



Global Approaches In M-Health

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Abstract:

The current role of m-health in Public health of people is not clear in improving health systems globally. Objectives: To critically analyze the role of m-health in Public Health globally. Materials and methods: A Systematic Review of studies till December 2012 on m-Health was done. Results and Discussion: Various types of m-health areas are budding with good prospects in Public health improvement. Conclusions: A lot of benefits and utility of m-health in Public Health is possible Globally. This means we can improve health systems globally to provide quality healthcare to people.

Key words: Global Public Health, m- Health

1.Introduction

“M- health” is a term, which was coined by Professor Robert Istepanian.⁽¹⁾ According to M-Health Summit of FHIN- “*It is the delivery of healthcare services via mobile communication devices*”. The Pew Internet & American Life Project⁽²⁾ says, nearly 90% of U.S. adults have a mobile phone and > than 50% of them own a smartphone. African-Americans and Hispanic-Americans own mobile phones, and they search for health information using their mobile phone, and often download health-related apps compared with Whites. Smartphone owners in general, about 15% have reported using their device to search for health information. Half of smartphone owners can use their devices to get health information and one-fifth of smartphone owners have health apps. The great advantage with this technology is that we can explore the area of Public Health Mobile Messaging via m-health which is also recommended by Matt Grzeskiewicz et al in their seven guidelines to Great Public Health Mobile Messaging via m-health.⁽³⁾

2.Role Of Short Message Service (SMS) And Multimedia Message Service (MMS) In M-Health

The ability of mobile phones in short message service (SMS), provides us a new and innovative opportunities for disease prevention in public health.⁽⁴⁾ Mobile phone messaging by way of Short Message Service (SMS) and Multimedia Message Service (MMS), has penetrated into communicating the results from medical investigations to patients and this can give advantages of not only convenience to patients and healthcare providers but also reducing the waiting times for health services and healthcare costs to patients.⁽⁵⁾ Mobile Phone Messaging can also provide an important, inexpensive delivery medium for reminders for healthcare appointments. In one study it was found that, there was moderate quality evidence of mobile phone text message reminders to be more effective than no reminders, and low quality evidence of text message reminders with postal reminders as more effective than postal reminders alone.⁽⁶⁾ Although Email is also a popular and commonly used mode of communication, but its use in health care is not routine and areas explored in health care are the coordination of healthcare appointments and attendance reminders, but the effects of using email in this way are not well known.⁽⁷⁾

3. Mobile Video Technology – A Mobile Video-Based 3G Doctor Service

As shown in Figure 1 given below, a new technology called Mobile video can transform health education, motivate individuals to change their behavior and maintain healthier long-term lifestyle choices. One of the best ways to tackle the rising healthcare costs and loss of productivity associated with poor health and lifestyle choices in modern societies is to empower patients to help themselves and one of the best ways to do this is by delivering high-quality personalized content to their own personal mobile devices. Mobile video is one example that mobile and health will converge.



Figure 1: Mobile Video Technology

4. Reasons For Flourishing Of M-Health Globally

Recent rapid rise in mobile phone penetration in developing countries to large segments of the healthcare workforce; as well as the population of a country as a whole; along with greater access to mobile phones to all segments of a country; including rural areas coupled with high population growth and cheaper mobile availability in markets, along with the potential of mobile phones in lowering information and transaction costs for improvement in delivery of healthcare is certainly appreciable feature of this technology. Apart from that, the following factors, also makes mobile a more appropriate channel for delivering health care than any other mass media, e.g. cinema, radio, TV, even PC:

- Personal to the patient,
- Always with the patient,
- Always on
- Helping to provide social context, e.g. location.

- a high burden of disease prevalence,
- low health care workforce,
- large numbers of rural inhabitants,
- limited financial resources to support healthcare infrastructure and health information systems.
- Ability to call emergency services from a mobile at the scene of an accident instead of having to find a payphone.
- Patients, caregivers and medical professionals can use mobiles to access information or phone for assistance/advice from other patients, care givers or professionals, even by sending a picture message to help identify a rash.

5.Objective

To critically analyze the role and current status of m-health in Public Health globally.

6.Materials And Methods

A systematic review of studies from pubmed, cochrane database, United Nation Foundation and related websites till December 2012 on role of m-Health in Public health was done.

7.Result

7.1.Global Initiatives In M-Health

7.1.2.HHS (US) Public Health Programs In M-Health

The increased use of personal mobile devices for health information seeking reveals interesting opportunities in public health. The Department of Health and Human Services (HHS) in US has developed several mobile health programs geared toward public health, as given below⁽⁸⁾:

- National Library of Medicine (NLM) -a gallery of mobile apps and mobile-optimized websites to disseminate health information to the public, including “Health Hotlines” and several “Emergency Response” apps.

- PubMed Mobile and MedlinePlus Mobile - access to information on a broad range of topics including wellness and general health news on various mobile platforms.
- Centers for Disease Control and Prevention's (CDC, 2009) -mobile-optimized websites where the public can access health information using mobile devices: <http://m.cdc.gov/>.
- CDC Mobile Health Tips SMS program-sends health text messages to those who enroll.
- CDC partnered with HHS Office of the Assistant Secretary for Public Affairs (ASPA)- an SMS toolkit for emergency responders to have ready access to disaster-related text messages.
- National Cancer Institute (NCI) -for teens and young adults there is Smokefree TXT, a text-based program, and the smartphone app, QuitSTART, where adults can use the Smokefree QuitGuide, a native application which offers similar features.
- NCI -mobile-optimized websites, where the public can access cancer information using their mobile devices: m.cancer.gov.
- HRSA's (Find a Health Center) -a consumer-facing program/app in which the public can locate federally funded health center that can provide free or income-sensitive medical services.
- SAMHSA's (Treatment Locator mobile application)-provides the public with location information about mental health and substance abuse centers.
- Centers for Medicare & Medicaid Services (CMS) in working with states - develop mobile-facing initiatives, such as the mobile version of the InsureKidNow.gov web site.

8. Discussion

8.1. Global Status Of M-Health

M-health, like the mobile phone itself, is still in its early stages, but the close mutual interrelationship between wireless communications and healthcare is a century old. A lot of this is a credit to Nokia, which caught on to the potential of SMS from the start and made it easy to create/send a message by touch alone.

8.2. Today Global examples of m-health include⁽⁸⁾

- Giving midwives remote access to and the ability to update patient records via BlackBerry devices and digital pens, and enabling healthcare professionals to search for and match organs for transplant patients, both in the UK.
- In the Republic of Ireland, out-of-hours doctor cover is managed entirely via SMS.
- Medical students receive part of their education via mobile device.
- The UK's top doctors can send informational videos to patients via Harley Street World/3G Doctor.
- Increasingly medical schools e.g. Stanford (in the US); Leeds, UCL, Cardiff, and Manchester University (all in the UK) are making course materials and text-book resources available on mobile devices, either smartphones and/or tablet computers.
- Existing systematic reviews of M-health interventions, and various published protocols, focus on the application of specific devices (e.g. mobile phones or specific functions (e.g. text messaging) to individual diseases or healthcare fields (e.g. diabetes care or chronic disease management).

9. Real-Time- Biosurveillance- Program (RTBP) With The Help Of M-Health

The Real-Time Biosurveillance Program (RTBP) pilot, to monitor the health status of the country like India and Sri Lanka, involved digitizing all patient clinical health records with a mobile phone application, analyzing them in near real-time with an event detection software, and disseminating those adverse events, once again with mobile phones, to health workers for prompt response are one of the good examples of m-health in public health.⁽⁹⁾

In a systematic review⁽¹⁰⁾, which looked at all types of mobile technologies and all health outcomes, studied the overview of the M-health sector at an early point in its development, and described the use of different mobile technology functions across a range of healthcare and public health fields globally, from health behavior to clinical outcomes such as medication compliance and service use, highlighted the similarities in

mechanisms of action for a particular device or function and also suggested ways where they may be usefully transferred to new areas in m- health application in public health.

9.1.Power Of M-Health

The transition into an era of evidence-based mHealth supports that innovation in this domain can be evaluated with the same rigor as other public health strategies, attenuating some of the hype previously associated with mHealth.⁽¹¹⁾ Mobile phones and devices, with their constant presence, data connectivity, and multiple intrinsic sensors, can support around-the-clock chronic disease prevention and management that is integrated with daily life. These mobile health (mHealth) devices can produce tremendous amounts of location-rich, real-time, high-frequency data.⁽¹²⁾

Wales Deanery funded “iDoc”, a project offering trainee doctors a Smartphone library of medical textbooks. By supporting accurate prescribing and treatment planning, the electronic library can contribute to enhanced patient care and Smartphones technology can augment, discussion with their colleagues in the community of practice; so it can help to prepare trainee doctors for discussions with their seniors, assisting the interchange between explicit and tacit knowledge. As mobile technology can be used for simple (information-based), complex (problem-based) clinical questions and clinical procedures (skills-based scenarios).⁽¹³⁾ By the end of 2008, the global use of mobile phones was found to be 4.1 billion and out of that 64% of users were in developing countries. In Africa alone, mobile phone sales has grown upto 550 percent in just 5 years. The mobile health fields are remarkably dynamics and the range of applications are also constantly expanding.⁽¹⁴⁾

10.Problems And Barriers With M-Health

- Another typical mistake, is starting with an iPhone App. Bristol NHS Primary Care Trust (PCT) recently launched an app that offered exactly the same information as was also available on the mobile website.
- The lack of leadership and knowledge and a failure to appreciate the real risks associated with implementing m-health projects.
- That’s why it’s essential that all interested parties collaborate and share knowledge – this is one of the principle reasons all advances in m-health in ablog and set up is needed on the m-health discussion group on LinkedIn.

11.Summary

m-health can no doubt improve the well-being of people around the world. M-health is infact at a stage of intersection of health, technology, and finance but, m-health is a complex industry where it can be difficult to develop practical and sustainable business models. Lack of data on the impact of m-health services, combined with a lack of interoperability between them and other mobile applications, has presented challenges for governments and other large-scale funders of global healthcare in area of m-health application.

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