

# Emerging New Era of Mobile Health Technologies

Young-Taek Park, PhD

Research Institute for Health Insurance Review Et Assessment, Health Insurance Review Et Assessment Service, Wonju, Korea

The rapid development of a variety of new technologies is making a huge impact on healthcare fields. One of those technologies is mobile health (mHealth) systems. There are various definitions of mHealth. For example, mHealth has been defined as “mobile computing, medical sensor, and communication technologies for healthcare” [1]. The Global Observatory for eHealth of the World Health Organization defines mHealth as “medical and public health practice supported by mobile devices, such as mobile phones, patient monitoring devices, personal digital assistants, and other wireless devices” [2]. However, these definitions of mHealth are not universally accepted [3] as of yet. Alternatively, mHealth may mean the use of mobile devices to monitor or detect biological changes in the human body, while device management entities, such as hospitals, clinics, or service providers, collect data and use them for healthcare and health status improvement.

In Korea, mHealth has been adopted in various healthcare settings, such as hospitals and clinics since the 1990s. It is now commonly used for health or healthcare; however, it still is in an early stage of development [4]. In the United States, 58% of hospitals have mobile optimized patient portals, and 47% of hospitals are looking to expand connected health technologies in 2015 [5]. It is a good solution and tool for the purpose of collecting and providing a variety of information on patient health and vital status to medical providers. An exemplar benefit of mHealth is that it is able to enhance the continuity of care through better maintenance of patient

medical records [6]. Patients are also able to reduce their direct and indirect healthcare costs through reduction of the need for healthcare clinic visits or hospitalization [7,8].

Regarding mHealth, there is an international conference, “mHealth Summit”, which was renamed “the Connected Health Conference” in 2015. The 8th international conference will be held from December 11 to 14, 2016 in Washington D.C. [9]. Although the meeting will deal with various subjects regarding information and technology, the title of the conference reflects that mHealth is important in modern healthcare settings and industries. In the meeting, various ideas, new technologies, and some case study results will be presented and incorporated into performance workshops in front of many potential guests and consumers in order to show their excellent ideas. New technology armed with new ideas should be encouraged to be developed further and there are many areas that are undeveloped and yet to be developed as a “Blue Ocean” [10]. They should be used for good healthcare practices and to decrease healthcare costs.

Although mHealth has a growing market share and rosy prospects, there are several issues or challenges to be clearly defined and clarified. First, there is a difficulty in differentiating whether the devices utilized in mHealth implementation are considered as medical devices or some other wellness equipment or health products. For developers and the individual users of mhealth devices, we need to define the differences between medical mHealth systems and other health monitoring systems. It would be great to see a new definition of mHealth that incorporates their differences. Second, mHealth requires solid evidence-based mHealth outcomes. It is necessary to investigate the impacts of mHealth on health and healthcare improvement through empirical data with sound research methods. The findings would help the implementation of new technology dispersed into health-

care industries. Although several investigations have shown that mHealth contributes to improved healthcare for non-communicable diseases [11], few quantitative studies have been reported in academic journals due to a lack of solid data showing its effectiveness and efficacy [12,13]. Third, it may be necessary for each nation to think about providing insurance coverage or funding for the use of the systems if there are any significant health outcomes. It would improve the quality of healthcare by reducing unnecessary care with effective healthcare delivery. Fourth, each nation needs to cooperate to set up international standards on mHealth harmonization reflecting its local situations and to guide good technology standards to be imbedded into government rules and regulations. Fifth, we need international cooperation with respect to sharing of research and knowledge. These efforts would result in cost savings and healthcare quality improvement. Finally, there are other issues we have to deal with or confront in relation to mHealth, such as privacy and data security [14].

When these improvements are realized, mHealth will become a more useful tool for the provision of better healthcare. The frequent use of mHealth would also help strengthen mHealth-related healthcare device industries.

All the editorial board members of the Healthcare Informatics Research (HIR) journal expect to observe more sharing of meaningful research results on mhealth with other international fellows. This in turn will contribute to the development and success of mHealth. We will also do our best to actively seek and publish research results on mHealth in HIR and let the journal be an arena of knowledge sharing on mHealth.

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