

# Editorial

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## mHealth: The Emerging Sub-segment of eHealth

Chances are that you may be reading this document on your favorite smartphone or tablet. The fallout of the phenomenal explosion of information and communication technology (ICT) has impacted us all in one way or another. An interesting by-product of this revolution is the relatively recent development of the 'mobile health space' comprising of smartphones, tablets, phablets, PDAs or other touch-enabled devices capable of running sophisticated operating systems on a chip, connecting to the internet wirelessly, enabled with powerful hardware featuring high-resolution cameras and high-definition displays in addition to providing basic functionality, such as calling and messaging.

The field of mobile health (mHealth), defined as 'the delivery of healthcare services via mobile communication devices,' broadly encompasses the use of mobile telecommunication and multimedia technologies in healthcare delivery. The prospects of combining a coin sized microscope to the camera of a smartphone to send high resolution images to remote locations for analysis or to collect reports from a sensor in a pill box to trigger notifications to the healthcare professional and the patient who missed out on a dose are very promising. For example, the MobiUS scanner, a portable ultrasound, costing a tenth of a full-fledged ultrasound unit, which plugs into smartphones and tablets, providing an instant scan image on the mobile device's screen. Such technology could be a real blessing in providing care outside of expensive settings and into locations where the immediate patient care may be needed. The 'mobility' offered by such devices increases the reach of healthcare. Many such innovative and novel devices are already in the pipeline and the possibilities seem limitless.

In addition to novel point-of-care devices, the market for mobile health applications (mHealth apps) and associated devices rapidly growing and is speculated to grow at a compound annual rate of 61% to reach \$26 billion in revenue by 2017, according to a recent report by research and markets. mHealth apps on mobile platforms have increased five-fold from 4000 to 20,000 apps on iOS and android platforms in just over a few years. These apps offer anything from information regarding your vital signs, diet and workout, possible diagnoses based on symptoms to inexpensive estimation of the levels of glucose, bilirubin, proteins, specific gravity, ketones, leukocytes, nitrites, urobilinogen and hematuria present in urine (uchekkit and app) with nothing more than a plastic cup, test strips and a smartphone. There are also quite a few applications for dentists primarily focusing on patient education, clinical note taking, imaging and appointment scheduling.

Rapid developments in applied augmented reality and newer sensor technologies may spur application development for smile evaluation, planning makeovers, implantology and even oral cancer detection. It must be emphasized here that when building mobile apps, it is important to develop the technology in partnership and accordance with the healthcare system, connecting and providing value to all parties involved, including the patients. Also, a key area of concern amidst these ground-breaking developments is the creation and implementation of guidelines, regulations and certification with regard to the quality, scientific relevance and benefit in order to ensure that neither patient safety nor patient's access to affordable care is compromised.

mHealth is here to stay and is steadily maturing as any new discipline would be, holding great promise to healthcare systems in developing countries especially by providing greater access to a hard-to-reach population as well as improving the capacity of health systems in such countries to provide quality healthcare. As healthcare professionals and potential end-users of these technologies, the onus is on us to embrace and incorporate these developments in our setting with an open frame of mind.

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