

Mobile Health (mHealth) Technologies and Global Markets

May 2017 • HLC162B • Dr. C.L. Barton

- The global mHealth market should reach \$46.2 billion by 2021 from \$13.2 billion in 2016 at a compound annual growth rate (CAGR) of 28.6%, from 2016 to 2021.
- The North America region of the global mHealth market is the largest market. The market is expected to grow from \$4.7 billion in 2016 to \$16.7 billion in 2021 at a CAGR of 29.0% for the period 2016-2021.
- The Europe region of the global mHealth market is expected to grow from \$4.5 billion in 2016 to \$16.3 billion in 2021 at a CAGR of 29.6% for the period 2016-2021.



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Introduction

In 2016, the global mHealth market is estimated to have generated around \$13.2 billion in sales. Over the next decade, innovations within the mHealth market will be driven by the evolution of smart devices and wearables, improvements in wireless coverage and remote monitoring, and the diagnosis and treatment of prevalence of noncommunicable diseases (NCDs). As healthcare shifts towards a patient-centric value-based healthcare system, increasingly healthcare providers will adopt mHealth solutions that enable them to increase productivity and improve efficiencies. In addition, patients are taking a more active role in their health and well-being on the go utilizing mApps, connected devices and wearables to monitor health conditions and provide actionable outputs.

Study Goals and Objectives

The goal of this study is to provide a comprehensive analysis of the mobile health (mHealth) market by reviewing the recent advances in technologies that have driven the field forward. It examines global market trends and opportunities for mobile operators, vendors and industry providers that support the healthcare and pharmaceutical industry.

The report's main focus is to identify the challenges and opportunities that exist in the mHealth market following its applications to improve healthcare tracking, consumer education, healthcare services as a whole as well as its important role in pharmaceuticals and clinical trial management. It aims to identify companies and institutions that are leading the field, providing innovative solutions to enable digitized information and enhance the collation and distribution of real-time patient generated data within the healthcare system to ultimately improve health outcomes and efficiencies as well as to help streamline drug development programs and product submissions.

Reasons for Doing This Study

Mobile health is a rapidly emerging market. Over the past decade, mobile technologies have become part of our daily lives largely due to improvements in wireless infrastructure and connectivity and the rapid development of smartphones and other devices to send and receive information. Many sectors such as banking, retail and navigation have rapidly adopted wireless technology and communication systems, providing hardware/software solutions to enhance the collation, interpretation and communication of information, connecting businesses and customers; expanding market access and global reach through personalized solutions that can empower the end user.

The global healthcare industry continues to face significant challenges to deliver high-quality care to a heterogeneous, expanding and aging population. Mobile telecommunication platforms have already started to demonstrate their value to solve some of these issues to provide accessible and cost-effective solutions in the diagnosis, treatment and management of acute and chronic diseases. In developed economies, mHealth solutions can help speed up the regulatory approval process, enhance the transfer of medical information between healthcare professionals and improve diagnosis and treatment decision making, while in the developing world, it has led to improvement in real-time monitoring of epidemics and more effective mobilization and utilization of medicines and medical services. mHealth technologies

are no longer a nice to have but a must-have technology enabling companies to more effectively compete within the pharmaceutical arena.

Scope of Report

This new report on mobile health will provide a brief description of the current status of the industry and recent developments. It presents the changing environment, in terms of new challenges and opportunities for app development, remote monitoring and networking medical data. The report analyzes the market trends, leading service providers, therapeutic markets and the most popular mHealth applications, in terms of downloads and revenues.

The report will also explore the primary beneficiaries of mHealth and identify the areas/services with revenue growth opportunities in the mHealth industry, across the globe. Finally, it will provide future insights into innovative devices and services in late-stage development that could change the way healthcare services are provided in near future.

Information Sources

Primary research involved e-mail correspondence and telephone interviews for each market, category, segment and sub-segment across regions. We wish to extend our thanks to those who took part in interviews for this report, especially the following, who gave so generously of their time:

- Basharut Syed Ahmed, Senior Analyst/Consultant, IMS Health.
- Bryce Sady, Life Science Marketing, PSL Group.
- David Doherty, Cofounder and Director, 3G Doctor, Ireland.
- Dana Quattrochi, Executive Director of Investor Relations, athenahealth.
- Dimitri Konstantas, Professor of Information Systems, University of Geneva.
- Nardo Manaloto, Chief Innovation Officer/Founding Partner, SeedHIT.
- Sean Nolan, Head of Microsoft's Health Solutions Group.
- Steven Powell, PhD, Chief Executive Officer, Cambridge Cognition.

Methodology

Both primary and secondary sources were used in preparing this study. This analysis of mHealth breaks down the market by geography, category and application, and also analyzes current and potential opportunities for mHealth businesses. It includes market sizes from 2015 and forecasts market revenues through 2021.

Geographic Breakdown

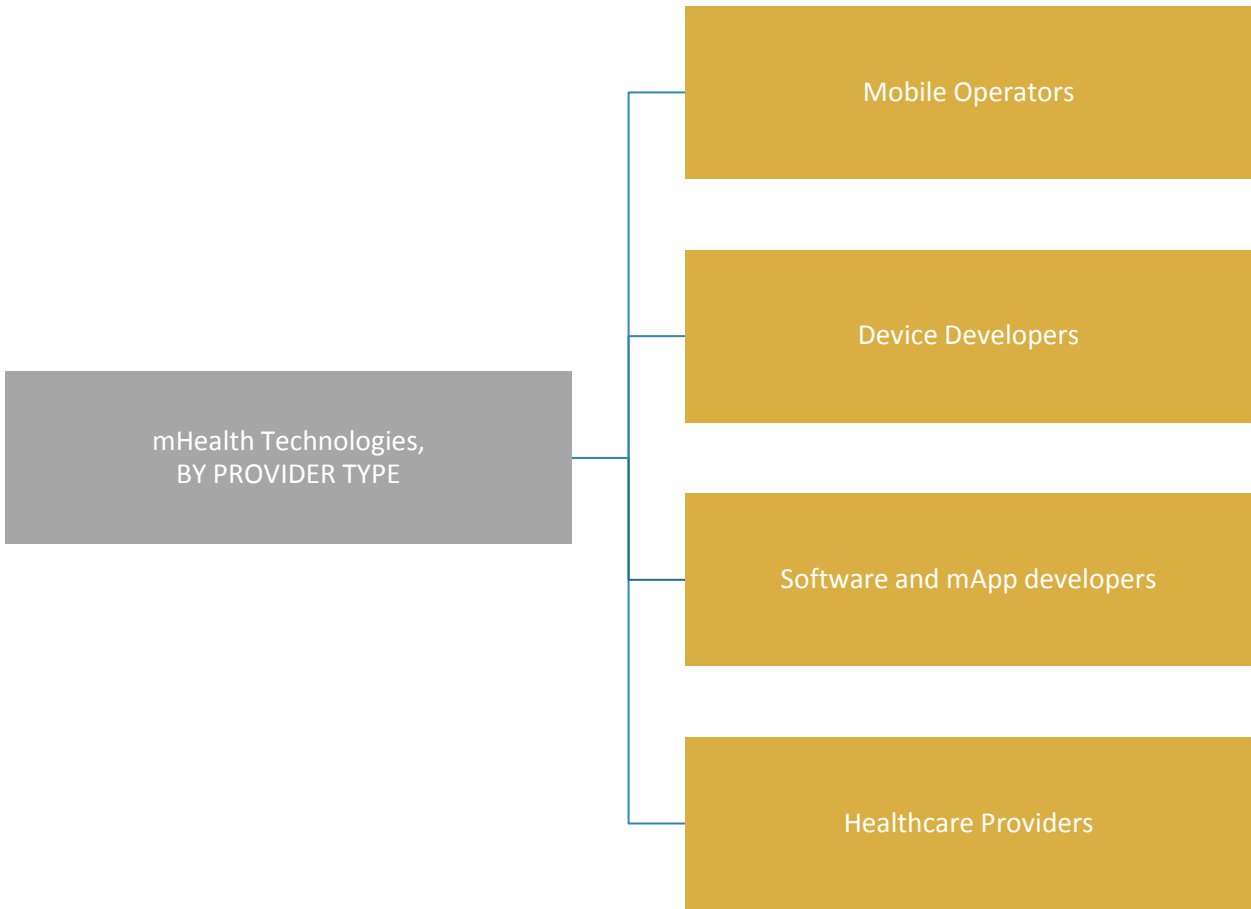
In this report, the geographic regions considered for market analysis include, and only include:

- North America
 - U.S.

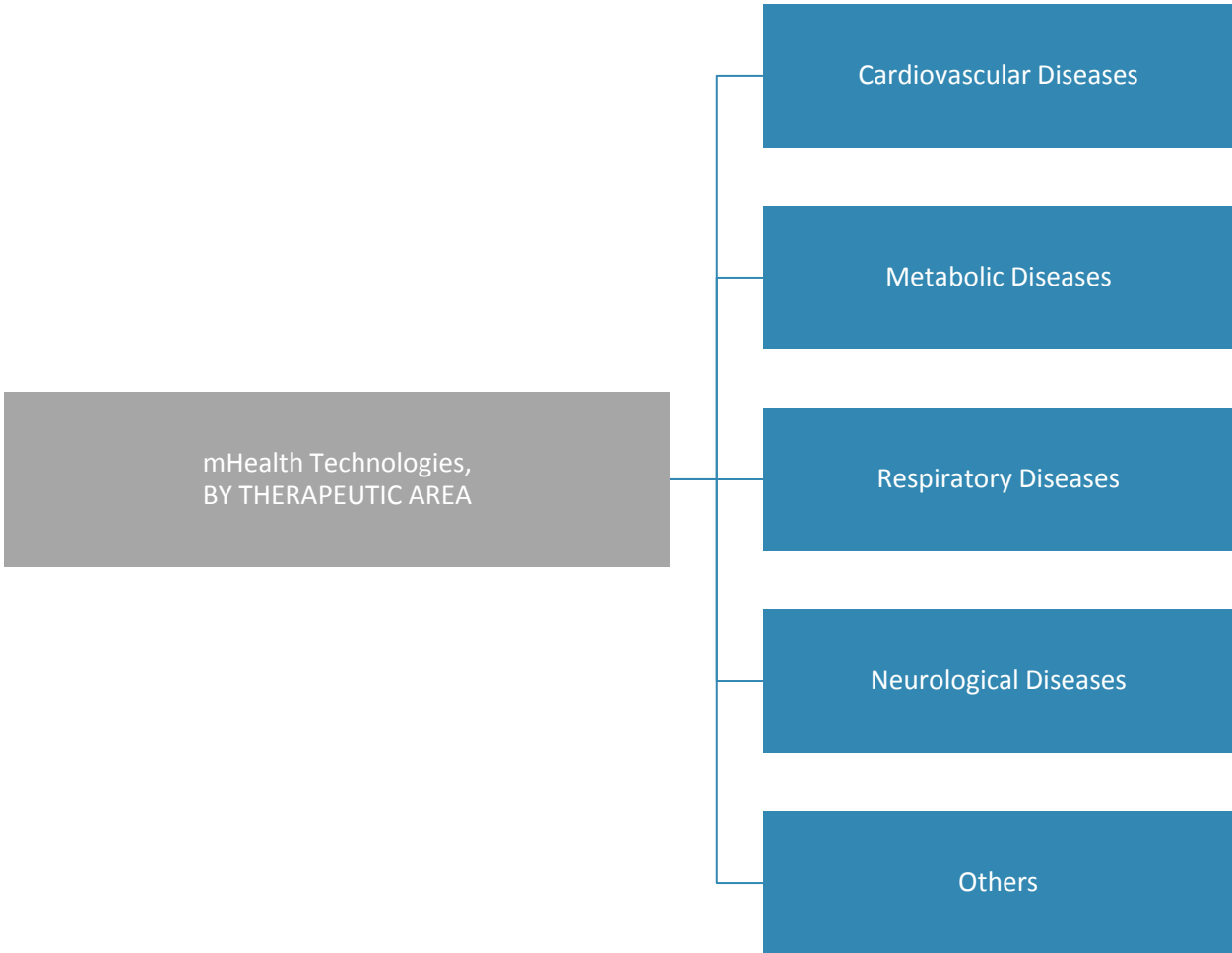
- Europe.
 - France.
 - Germany.
 - U.K.

- Asia-Pacific
 - China.
 - India.
 - Japan.

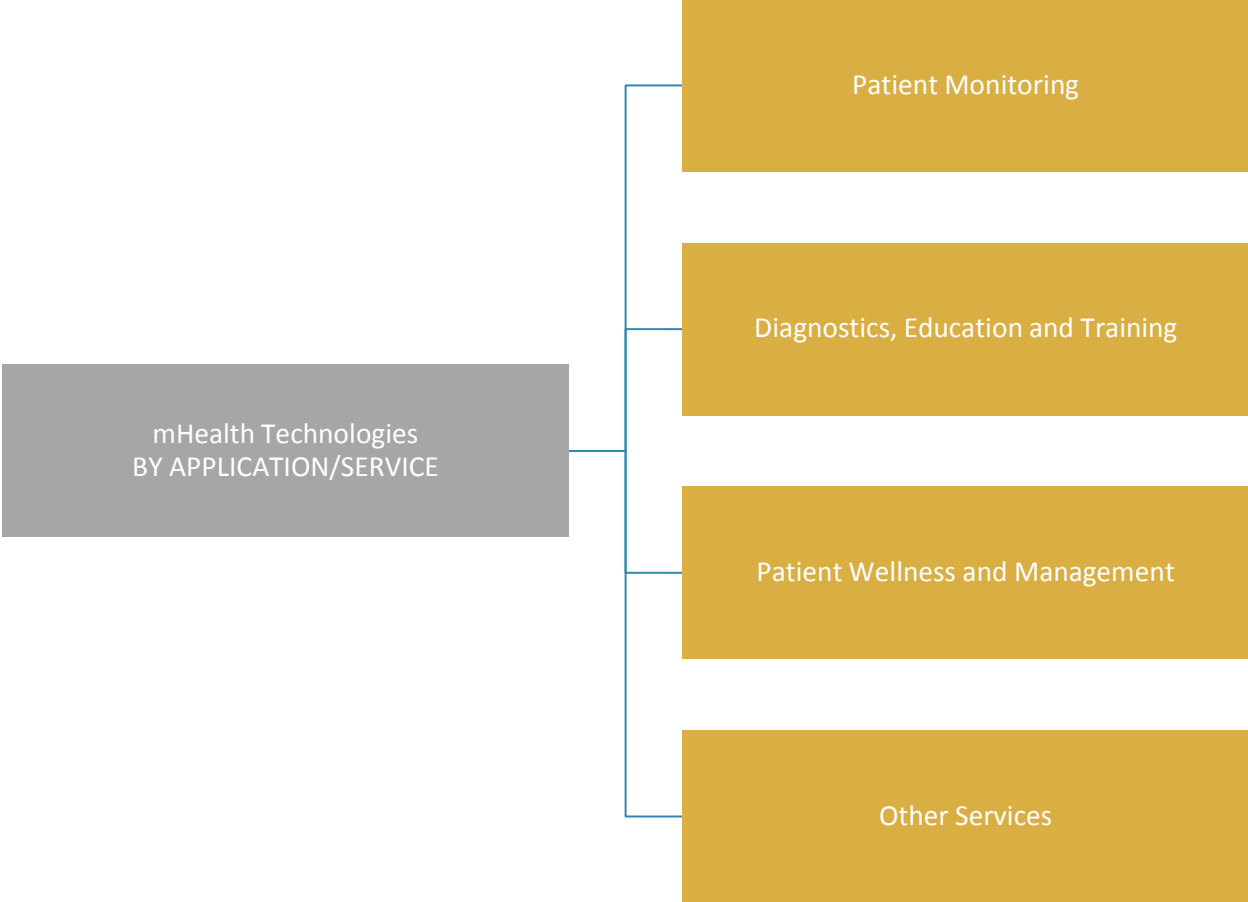
mHealth Technologies, by Provider Type



mHealth Technologies, by Therapeutic Area



mHealth Technologies, by Application/Service



Analyst's Credentials

Dr. C.L. Barton has more than 10 years' practical pharmaceutical research experience with a leading pharmaceutical company and has served as a Pan-European pharmaceutical analyst with a European bank. Dr. C.L. Barton Ltd [Pharmavision] was established in 2002 and aims to provide independent, tailor-made, pharmaceutical thematic research to investment houses. Research reports combine independent scientific analysis with patient- and prescription-based models to forecast the potential sales growth of key developmental drugs and to isolate the key drivers within the pharmaceutical sector. For further information, visit www.pharmavision.co.uk.

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Summary and Highlights

Mobile health (mHealth) is the use of mobile and wireless technologies to support healthcare systems and achieve healthcare objectives. Digital health solutions have the potential to improve the quality of healthcare, to democratize medical knowledge and provide healthcare to billions of people who have limited or no access to services. The provision of healthcare remains high on the economic and political agenda and continues to demand a huge share of gross domestic product (GDP) in industrialized countries, where an aging population and increase in the prevalence of chronic noncommunicable diseases (NCDs) remains a challenge.

mHealth can provide better and more consistent solutions within the global healthcare environment and will change the way services are provided in the future. Smart devices and wearables are empowering individuals to more effectively manage their care, raising awareness, providing continuous monitoring and disseminating of information to the patient and healthcare professionals; driving a more proactive, patient-centric healthcare system.

The mHealth proposition has gained acceptance and is beginning to be adopted by the wider community. However, several hurdles need to be overcome in order to generate a cohesive digital health ecosystem: interoperability standards remain to be addressed, regulation and policies need to be clarified, particularly with respect to device regulation and data protection, and finally cross sector partnerships and collaboration between software developers, mobile operators, governmental and non-governmental organizations and leading healthcare players will be essential to drive the use of data in the real-world setting.

“Many questions remain unanswered. Who is responsible for paying for mHealth, the insurers, hospital, or the state? Who will benefit and is it economical viable?” according to Professor Konstantas. “We need to look at mHealth on a global level not a local level and establish medical standards/specifications to ensure data quality, analysis and interpretation.”

In 2016, the global mHealth market is estimated to have generated around \$13.2 billion sales (Summary Table). Over the next decade innovations within the mHealth market will be driven by the evolution of smart devices and wearables, improvements in wireless coverage and remote monitoring, and the diagnosis and treatment of prevalent NCDs. According to recent reports more than 7 million patients have used some form of digital health program featuring connected devices as part of a care plan. By 2020 more than 50 million users are forecast to connect to a home medical monitoring device or personal device (Mobile Health News, 2016).

The U.S. healthcare system is shifting towards a patient-centric healthcare system, as the majority of patients finance their own healthcare or pay for private healthcare insurance. As a result, patients readily utilize apps and smart devices that enable them to take a more proactive approach to their health and help to reduce their cost of healthcare, improve health outcomes and/or provide rewards for healthier lifestyles.

In Europe, the majority of healthcare services are government funded and while patients may have access to private healthcare the general population is not used to paying for health services. As a result, these countries have been slower to adopt mHealth technologies, and initiatives have focused on healthcare solutions that can help to reduce indirect costs such as medical interventions and hospitalization (number of days). However, like the U.S., the market is rapidly evolving and embracing the use of apps and wearable devices particularly, platforms to expand their capabilities monitoring multiple vital signs and placing the data in a medical context to help trigger alerts (e.g., treatment reminders) to enable patients to make more informed choices.

Japan has lagged behind other countries in the adoption of mHealth technologies, in part due to cultural differences in the provision of healthcare services (mHealthWatch, 2016) However, the lack of access to qualified physicians and pressure to provide rapid healthcare access has encouraged remote regions to start using mHealth technologies to monitor vital signs (e.g., blood pressure, weight and activity levels) and receive treatment remotely. During the last five years, several high profile mHealth partnerships have been established such as Docomo and Omron healthcare (2012), DexCom and Verily (2015) and Apple, IBM and Japan Post Group (2015) that aim to provide a range of home healthcare services through mApps, mobile monitoring services and greater access to community activities and support services.

Elsewhere, the uptake of mHealth technologies has largely been driven by national and international mHealth initiatives such as the mHealth Alliance that is actively working with organizations in low- and middle-income countries to optimize healthcare services through the use of mHealth technologies. These initiatives have ranged from text measuring service to virtual clinics and increase patient access to healthcare professionals in remote areas as well as monitoring the spread of disease and initiating treatment strategies in the face of epidemics.

Despite the advances in mHealth technologies, stakeholders face many hurdles due to the lack of a uniform regulatory environment and the challenge of implementing comprehensive healthcare data management tools for healthcare providers and end users.

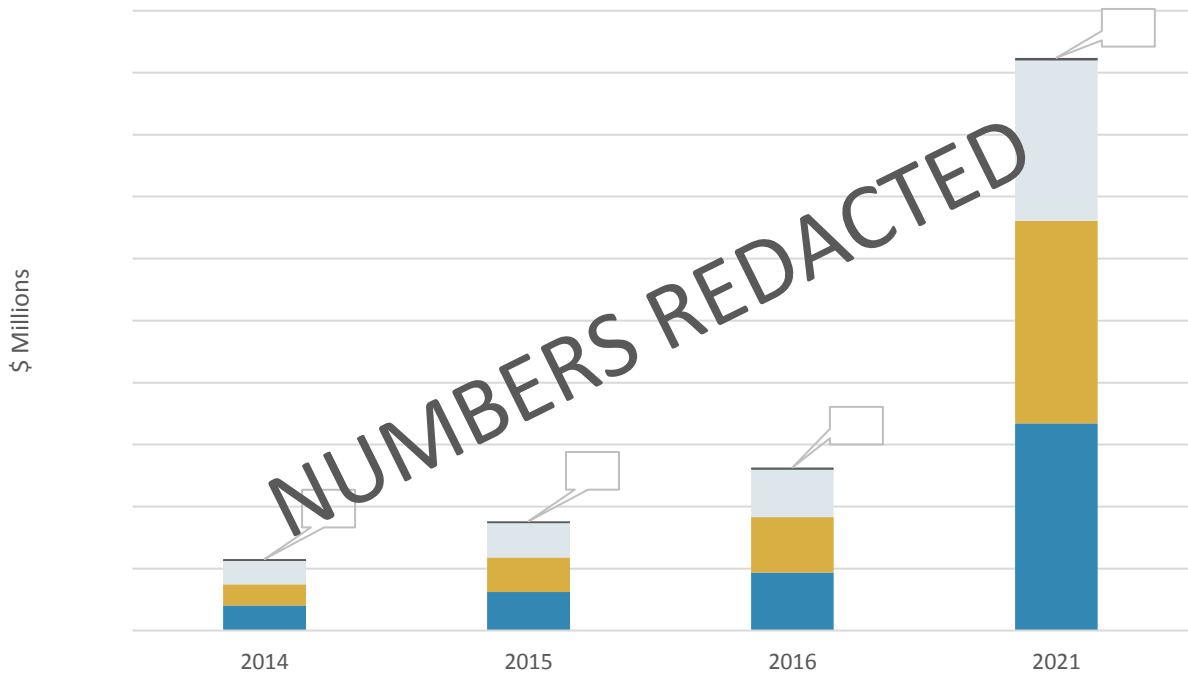
Currently, North America remains the primary market for mHealth technologies generating nearly \$4.7 billion in 2016 and accounting for a third of global sales. Growth in the market was driven by investments from large mobile operators such as Alcatel, Apple, Samsung and Verizon; however, this technology is rapidly being taken up in all corners of the globe; for instance, China hosts the largest mobile market in the world (GSMA, 2016). Improvements in mobile network infrastructure and speed of transfer will support mHealth solutions that can help improve patient diagnosis, treatment and medication adherence as well as expanding healthcare access across the globe.

Summary Table:
Global Market for mHealth, by Region, Through 2021
(\$ Millions)

Region	2014	2015	2016	2021	CAGR% 2016–2021
North America	2,023	3,115			
Europe	1,691	2,789			
Asia-Pacific	1,890	2,741			
Rest of World	163	172			
Total	5,767	8,817			

Source: BCC Research

Summary Figure:
Global Market for mHealth Market, by Region, 2014-2021
(\$ Millions)



Source: BCC Research

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