

## Chapter 3

# Smart Healthcare Administration Over Cloud

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### **ABSTRACT**

*Cloud computing is an emerging technology that is expected to support internet-scale critical applications, which could be essential to the healthcare sector. Its scalability, resilience, adaptability, connectivity, cost reduction, and high-performance features have high potential to lift the efficiency and quality of healthcare. With the widespread application of healthcare information and communication technology, constructing a stable and sustainable data sharing circumstance has attracted rapidly growing attention in both academic research area and the healthcare industry. Cloud computing is one of long dreamed visions of healthcare cloud (HC), which matches the need of healthcare workers, information sharing directly to various health providers over the internet, regardless of their location and the amount of data. This chapter proposes a cloud model for health information sharing and integration in HC and looks into the arising challenges in healthcare.*

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## **INTRODUCTION**

With the development in healthcare and economic fields, more number of medical records are generated. There is an urgent need and demand to improve the levels and standards of modern health-care records management by using innovative technology. The objective of this paper is to introduce the concept of Cloud Computing and discuss the challenges of applying Healthcare Cloud (HC) to improve the Health Information Science research. With the new concept of Cloud Computing emerging in recent years, more and more interests have been sparked from a variety organizations and individual users, as they increasingly intend to take advantage of web applications to share a huge amount of public and private data and information in a more affordable way and reliable IT architecture.

More specifically, the medical and health information system based on the cloud computing is desired, in order to realize the sharing of medical data and health information, coordination of clinical service, along with the effective and cost-containment clinical information system infrastructure via the implementation of a distributed and high-integrated platform.

Mobile devices are growing in terms of utilization in our daily life to voice conversations and video chatting with others. Especially the smart phones became an important tool in our daily activities in e-commerce, IT industries. Even though mobile device is capable of enough to handle high end applications but still suffering with limited resources such as short battery lifetime, storage and processor. These changes help users to make environment where all devices share resources to run application efficiently.

The conventional computing only deals with the compute and process computation tasks. The modern technologies got birth to satisfy user requirements; Big data, networking, cloud computing, fog computing, mobile cloud computing, IOT, the user will always require modern infrastructure to achieve increasing demand on both mobility and connectivity (Goswami, 2013). Among many technologies mobile cloud computing became a popular model (Zimmerman, 1999). Mobile computing allows many devices interacting with other mobile devices through network technologies (Wi-Fi and 4G). The mobile devices have many advantages like portability and mobility features. The mobile computing is integrated with cloud computing technology in order to form new technology called as MCC (Bahwairath, Lo'ai, Tawalbeh, Benkhelifa, Jararweh, & Tawalbeh, 2016). The MCC can

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