

# **mHealth**

## Making Connected Healthcare a Reality



# Mhealth Introduction & Market Trends

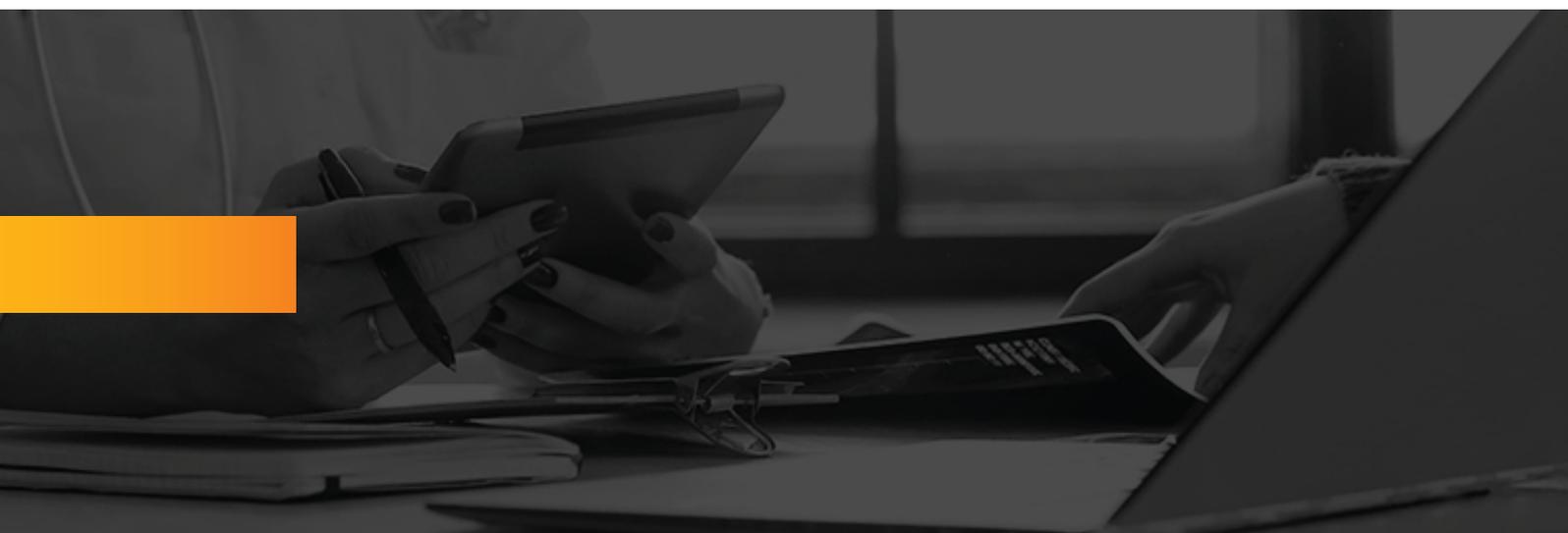
We live in a connected world today where the number of wireless subscribers is almost equal to the population of the planet. Mobile health (mHealth) is an attractive solution that leverages the ubiquity of mobile devices to address one of the most pressing global challenges – making healthcare more accessible, efficient, and affordable. In fact, a PwC study predicts that global mHealth market would be worth more than \$58B in the near future.

Earlier institutional providers, physicians, home healthcare providers, and patients used to work in silos and due to this, both efficiency of the system and quality of care were affected. Smartphones and mobility, specifically, has opened doors for the healthcare ecosystem providers to address these challenges by making the concept of connected healthcare a reality. Mobile Health (mHealth) will have a bigger impact on how care is delivered due to the following reasons:

- Mobile devices are personal & ubiquitous
- Meteoric adoption of mobile technology and a highly competitive marketplace has ensured low cost ownership of devices and services
- Mobility by its nature ensures that users are always connected which radically increases accessibility of patient information, collaboration & care

If we analyze the mHealth adoption globally, three key trends that emerges:

- With consumer adoption of smartphones on a meteoric rise, people are seeking to use mobile technology to better manage their healthcare, and to improve access and connectivity to their health providers. Emerging markets like India are ahead of development markets in terms of patient needs, expectations, and uses in many cases
- Payers are willing to pay for the mHealth services because they believe that mHealth will increase access to care, improve the quality of care and related outcomes while decreasing overall healthcare costs
- Healthcare providers are looking at mHealth as an option to increase efficiencies, reduce cost of care, and improve patient collaboration. Majority of providers believe that mHealth can have a profound impact in the area of remote patient monitoring, remote care management, preventive care, and personal wellness



Connected healthcare is a healthcare delivery model that uses technology to connect different ecosystem players and helps to deliver more comprehensive and holistic care. Connected healthcare aims to increase the quality of care while reducing the cost by maximizing utilization of resources, increased collaboration, and modern technology. It uses technology – often leveraging readily available consumer technologies – to deliver patient care outside of the hospital or doctor's office, and mobility is one of the key technologies that are being used for building connected healthcare solutions.

Following are a few areas where mHealth, as a component of overall connected healthcare, can have a bigger impact:

**Home care:** mHealth technologies & solutions are also helping to provide home care solutions for elderly and individuals who live independently along with vital support for patients recovering from acute conditions, including cancer, joint replacement surgery, and pregnancy.

**Remote Patient Monitoring:** mHealth solutions can improve the access to care specialized medical services, provide more effective preventive care and better monitoring of chronic conditions, and improved patient outcomes through remote patient monitoring solutions. Healthcare providers can deliver personalized services to patients and families at home, at work, at play, or when traveling through interactive mobile applications for smartphones, tablets, and laptops.

**Chronic Disease Management:** A key component of a successful care management is engaging patients with respect to their health and wellness. Connected devices & health technologies—from wireless blood pressure monitor that automatically uploads readings and text messaging programs that reminds patients to take their medication to virtual visits conducted via video that connects providers to remote patients—facilitate and personalize patient engagement. A mHealth solution based on connected healthcare principle can connect all stakeholders like individuals, families, care givers, and payers, thus helping in delivering education, information, and support to individuals to improve awareness and encourage positive behavior change.

**Clinical Applications:** With electronic medical records, remotely monitored patient data, and digital information becoming prevalent, predictive analytics solutions can help healthcare providers to improve patient care, support population health management, and lower costs. Hence, the integration of data from various sources with electronic medical records (EMR) and provider health IT systems, delivered through mHealth solutions, will be a key driver in achieving the objective of improved patient care & efficiency of the overall healthcare system.

**Consumer Engagement:** Mobile technology and social media are enabling consumer engagement by meeting consumer needs for more empowerment, convenience, and control. With regard to managing healthcare, mobile technology will empower consumers to take a more proactive approach in assessing their symptoms and selecting providers, accessing healthcare systems, and connecting with care providers for ongoing care management

# ACL Digital's Patient Centric mHealth Solutions

ACL Digital's mHealth solutions, based on its Connected Healthcare Framework, provide healthcare providers, physicians, and patients an opportunity to collaborate in a meaningful way through the usage of smartphones, cloud computing, and analytics. Through its 'Connected Device' initiative, which is an integral part of its 'Connected Healthcare Framework', ACL Digital is enabling the medical devices to communicate smartly with internet and smartphones and hence improving the value they deliver in detection & monitoring of diseases, and preventive care.



Following are a few mHealth solutions offered by ACL Digital which are developed using its 'Connected Healthcare Framework'

## Personal Blood Sugar Monitoring Solutions (iGlucocheck)

ACL Digital's iGlucoCheck application is an effective and hassle free means by which patients can monitor their blood-sugar levels periodically anytime, anywhere using their android phones. The application connects to the Glucometer device using Bluetooth, reads the historical data from the device and pushes it to the cloud server.

Some of the prominent features of the application are

- An in-built simulator that emulates the actual Glucometer device that
  - Connects using Bluetooth
  - Reads and syncs glucometer data with the cloud server
- Intuitive graphical display of the blood-sugar values over a period of time
- Flagging of blood-sugar levels as Low, Normal and High



## Mobile Enabled Remote Patient Care

Our cross platform (Android, iOS and Windows) based remote care delivery improves patient satisfaction by providing quality care at remote locations. The mobile application enhances productivity and efficiency of physicians with robust practice management features. The application features are:

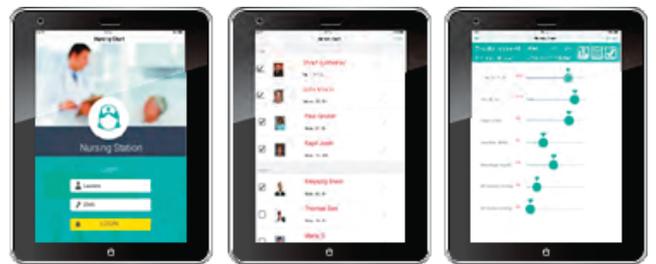
- Appointments viewing/management and tracking with a color legend
- Appointment notifications based on the target handset of physician
- In-built map navigation for physicians to locate the patients quickly in case of emergency
- List of To-do tasks for physicians
- Physician profile that helps in collaborating during care delivery



## Nursing Medication Chart

The iOS application enables nurses to view and update the patients' vitals, charts and their records on the fly from their iPhone/iPad. The application has the following features that enable the nurses to improve the efficiency, while enhancing the patient care delivery. The prominent features in the application are:

- Patients list tagging with status as visited and yet to visit
- View patient details and record the vitals pertaining to:
  - Temperature
  - Height & Weight
  - Heart Rate
  - Blood Sugar
- • Blood Pressure



View the patient history records and history pertaining to the vitals through intuitive graphs

## Conclusion

One important aspect of mHealth that we must remember is that if mHealth provides more affordable healthcare with better access and quality, consumers are eager to pay for this value. For this reason we have seen many examples of rapid adoption of solutions in emerging markets like India that have gone wanting in developed markets. The challenge is convincing the consumer and patient that the mHealth solution provides better outcomes, treatment and value than they would typically receive from traditional services. Consumers may consider paying a premium if they were to save time and effort in realizing their healthcare objectives.

mHealth has the potential to revolutionize the healthcare industry - yet organizations are still uncertain how to capitalize on the technology. To make gains, healthcare organizations, payers, mobile operators and regulators should work together as part of an ecosystem to introduce consumer-centric, scalable business models that empower the patient and provide reimbursement for mHealth offerings.

ACL Digital is a design-led Digital Experience, Product Innovation, Engineering and Enterprise IT offerings leader. From strategy, to design, implementation and management we help accelerate innovation and transform businesses. ACL Digital is a part of ALTEN group, a leader in technology consulting and engineering services.

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