difficult-to reach areas and facilitating medical record keeping and information sharing are the main considerations of leveraging ICTs in realm of clinical care. The insurgence of these innovating technologies into healthcare sectors is not only blurring the boundaries for the emergence of other new technologies but also causing a paradigm shift in providing acute and preventative care in public health. The main goal of this chapter is to offer readers an insight into how the emergence of ICTs have transformed healthcare sector by delivering cost-efficient and quality of care to patients.*

### INTRODUCTION

In the era of information age and globalization, Information and Communication Technologies (ICTs) are considered to have a catalyzing effect in delivering efficient, timeliness and quality of healthcare services (Lindberg, Nilsson, Zotterman, Soderberg, & Skar, 2013). Being referred to as a ‘key instrument’ in healthcare, ICTs facilitates an effective electronic means for communicating, processing and transformation of information with the intent to improve human health. Since, more and more patients are seeking and prioritizing quality of healthcare in their lives, innovations in and use of emerging ICTs

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in healthcare sectors has considerably increased over the last ten years. Active patient involvement, care process management and remote care are some of the notable benefits from these innovations in public health.

Prospective applications of digital technologies in healthcare sector cannot be undervalued. Concerted efforts have been made worldwide to kindle the use of ICTs in healthcare. With the increase in the number of patients suffering from chronic diseases (such as diabetes mellitus, cardio-respiratory diseases), modern healthcare services are over-powered with high annual expenses. Addressing to these financial issues, ICTs allocate cost-effective patient treatment and health promotion. From clinical data digitalization to appointment reminders by SMS alerts, the use of ICTs is increasingly mounting around the world with intend to reduce health expenditure and to raise patients and lay personnel involvement. Although the implementation of ICTs in healthcare is an expensive measure, but possesses a high cost-saving potential benefits in the long run.

## **BACKGROUND**

Effective communication and reliable information can be well thought-out as essential elements in area of public health. According to (World Health Organization [WHO], 2004) technology forms the backbone of any organization's services to diagnose, prevent and treat illness. Healthcare organization in the vein to maintain healthy lifestyles and healthy minds seek for more optimal solutions and strategies to increase their medical services. As more and more patients are prioritizing the quality of care in their lives, healthcare industries are persistently placed under giant demands to enhance both infrastructure and information- handling abilities.

With the widespread increase in chronic diseases such as chronic obstructive pulmonary disease, cardiovascular disease (mainly ischemic heart disease), diabetes mellitus, certain cancers (stomach, primarily lung and breast cancer) in various developed countries; healthcare organizations attributed sedentary lifestyle and genetic predisposition of the population to strictly linked with the health damaging behaviors of modern age. Traditional medical approaches focused on the treatment of diseases, however when referred to primary prevention in the modern age the concepts are renewed. In primary prevention, innovation focuses firstly on modifying risk factors that includes accidents; family history; work environmental factors etc and are highly dependent on individual behaviors and lifestyle management (WHO, 2008). Following the similar vein of primary prevention, there are different emerging models that made a big splash towards changing trends in Healthcare Information Technology [HIT].

Technological change is crucial for incessant modernization of healthcare field. The main healthcare drivers in the era of 1960s were Medicaid and Medicare. Since the mainframes and storage were so bulky and costly, health organizations typically have a shared mainframe environment and shared accounting systems. During 1970s there prompted a need to slighter the communication gap among health organizations and to set up isolated departmental systems such as pharmacy, clinical labs etc. Smaller computers were installed in single departments with improved terminals and connectivity, thus proliferating different departmental systems. The era of 1980s was heavily driven by emerging networking solutions (e.g. DRGs) and non-traditional software applications that had entered the market. As a result of this driven, Information Technology (IT) in healthcare hospitals started incorporating diverse software applications

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