

## Chapter 52

# Mastering Electronic Health Record in Global Health Care

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### ABSTRACT

*This chapter describes the overview of electronic health record (EHR); the trends and issues with EHR; EHR and clinical decision support system (CDSS); the trust and privacy concerns of EHR systems; and the significance of EHR in global health care. EHR systems are very important in health care settings and have the potential to transform the health care system from a mostly paper-based industry to the one that utilizes the clinical data and other pieces of information to assist health care providers in delivering the higher quality of care to their patients. EHRs and their ability to electronically exchange health information can help health care providers effectively provide higher quality and safer care for patients while creating tangible enhancements in global health care.*

### INTRODUCTION

Electronic health record (EHR) contains a diverse set of information types, including patient demographics, symptoms, vital signs, laboratory tests, and treatments (Huang, Dong, & Duan, 2015). EHR is an important part of an efficient and sustainable health system (O'Sullivan, Billing, & Stokes, 2011). EHR systems promise to optimize the delivery of high-quality health care in health care settings (Halford, Obstfelder, & Lotherington, 2010). The integrated EHR that makes the patient's clinical data instantaneously available to all health care providers throughout a given episode of care, regardless of the service location or health care provider, holds great promise (Sherer, Meyerhoefer, Sheinberg, & Levick, 2015). Clinical decisions are taken based on medical records made electronically or by hand in paper, medical examinations, and physical evaluations having the close contact with the patient (Peixoto, Domingues, & Fernandes, 2016).

The rapid development in information technology (IT) through the utilization of data-intensive EHR can enhance the health care processes (Taweel, 2016). With the advent of EHR, patient health information has become more widely available to health care providers and has broadened its health care utilization

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beyond individual patient care (Caine & Tierney, 2015). EHR can contain the medical history and manage the medical treatment plans for patients in an effective manner (Amorim & Miranda, 2016). Use of the EHR can improve the quality of health information available to the medical team caring for a patient in any health care organization (Yontz, Zinn, & Schumacher, 2015). Xhafa et al. (2015) indicated that with the development of cloud computing, EHR system has appeared in the pattern of patient-centric perspective, in which patients can store their personal health records at a remote cloud computing server and selectively share them with physicians for convenient medical care.

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

## **BACKGROUND**

In recent years, one of the most important applications of IT in the field of health care is EHR (Farzandipour, Sadoughi, Ahmadi, & Karimi, 2010). A growing capacity of IT in the collection, storage, and transmission of information has added a great deal of concerns since electronic records can be accessed by numerous consumers at various locations (Farzandipour, Ahmadi, Sadoughi, & Karimi, 2011). The digitization of health care typically has emphasized electronic records for patients (Raghupathi & Kesh, 2009). Advancements in information and communication technology (ICT) have led to the development of various forms of EHR to support general practitioners and health care providers in capturing, storing, and retrieving the routinely collected medical records and clinical information for the optimal primary care and translational research in modern health care (Bonney, 2016).

The increase in EHR implementation in all treatment venues has led to the greater demands for integration across health care practice settings with different work cultures (Sherer et al., 2015). EHR implementations may present challenges to patient safety and health care workflow (Colligan, Potts, Finn, & Sinkin, 2015). With growing adoption and use, EHR represents a rich source of clinical data that offers many benefits for secondary use in biomedical research (Rasmussen, 2014). The collected health care data plays a crucial role to ensure the effective statistical analysis in the health care organizations (Arfaoui & Akaichi, 2016). Wuyts et al. (2012) indicated that EHR systems are being developed to enable the electronic storing and sharing of medical data among health care practitioners. Patient records are the central parts of health care and hospitals (Bossen, 2011). EHR presents an opportunity to access the large stores of data for health care research (Griffith et al., 2015).

Many patients are often associated with various types of health-related records, needing care and attentions (Hamunyela & Iyamu, 2016). EHR includes demographics, medical history, medication and allergies, immunization status, laboratory test results, radiology images, and billing information (Bai, Dai, & Li, 2014). When EHR improvements are planned, it is important to recognize the diversified needs of the health care professionals who deliver care (Bramble et al., 2013). The coordination and communication tools provided by the EHR are the important source of various opportunities for the effective translation of clinical interventions (Fraser, Christiansen, Adsit, Baker, & Fiore, 2013). EHR includes sensitive health information and if it is integrated among health care providers, health care data can be accessible from different sources (Win & Fulcher, 2007).

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