© 2016 IJSRST | Volume 2 | Issue 3 | Print ISSN: 2395-6011 | Online ISSN: 2395-602X
Themed Section: Science and Technology

Technology Enabled Care (TEC) : The New Era of Health Care Services

Daniel Madhvi, Shakti

Department of Food Science & Technology, BBAU (A Central University), Lucknow, Uttar Pradesh, India

ABSTRACT

Connected health, also known as technology-enabled care (TEC), involves the convergence of health technology, digital media & mobile devices. It enables patients, care givers & healthcare professionals (HCPs) to access data & information more easily & improve the quality & outcomes of both health & social care. Today, much advancement has been achieved in mobile industry through the inclusion of GPS systems, accelerometers and even touch screens. Therefore, lots of applications and services have been developed and provided on mobile phones.

Other notable developments are the availability of healthcare 'bio-sensing' wearable, such as digital blood pressure monitors, glucose sensors & patient- healthcare provider access to real-time healthcare data & information. Additionally, smartphones are incorporating a growing range of sensors which monitor changes.

Although technology has the power to improve access to healthcare services, there are some limitations/barriers which can't be overlooked. While apps provide information, many currently lack the functionality to do more in relation to health. People usually seek out varied information to deal with their health problems. However, to ensure the right information for the right person at the right time and place is a challenge. There is a lack of substantive reference information for consumers to base well-informed decisions about whether or not to adopt the applications they review and to ascertain the validity of the information provided by these e-health solutions.

There is enormous potential for further improvements across many aspects of health care provision, but only if the existing barriers can be overcome.

Keywords: Health Care Services, TEC, HCP, GPS, TEC

I. INTRODUCTION

Health care access, affordability and quality are problems all around the world. There are well-established disparities based on income and geography, and the high costs of health care present affordability challenges for millions of different people. Large numbers of individuals do not receive the quality care that they need. Mobile technology offers ways to help with these challenges. Through mobile health applications, sensors, medical devices, and remote patient monitoring products, there are avenues through which health care delivery can be improved.

Connected health, also known as technology-enabled care (TEC), involves the convergence of health technology, digital media & mobile devices. It enables patients, care givers & healthcare professionals (HCPs) to access data & information more easily & improve the quality & outcomes of both health & social care. Wide scale adoption of TEC is essential for sustaining the future health care system. These technologies can help to lower costs by facilitating the delivery of care, and connecting people to their health care providers. Applications allow both patients and providers to have access to reference materials, lab tests, and medical records using mobile devices.

Opportunities for using mobile technology have improved in the past few years with the growing population of smartphone & tablet users. The rate of mobile phone usage has increased exponentially at a fast and unimaginable rate. Based on the company "The Mobile World" in 2014, the global mobile phone usage had exceeded 4.25 billion at the end of 2014 which is equivalent to around half of the world's population. Moreover, it has been predicted that the market value of mobile health will increase to be more than 11 billion USD by 2018. Mobile phones have replaced computers and possess a significant impact on consumers and their life style.

In the past decade, mobile phones were seen and classified as portable communication tools, with the sole capability of making calls. Today, much advancement has been achieved in mobile industry through the inclusion of GPS systems, accelerometers and even touch screens. Therefore, lots of applications and services have been developed and provided on mobile phones. Combination between advanced mobile phone technology and computer technology at present, mobile phones are not just telephones, they have become smart phones. Due to the advanced nature of computer architectures for embedded systems computing, mobile computing has become well integrated with the modern way of living.

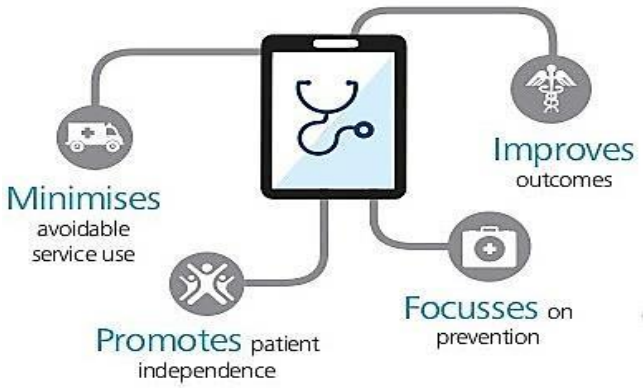
Other notable developments are the availability of healthcare 'bio-sensing' wearable, such as digital blood pressure monitors, glucose sensors & patient- healthcare provider access to real-time healthcare data & information. Additionally, smartphones are incorporating a growing range of sensors which monitor changes.

II. METHODS AND MATERIAL

A. Mobile Health

"Mobile Health" is a combination of health and mobile device technology, especially smart phones. It can be defined as „medical and public health practice supported by mobile devices (e.g. mobile phones, patient monitoring device and wireless devices). In present world, consumers are more concerned about their health. Thus, healthcare services are increasingly considered for better quality of life, with the active approach focusing on prevention, instead of passive approach of focusing on treatment. It is a very useful tool for personal health monitoring and many devices such as iPhone, iPad, Google Nexus and other mobile computing devices have applications developed for health monitoring that targets specific needs of the consumer.

Mobile healthcare applications receive more and more attention due to the ability to reshape healthcare delivery, for example, enabling self-management of patients while they pursue their daily activity .Mobile healthcare web services using Android can provide advantages to patients, enabling them to query their Symptoms and get the expert response from the Expert System in the form of identification of the disease and medications to cure the illness.



Patients can access medical information and Expert system independent of their current place and time. Mobile devices, home computers can be utilized in healthcare services to provide delivery of information to patients at the point of need. In this way, patients can be equipped with powerful tools and support Systems that can help them in their everyday health management and patients can get more involved in decision making regarding their own health. Problems related to increasing healthcare costs and the higher demand for healthcare personnel and services can be addressed and reduced.

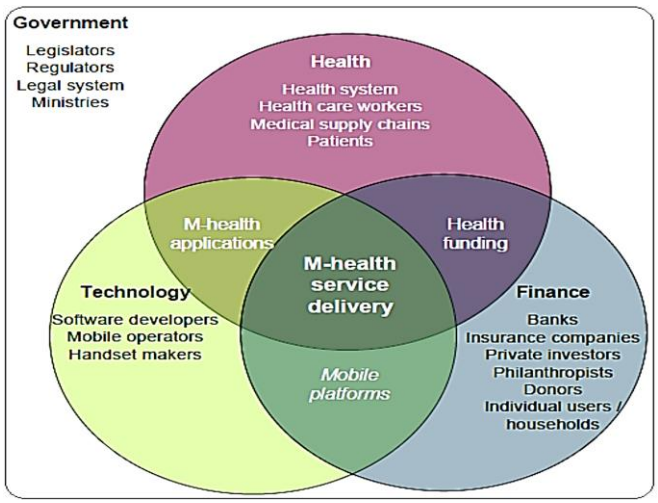
Range of mobile applications:

- Apps for medical providers
- Specialty or disease-specific apps
- Medical education and teaching
- Apps for patients and the general public (including health and fitness apps)

Mobile health applications help in areas such as training for health care workers, the management of chronic disease, and monitoring of critical health indicators. They enable easy to use access to tools like calorie counters, prescription reminders, appointment notices, medical references, and physician or hospital locators. These applications empower patients and health providers proactively to address medical conditions, through near real-time monitoring and treatment.

B. Mobile Health Ecosystem

The mobile Health ecosystem overlaps several dynamic spheres, consisting of health, technology and finance, whereas, government is the influencer that has power to set regulations, policies, and strategies that can affect all spheres throughout the development and use of mobile Health inventions. The stakeholders in mobile Health influence the drivers, so that mobile health can help consumers to have better health.



III. RESULT AND DISCUSSION

Wearable Devices

One of the major developments is the growth of wearable technology, particularly the 'bio-sensing' wearables. These devices include fitness bands, digital hearing aids, blood pressure monitors etc. Most wearable healthcare devices transmit data via an app. The growing global market in TEC is a catalyst for the development of wearables. There are three major characteristics which have an impact on the development of wearable devices:

- Working of wearable's as they perform well only in conjunction with software (such as apps).
- Demand for monitoring devices that are not obstructive, easy to use & do not interfere with day to day life.
- Large no. of companies designing & developing wearable devices & the market is highly fragmented.

IV. CONCLUSION

Mobile technology offers interesting ways to help with health care access, affordability and service delivery. Through mobile applications, sensors, remote monitoring devices and reference materials, there are numerous avenues through which health care delivery can be improved. Mobile technologies offer the ability to connect patients with their doctors, care-givers and loved ones and enable timely health monitoring which suggests improved patient engagement and better health outcomes. Mobile technology can aid in providing access to information, helping to lower costs, facilitating remote care and increasing efficiencies by connecting patients to their providers virtually anywhere. Although technology has the power to improve access to healthcare services, there are some limitations/barriers which can't be overlooked.

The most widely available health apps have been fitness, medical reference & wellness apps. While these apps

provide information, many currently lack the functionality to do more in relation to health.

People usually seek out varied information to deal with their health problems. However, to ensure the right information for the right person at the right time and place is a challenge. For example, smart phone application vendor markets provide a varied selection of health applications for users. However, there is a lack of substantive reference information for consumers to base well-informed decisions about whether or not to adopt the applications they review and to ascertain the validity of the information provided by these e-health solutions.

There is enormous potential for further improvements across many aspects of health care provision, but only if the existing barriers can be overcome.

V. REFERENCES

[1] M Health in an m World: How mobile technology is transforming health care. Available at: http://www.deloitte.com/assets/Dcom-

[2] Gartner Identifies the Top 10 Consumer Mobile Applications for 2012. Available at: http://www.gartner.com/newsroom/id/1230413.

[3] Maged N. Kamel Boulos et al., Mobile medical and health apps: state of the art, concerns, regulatory control and certification. Online Journal of Public Health Informatics, 5(3):e229, 2014

[4] Rao V.S. et al., A Design of Mobile Health for Android Applications (2014). American Journal of Engineering Research (AJER), 3(6):22-29.

[5] Singh S. et al., Healthcare Services Using Android Devices (2014). The International Journal of Engineering and Science (IJES), 3(4):41-45.

[6] Darrell M. West (2013). Improving Health Care through Mobile Medical Devices and Sensors. Available at: www.brookings.edu/governance.aspx

[7] Daniel M. & Yafat V.J. Computers in catering: Digital Dining (2015). International Journal of Advanced Research in Computer & Communication Engineering Vol.4, Issue 5, page 19-20.