

## Chapter 32

# Analyzing the Role of Health Information Technology in Global Health Care

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### ABSTRACT

*This chapter explains the perspectives on global health, the overview of health information technology (health IT), the applications of electronic health record (EHR), and the importance of health IT in global health care. Health IT is the area of IT involving the design, development, creation, utilization, and maintenance of information systems for the health care industry. Health IT makes it possible for health care providers to better manage patient care through the secure use and sharing of health information. Effective health IT can lower costs, improve efficiency, and reduce medical error, while providing better patient care and service. The chapter argues that utilizing health IT has the potential to enhance health care performance and reach strategic goals in global health care.*

### INTRODUCTION

The increasing adoption of the Internet-based technologies in modern health care has been very beneficial and has led to the innovative approach to health care practice (Spinelli & Benevolo, 2016). With the increasing development in the Internet, health information technology (health IT) can assist the health care professionals in managing clinical tasks and conducting research (Hsu et al., 2015). Health IT has the potential to improve the quality, efficiency, outcomes, patient safety, and reduce the cost of health care (Ahlan & Ahmad, 2014). Health IT has the potential to significantly improve the quality of health care (Dunnebeil, Sunyaev, Blohm, Leimeister, & Krcmar, 2012) and can be organized to increase the physical, social, and cognitive stimulation in health care settings (Goldwater & Harris, 2011). The impact of health IT on the quality of health care delivery is a topic of significant importance (Bardhan & Thouin, 2013) and is dependent on how it is used by nurses and health care providers (Spetz, Burgess, & Phibbs, 2014).

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With advances in health IT, the processing of health care procedures can be implemented more efficiently (Passi & Zhao, 2015). Health IT plays an essential role in the provision of health care (Koumaditis & Themistocleous, 2016). Health IT collects the data from the health care sector and other relevant sectors, analyzes the data, and converts the data into information for health-related decision making (Amorim & Miranda, 2016). Decision making is an integral aspect in health care routine that the ability to make the right decisions at crucial moments can lead to patient health improvements (Osop & Sahama, 2016). Therefore, the need for optimizing health IT is of great essence in the health care industry (Bonney, 2016).

Rapid increase of service demands in health care contexts today requires a robust framework enabled by health IT solutions as well as real-time service handling in order to ensure superior decision making and successful health care outcomes (Moghimi, Wickramasinghe, & Schaffer, 2016). Health IT gives patients and health care professionals electronic access to patient records and to health-related databases (Bai, Dai, & Li, 2014). In recent years, health care providers have begun to organize health IT solutions and the Internet to reach patients in the transformative ways (Tiago, Tiago, Amaral, & Silva, 2016). The strong influx of health IT puts the increased array on the health care system and its various decision makers (Nedlund & Garpenby, 2014).

Health IT has the potential to improve both the quality and effectiveness of health care providers (Laflamme, Pietraszek, & Rajadhyax, 2010) and can enable the automation, integration, and the management of clinical and administrative functions in global health care (Yang, Kankanhalli, & Chandran, 2015). The health care facility must adapt to the continuous development in modern technologies in order to generate the health care-related knowledge by data and ensure quality treatment to patient (Peixoto, Domingues, & Fernandes, 2016). Advances in computer technology and capacity combined with lower start-up costs allow developing countries to achieve greater impact when they initiate health IT (Shih, Pan, & Tsai, 2009).

This chapter aims to bridge the gap in the literature on the thorough literature consolidation of health IT. The extensive literature of health IT provides a contribution to practitioners and researchers by describing the theory and applications of health IT in order to maximize the health care impact of health IT in global health care.

## **BACKGROUND**

Over the years, IT and computer applications have been widespread among all fields, including health care (Alpuim, Esteves, Pereira, & Santos, 2016). Prior research dealing with the productivity impact of health IT has mostly focused on the impact of IT investments on hospital-level performance (Thouin, Hoffman, & Ford, 2008). In the hospital setting, two of the most important technologies are the computerized patient records and the medication administration systems (Coye & Bernstein, 2003). The Internet is increasingly utilized by individuals and health care administrators in the health care industry (Ybarra & Suman, 2006). Clinical information system improves hospital output in the short run while administrative system has a detrimental impact on hospital output in the long run (Menon, Yaylacioglu, & Cezar, 2009).

The critical enabler in the health care reforms is the adoption of health IT solution (Muhammad, Teoh, & Wickramasinghe, 2013). Health IT leads to the improvement of the health care facility both regionally and globally (Das, Maji, Dey, & Dey, 2014) and offers the great opportunities in long-term care (Rada, 2015). The application of health IT to support self-management extends the reach of the provider orga-

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