

THE USAGE OF MEDICAL APPLICATIONS IN IMPROVING HEALTH CARE

The aim of the article is to analyze the value and importance of the usage of medical applications and Ehealth technologies in improving the quality of patient care service.

Mobile medical devices and applications have become a part of daily life for million people all over the world. Medical smart technologies are used in health care settings, causing a rapid growth in the development of medical software applications (apps) for platforms. Innumerable apps are available to assist HCPs (health care professionals) with many important functions: information and time-management; health record maintenance and access; communications and consulting; reference and information gathering; patient management and monitoring; clinical decision-making; and medical education and sport training.

Health care professionals use smartphone or tablet for various functions. Medicine has been greatly affected by the availability of mobile devices. Numerous HCPs surveys show a high ownership rate of these tools, in both clinical practice and education.

The study found the popularity of mobile devices does not correspond with age and occupation, 80% of physicians ages 55 and older own a smartphone, 50 % of nurses ages 30-40 use a smartphone too. The results of the survey respondents, respectively, use mobile devices in a wide variety of clinical settings ranging from classrooms to hospitals. [6]

The high integration of mobile devices into clinical practice has been driven by the rising availability and quality of medical software applications (apps). Apps are software programs that have been developed to run on a computer or mobile device to accomplish a specific purpose. Faster processors, better memory, smaller batteries, and highly efficient open-source operating systems that perform multifunctions have paved the way for the development of a variety of medical mobile device apps for professional and personal use.

The ability to download medical apps on mobile devices has made a wealth of mobile clinical resources available to HCPs. A huge choice of apps that assist with answering clinical practice and other questions at the point of care are: medicine reference guides, medical calculators, clinical guidelines, support aids, textbooks, and literature search pages. There are also mobile apps that simulate surgical procedures or that can conduct simple medical exams, for example hearing or vision tests. Many mobile apps are not intended to replace desktop applications, but are meant to complement them in order to provide a resource that has the potential to improve outcomes at the point of care. The use of medical apps has become popular and widespread; 70% of medical school HCPs and students reported using at least one medical app regularly, with 50% using their favorite app daily. [7]

HCPs not only need to be mobile themselves, they also need to be able to communicate and collaborate with people in different locations. Mobile devices satisfy this need by offering multiple means of communication, including: voice and video calling; text, e-mail, and multimedia messaging; and video conferencing.

In a survey of medical school HCPs and students, around 80% of respondents described using mobile devices to communicate with colleagues about patient care via e-mail, telephone and text messages (skype, Viber, Whatsapp, etc). Mobile devices also allow rapid response to e-mail, allowing users to keep up with communication. Mobile devices can also be used by HCPs to aid long-distance patients by allowing them to text or send pictures regarding problems or questions. [2]

Social networking apps are useful device for encouraging discussion, consultations, and collaboration among HCPs. Facebook itself has been used to establish a forum for consultations, discussions, and mini-lectures.

MedPage Today is one of the most popular apps among HCPs for accessing breaking medical news, organizing news by interest. The MedPage Today app provides information about drugs, diseases, and medical procedures, as well as daily podcasts, videos, and news updates.

Mobile apps can also be used directly to conduct simple examinations for visual acuity or color blindness, as well as blood pressure or glucose level.

Other mobile apps, such as medical calculators, use standard formulas to make calculations to determine risk scores and other measures, such as body mass index (BMI), body surface area (BSA), and proper drug doses. Popular medical calculators include: Epocrates MedMath, MedCalc, Mediquations. [3]

Mobile devices play an increasingly important role in medical education as students and schools use more technology during training. They are used by health care students in a variety of ways: to log their experiences, to access information about medical conditions and drug treatment, to perform calculations, and to make basic notes. [1]

Mobile devices have become educational settings, they are a “learn anywhere” resource for accessing information or double-checking knowledge.

Moreover, many mobile apps for health care students can be used for knowledge assessment, such as case study quizzes or tests to help prepare for board examinations. The ability to access all of these resources has been shown to enhance student learning in the clinical environment and to increase student knowledge scores. [7]

Medical devices and apps are already helpful tools for HCPs. They are obviously expected to become even more widely incorporated into nearly every aspect of clinical practice and health care system. Although medical devices and apps certainly provide the HCP with many advantages, they are now being used without a thorough understanding of their associated risks, challenges and benefits.

REFERENCES

1. Aungst TD. Medical applications for pharmacists using mobile devices. *Ann Pharmacother.* 2013;47(7–8):1088–1095.
2. Payne KB, Wharrad H, Watts K. Smartphone and medical related app use among medical students and junior doctors in the United Kingdom (UK): a regional survey. *BMC Med Inform Dec Mak.* 2012 Oct;12:12

3. Lewis T. Apple launches dedicated ‘Apps for Healthcare Professionals’ collection. [IMedicalApps.com](http://www.imedicalapps.com). <http://www.imedicalapps.com/2013/02/apple-apps-healthcare-professionals-collection>. Accessed February 17, 2014.
4. Misra S, Lewis TL, Aungst TD. Medical application use and the need for further research and assessment for clinical practice: creation and integration of standards for best practice to alleviate poor application design. *JAMA Dermatol*. 2013;149(6):661–662
5. Ventola CL Mobile devices and apps for health care professionals: uses and benefits. *P T*. 2014 May;39(5):356-64.
6. Wallace S, Clark M, White J. ‘It’s on my iPhone’: attitudes to the use of mobile computing devices in medical education, a mixed-methods study. *BMJ Open*. 2012 Aug;2:e001099
7. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4029126/>