mHealth KENYA
Public Private Partnerships
We Develop, Implement & Sustain

STRATEGIC PLAN 2015-2020

VISION

Preferred innovative global eHealth solutions provider with sustainable impact

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Foreword

mHealth Kenya has been at the forefront of leveraging technology to improve health care outcomes. We have developed lasting partnerships with local and international entities to help develop, sustain and implement projects that improve the quality of life for the beneficiaries.

As mHealth Kenya transitions from CDC Foundation, it has become necessary to develop a strategic plan to guideline its path. A team was constituted, led by the Chief Executive Officer to drive the process of developing articulate goals and objectives for the next 5 years. The process was consultative and involved discussions with key collaborators in the Ministry of Health, CDC and CDC Foundation.

Our strategic plan is ambitious. It defines how we will be successful within a challenging and changing health care environment. The plan is devised to strengthen the capacity of our principal partners, the Ministry of Health, to deliver quality health care services through mobile technologies. It is also devised to strengthen collaborations between different stakeholders in delivering innovative and sustainable solutions to the public.

mHealth Kenya has exciting aspirations in a field that has seen several unique innovations targeted at improving the quality of health care service delivery. This strategic plan shall guide our mobile application development activities for the next 5 years, outlines several key priorities that will enhance our reputation and position us as a leader in mHealth innovative solutions providers in the region. We will develop, implement and sustain local solutions; we will work with local partners to design and implement global solutions that have local impact and sustainable outcomes.

Our goals and objectives are aligned with the strategies espoused by our stakeholders. We will integrate research, learning and capacity building strategies to strengthen local and international collaborations. We will cascade our stakeholders' goals and objectives to our locale and assure desired outcomes in all our projects

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Dr Lyndon Marani
Board Chairman
mHealth Kenya Ltd

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Dr Cathy Mwangi
Chief Executive Officer
mHealth Kenya Ltd

Acknowledgements

This strategic plan is the first formal document developed and approved by mHealth Kenya. It represents an important blueprint for the growth of the company. mHealth Kenya is grateful to CDC and CDC Foundation for birthing and nurturing it to this level, through which it has gained a high level of credibility and acclaim for its innovative solutions.

We would like to thank all stakeholders for their contribution to the development of this plan. We are convinced that it has struck the right balance in maintaining what we do well, what we are mandated to do by our stakeholders and responding to future requirements and opportunities.

We thank all staff members of mHealth Kenya for their continued efforts, dedication and commitment to maintaining and advancing the mHealth Kenya brand. We thank the mHealth Kenya Board of Directors for their stewardship and guidance to help us achieve our mission.

Last but not least, we would like to thank the Centre for Lean Six Sigma Ltd (CLSS) for leading the planning process and for helping to put together this document. Their collaborative and consultative approach was effective in challenging and influencing the team to develop and commit to the goals and objectives contained in this plan.

On behalf of mHealth Kenya, we look forward to engaging with all our stakeholders in realizing the ambition of this plan.

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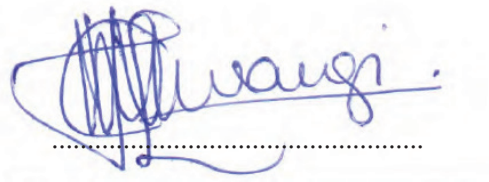
Dr Lyndon Marani
Board Chairman
mHealth Kenya Ltd



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Dr Cathy Mwangi
Chief Executive Officer
mHealth Kenya Ltd

Executive Summary

The main objectives of mHealth Kenya 2015-2020 strategic plan is to create a roadmap to guide the organization to implement its new business model of transforming the company from CDC Foundation centric to a hybrid private social enterprise.

Our strategic planning journey was a comprehensive an inclusive process. We engaged the Ministry of Health (MOH), our clients and other stakeholders, board of directors and the staff and conducted a thorough evaluation of our programs and systems. The result is a shared vision of how mHealth Kenya will position itself to continue with the transformation of healthcare in Kenya.

Our 2015-2020 strategic plan build on mHealth Kenya's many accomplishments to date. It proposes a renewed vision, mission, and mandate and core values and outlines six (6) strategic directions with objectives and goals for the next 5-years.

With the clear strategic plan, our strong portfolio of programs and systems, with our dedicated staff and partners, we will continue to be innovative in the eHealth care space by developing and delivering impactful mobile health systems to our community.

The strategic directions and goals in this plan are mHealth Kenya's response to its understanding of current opportunities and challenges for offering mobile health solutions to the targeted population.

The strategic plan identifies the importance of strategic alliance and partnerships with various stakeholders as a means to achieve the overall vision and mission of mHealth Kenya.

The strategic plan is structured around 6-strategic directions with the main thematic areas focusing on growing mHealth Kenya business to become a self- sustainable enterprise

The six (6) strategic directions are as follows:-

1. Support the Ministry of Health (MOH) e/mHealth services with technological product innovation in all PEPFAR focus counties
2. Develop an integrated e/mHealth platform that will cover the entire healthcare value chain
3. Develop an innovations hub for new products and services to serve health care service delivery needs
4. Provide e/mHealth services to the public
5. Operate e/mHealth data analytics ecosystem
6. Develop and nurture competencies of learning culture through capacity building and continuous knowledge sharing

1. Background Information

1.1 About mHealth Kenya

mHealth Kenya Ltd is a registered limited liability company incorporated under the companies Act CAP 486 of the Laws of Kenya. We provide a critical needed link between public and private entities to support, improve, optimize and sustain provision quality health services in Kenya. mHealth Kenya has been a local implementing partner for the CDC Foundation in the country, overseeing and managing mobile technology projects in the health sector. We understand and embrace the power of Public Private Partnerships (PPP) and seek to leverage this potential for the benefit of public health.

mHealth Kenya is the pioneer of mobile health technologies and initiatives bringing together a team of experts with a diversity of knowledge, experience, and a deep understanding of the Health sector. Our experience includes health information systems, health projects design and implementation, mobile and network communications technology backed by a strong experience in program funds management.

1.2 Current Business Model

mHealth Kenya has risen to be at the forefront of facilitating improved public health through use of mobile technologies. In all our projects, our principal partners have been CDC, CDC Foundation and the Ministry of Health through its relevant departments.

We have been the Ministry of Health preferred mobile technology partner, a relationship that has been built over the last 3-years and is documented by the successful delivery of the various platforms. We belong to multiple eHealth and mHealth technical working groups chaired by the Ministry of Health. mHealth Kenya has taken project management roles in the Public Private Partnerships (PPP) and in supporting public health initiatives by forming collaborative teams to undertake mobile health Projects with sustainable positive outcomes.

1.3 Transition from CDC Foundation

Following the change in the mode of partnership between mHealth Kenya and CDC Foundation, mHealth Kenya is transitioning into a grantee role with CDC for the implementation of several mobile health projects over the next 5 years. As a result of this transformation, mHealth Kenya has developed a 5-years strategic plan to enable it to successfully implement its new business model including:-

1. Attracting new strategic partners to grow the business after a healthy relationship with CDC Foundation which mHealth Kenya will continue to nurture.
2. A strategic plan that will allow mHealth Kenya to build on its strengths and experiences to capture new and existing market opportunities including grant management, project management, projects monitoring and evaluations, and systems development.
3. Use the plan to strengthen relationships with current and future partners and stakeholders to enable successful execution of the new business model.

2. Strategic Plan Development

2.1 Purpose of the Strategic Plan

mHealth Kenya is adopting a new business model transitioning from a CDC Foundation centric to a hybrid private enterprise as such it require a strategic plan to guide it to develop and implement its new operating model

This strategic plan provides a blueprint against which the strategic direction of mHealth Kenya is documented. It seeks to coordinate and integrate the activities of various goals of the company in order to achieve long-term organizational objectives

The strategic plan will allow mHealth Kenya to stipulate its vision and mission while maintaining the organization's core values within the Kenyan eHealth sector.

The strategic plan will help mHealth Kenya to create a platform to engage different stakeholders and the Ministry of Health in the process to determine appropriate long-term direction, goals and objectives for mobile health

By implementing the strategic plan, mHealth Kenya will help CDC to support Ministry of Health in achieving their objectives which will be achieved through systems development and implementation

The strategic plan will help identify the technological gaps and new growth areas in the eHealth care space where mHealth Kenya can participate as a social enterprise while improving the lives of Kenyans while still maintaining a strong and healthy partnership with CDC and CDC foundation.

2.2 Strategic Plan Development Process

The strategic planning process was conducted through deliberations at consultative meetings amongst mHealth Kenya staff, board of directors, and senior management group. mHealth Kenya contracted Center for Lean Six Sigma (CLSS) to provide management consultancy services related to the development of the strategic plan. The approach employed in the strategic planning process involved engaging mHealth Kenya Board and senior management going through an iterative process depicted below:-

Figure 1: Strategic Planning Approach

This strategic plan is as a result of various discussions held, global research, desktop documents reviews and interviews conducted culminating in the mHealth Kenya strategy visioning meetings and discussions help between 1st through 30th of July 2015 in Nairobi, Kenya. The mHealth Kenya board of directors and senior management were part of the strategic visioning meetings facilitated by CLSS management consulting team. During the meetings, discussions were held on mHealth Kenya business environment, its vision, mission, core values and objectives, partners, current and future product analysis, market segments and competitors.

During the visioning sessions, a vibrant and compelling picture of mHealth Kenya's future next 5 years was agreed on. The strategic direction is grounded in the agreed vision, mission and core values which will be accomplished through the attainment of the organization's strategic objectives.

The process of developing the strategic plan was consultative and collaborative involving mHealth Kenya key stakeholders and CLSS management consulting team and encompassed the following key steps:

a) Analysis of mHealth Kenya's environment

A situational analysis was performed with the aim of assessing the environmental context within which mHealth Kenya operates. This involved conducting a mobile and e-Health market research which focused on secondary research. The secondary research involved carrying out a desktop research on global megatrends, Africa's eHealth care services, Kenya's PESTEL analysis and Kenya's healthcare environment analysis. The dynamic nature of these factors meant that a thorough understanding of the trends and key insights was essential in developing a strategy that will enable mHealth Kenya to achieve its vision.

b) Definition of the mHealth Kenya's strategic direction

This was achieved through the Situational Analysis including mHealth Kenya 2015-2020 strategic plan input. The approach to strategic planning integrated all operational aspects of mHealth Kenya building on its past performance and leveraging on its strengths. Using this approach, the mission, vision, core values and strategic objectives were developed for mHealth Kenya. In addition monitoring and evaluation approaches were developed and assigned to specific strategic objectives.

c) SWOT Analysis

The SWOT Analysis was performed to make a determination of the Strengths, Weaknesses, Opportunities and Threats to the organization based on the environmental analysis.

d) Product Analysis

The analysis of mHealth Kenya (current & future) products and the development of its To-Be products guided by a product development checklist were performed.

3. Situational Analysis

3.1 Overview of Health Sector

Following decades of stagnation in basic health care indicators, Kenya's health sector is slowly picking up. The government has found it challenging in the past to implement reforms aimed at reducing HIV/AIDS, improving maternal and child health care and combating both communicable and non-communicable diseases (NCDs). Healthcare spending has remained low, and while key indicators such as maternal mortality have stayed high for a decade. Nonetheless, recent reforms have painted a brighter picture for health care in Kenya.

Kenya's NGO sector is also highly involved in healthcare service delivery, which is largely a result of donor support for programmes that deal with HIV/AIDS, Malaria, Tuberculosis and family planning. According to estimates from the Health NGOs Network's Best Practices Technical Working Group, Kenya's health sector has more than 6,000 NGOs, notably the UN's population Fund, the Joint Nations Programme on HIV/AIDS, the World Bank Group and WHO, as well as a variety of national development agencies from Denmark, the EU, Germany, the US, Japan and the UK.

3.1.1 Important Indicators

In The UN's Health Development Index (HDI) 2013 report, Kenya slid two places, from 143rd to 145th out of 187 countries. The UN attributed this to change in survey methodology, although Kenya has long been on the low end of the list. Life expectancy is now 57.5 years, the same level as in 1980, and dipped as low as 53.1 in 2005.

The leading causes of death in Kenya are HIV/AIDS, perinatal conditions, lower respiratory infections, malaria and tuberculosis; meanwhile, NCDs such as diabetes, cancer, cardiovascular disease and high blood pressure are on the rise. The WHO reports that HIV/AIDS causes the most deaths in Kenya, accounting for 29.3% of the total. According to the HDI, the prevalence of HIV among youth stands at 4.1% for females and 1.8% for males; according to the UN, close to 1.2m Kenyans are living with the disease, with a prevalence of 6.9% for women and 4.4% for men.

The government has channelled significant efforts into preventing new cases of HIV/AIDS while delivering antiretroviral (ARV) medications to those already infected. In its 2014/15 budget, it reported that the number of patients on ARVs rose from 250,000 in 2008 to 620,000 in 2013. HIV prevalence fell from 7.2% to 5.6% between 2007 and 2012, the UN reported in 2013.

The country's HIV-prevention initiatives include male circumcision, testing and counselling campaigns, and programmes to prevent transmission from mother to child. However, according to the National AIDS and Sexually Transmitted Infections Control Programme, some 80% of Kenya's HIV programmes are externally funded, which could pose problems to long-term treatment.

3.1.2 Middle-Income Status

In September 2014, Kenya revised its method of calculating GDP, elevating it to middle-income status as of 2014. While this is good news for businesses seeking investment, it is worrying for sectors that rely on donor funds. Stakeholders fear that such support will be scaled back, bringing new challenges for preventing and treating HIV/AIDS. This has implications for the health sector because some donors might withdraw support should the country reach middle-income status, as program delivered will not be viewed as quite so critical.

3.1.3 Maternal Mortality

Poor maternal and child health remains a big problem in Kenya. Most maternal deaths occur during or immediately after childbirth, usually from bleeding, high blood pressure, prolonged or obstructed labour, infections and unsafe abortions. According to the Medical Therapy Program (MTP), half of mothers in Kenya are anaemic, and the presence of skilled attendance at delivery stands at 46%. Contraceptive usage is also low, at 46%, while Kenya's population growth and fertility rates are high, at 2.7% and 4.7%, respectively.

Kenya's maternal mortality rate (MMR) has improved little over the past decade. Measured per a 100,000 live births, this indicator reached 488 in 2008 (some regions reported as high as 1000), up from 414 in 2003, if lower than the 590 reported in 1998. Recent statistics on MMR vary greatly: 360 in 2012 according to the HDI; 400-500 in June 2013 according MoH; and 488 as of 2012 according to the MTP. Whatever the true figure, Kenya is unlikely to meet its MDG of reducing this to 147 per 100,000 live births by 2015, although the MTP target is 300 by 2015 and 150 by 2017.

Another initiative, the "Beyond Zero" campaign led by the first lady, Margaret Kenyatta, was launched in 2014 to speed up implementation of the national plan to eliminate new HIV infections among children. First unveiled on World AIDS day in 2013, the campaign aims to galvanise high-level leadership on this issue focusing on five key areas: accelerating HIV programmes; mobilising partners; involving communities to address barriers to accessing services; and providing accountability and recognition in the endeavour to combat these issues. So far, it has attracted funds from donors and private sector organisations to purchase mobile clinics that are designed to provide integrated HIV care and maternal and child health outreach services.

3.1.4 New Disease Burden

The growing prevalence of NCDs is also a cause of concern. A 2013 report by the Kenya NCD Alliance, "Case Kenya Study: The NCD Situation", found that these cause 21.6% of male deaths and 22.3% of female deaths in Kenya, led by circulatory diseases, cancer and diabetes. The report also found that 32.2% of schoolchildren and 53% of college students are smokers, lifting the overall smoking rate to 26%. This and poor air quality in urban centres has contributed to a rise in respiratory diseases.

Stakeholders now worry that, with the prevalence of infectious diseases already high, the rising incidence of NCDs has created a dual burden that could overwhelm already- strained facilities. The situation has opened new doors for private sector investment in treatment and prevention of NCDs, generally a more profitable segment of health care service delivery. (See analysis)

Table 1: Human Development Index Trends, 1980-2012

YEAR	Life Expectancy at Birth	Expected Years of Schooling	Mean Years of Schooling	GNI per capita ($)
1980	57.7	9.3	2.7	1340
1985	59.5	9.3	3.4	1250
1990	59.3	9.3	4.2	1357
1995	56.2	9.3	5.1	1266
2000	52.3	8.3	5.9	1274
2005	53.1	9.7	6.5	1350
2010	56.6	11.1	7.0	1478
2011	57.1	11.1	7.0	1509
2012	57.7	11.1	7.0	1541

Source: UNDP

3.1.5 Universal Healthcare

With more than 30% of medical expenses in Kenya paid out of pocket, the Kenyatta administration has made universal health care a key priority. Health financing policies have been revised many times in the past 50 years in an effort to achieve this, but legislative reforms have hit snags and delays.

The NHIF is now seen as the best conduit for expanding health coverage to all citizens. As a department of the MoH, the fund was initially mandated to provide accessible health insurance for salaried public and private sector employees earning at least Ksh1000 ($11.40) a month. Since then, it has been reformed several times to include more benefits, target informal households and add outpatient care.

As a result, the fund currently offers mandatory inpatient insurance to all formal sector employees, inpatient insurance to all informal sector workers on a voluntary basis and outpatient coverage to civil servants. The fund has also moved to expand coverage to low-income Kenyans in recent years, offering family premiums for Ksh150 ($1.82) a month to informal and low-earning workers.

The most significant expansion of coverage occurred in October 2012, when the NHIF partnered with the Rockefeller Foundation to invest KShs 23bn ($262.2m) in rolling out a free insurance scheme to 9m low-earning Kenyans.

As of 2014, the NHIF's principal contributors numbered 4m, with coverage extending to 15m Kenyans. This still represents just 34.2% of the total population, compared to 56% coverage in Ghana and 70% in Rwanda. The NHIF hopes to expand cover to 25m Kenyans by 2016 mainly by targeting informal workers outside major urban centres.

The 2014/15 health budget focuses on scaling up policy interventions that enhance equitable health care. Similar to its free maternal care programme, the idea is to increase access to primary care in public health centres and dispensaries by removing user fees.

3.1.6 Human Resources

Kenya is among the countries the WHO identifies as the having a "critical shortage" of health care workers. Kenya has an average of 19 doctors and 173 nurses per 100,000 people compared to WHO recommended minimum staffing levels of 36 and 356 respectively. According to the Medium Term Expenditure Framework (MTEF), the optimal sector staffing requirements is 72,234. The sector currently has 59,667 approved positions of which 49,096 positions are filled, leaving 10,371 vacant. This shortage is exponentially worse in remote rural areas, where Transparency International has documented under staffing levels of 50% to 80% at some facilities. The government has made a concerted effort to increase these levels. Between 2011 and 2013, it claims to have recruited 2,100 doctors and 10,087 nurses, 2,093 community health extension workers and 776 public health workers. Despite these new hires, however, the absolute number of trained health care personnel as a ratio of population continues to be very low.

3.2 Mobile Health Industry Outlook

While there is plenty of room for improvement in the health care sector, the growing role of the private sector and new reforms aimed at expanding access and service through decentralisation should have a profound impact. As the private sector expands, its participation in service delivery, the government will be able to shift its efforts towards providing essential services, and this should help them reduce the disease burden and improve basic indicators in line with Vision 2030 development targets. Though underfunding has plagues the sector for decades, devolution and foreign investment, coupled with an expanded NHIF coverage, should see Kenya's global health care ranking improve considerably in the medium term.

Health is the most devolved of all the ministries. Recently, 70,000 civil servants were transferred to the counties, with over 60% of those being health workers. The most challenging aspect of this process has been educating these workers and reassuring them that standards and their work environment will not change.

3.2.1 Small companies and start-ups join the ranks of private developers

As Kenya's long-underfunded health sector strives to boost access to quality care, the private sector's role in provision has expanded, with most health care facilities now run by doctors and private firms. The health care system has seen growing investment from foreign, as well as increased participation by small and medium-sized enterprises (SMEs), especially in mobile health services. With an emphasis on delivering cost-effective solutions to remote or under-served areas, SMEs now represent the most significant growth channel for private health care services. Recent moves to improve access to credit, moreover, should see SME activities rise in the coming years.

3.2.2 Prominent Role

Consistent underfunding for public health care has helped the private sector gain a prominent role in service delivery. The number of health facilities reached 9448 in 2013, and the public/private ownership balance has shifted in its favour: 53% of all healthcare facilities in the country are now privately owned.

The largest contributors to health funding in the country are consumers, who represent about 35.9% of total spending, followed by government and donors at just under 30% each, according to a 2013 report by KPMG report entitled "Devolution of Health Care Services in Kenya: Lessons learnt from other countries".

3.2.3 SME Solutions

The most promising potential for solving Kenya's health care challenges lies in SMEs which comprise some 805 of employment in Kenya and more adaptable, flexible and quick to adopt the latest technologies in service delivery.

Health care start-ups are a rapidly expanding segment, particularly in mobile, or "m-health" services. Mobile phones are already used to provide micro insurance health policies at larger companies, and some stakeholders forecast that further expansion of mobile health services will help improve service delivery, especially in rural areas.

The m-health revolution has already begun to affect the sector, with an estimated 45 mobile health projects ongoing or completed in Kenya- more than in any other country, according to the mHealth Alliance. Mobisure, for example, offers micro medical insurance schemes to low-income families, delivered via mobile platforms at a cost of $0.40 a day. Another locally developed mobile application, Integrated Disease Surveillance Response, is used to track the spread of diseases across remote area.

3.3 Digital Healthcare Future

Good health is fundamental to leading a healthy and productive life and healthcare is one of the basic requirements of citizens of any country in the world. A well-functioning healthcare system is crucial to both the individual and the public and "The positive correlation between health and income per capita is one of the best-known relations in international development".

Communicable diseases and maternal mortality are currently some of the biggest concerns of the developing world. The number of communicable diseases is growing within developing countries and the maternal mortality ratio is still, in some places acutely high. At the same time, developing countries are experiencing shortages of doctors, nurses and other qualified medical care.

The ability to tackle health issues in developing countries is meeting many barriers such as underfinanced health sectors, strict terms and conditions of insurance not affordable for the poor, or lack of trained medical health workers. These factors influence the number of communicable diseases as well as the high maternal mortality ratio within developing countries.

Kenya is a country with acutely high maternal mortality ratio; lack of qualified personnel and where the access to health care services remains difficult in most parts. Conversely, Kenya has one of the highest mobile phone penetrations in Sub-Saharan Africa and Kenya has recently experienced enormous success in mobile banking services which is frequently used in every day's lives of majority of Kenyans. The Kenyan government attempts to bring affordable health care services to Kenyans have not changes the alarming situation and the high ratio of maternal mortality remains acute in most parts of Kenya.

In 2010 mobile health summit used the definition of mHealth as "the delivery of healthcare services via mobile communication devices". Due to the ease of access to the mobile devices and mobile signal, mHealth can be more promising than eHealth. eHealth or eHealth stands for healthcare practice supported by electronic processes and communication.

"The mobile health field has emerged as a sub-segment of eHealth and the use of Information and Communication Technology (ICT)". Both services can deliver health care information to patients, practitioners or researchers. There is a possibility to monitor a patient through eHealth or mHealth in real-time and make a direct provision of care.

3.4 Five Forces Analysis

Threats of new entrants to the mobile health care market are high due to low entry barriers. Popularity of Android development platforms and smartphones has made mobile health an area of attraction to recent college graduates who want to experiment with mobile applications. One major weakness in this group is the lack of focus with their application, and also lack of strong business partnership arrangements and experience that is needed to succeed in mobile health.

Supplier power in the mobile health care market is low due to abundance of application development technicians as a result of high unemployment of recent college graduates causing employers power. However, the mobile telecommunication carriers may be difficult to control as they may want to raise prices, and in some cases they can also be players in the mobile healthcare market resulting in a forward integration.

The buyer power in the mobile health market is strong with the current key buyers being Ministry of Health (MOH) and donors. The buyers may have a wider choice of who to buy from, or they can decide to develop the applications by themselves through direct contracting with others resulting in a backward integration

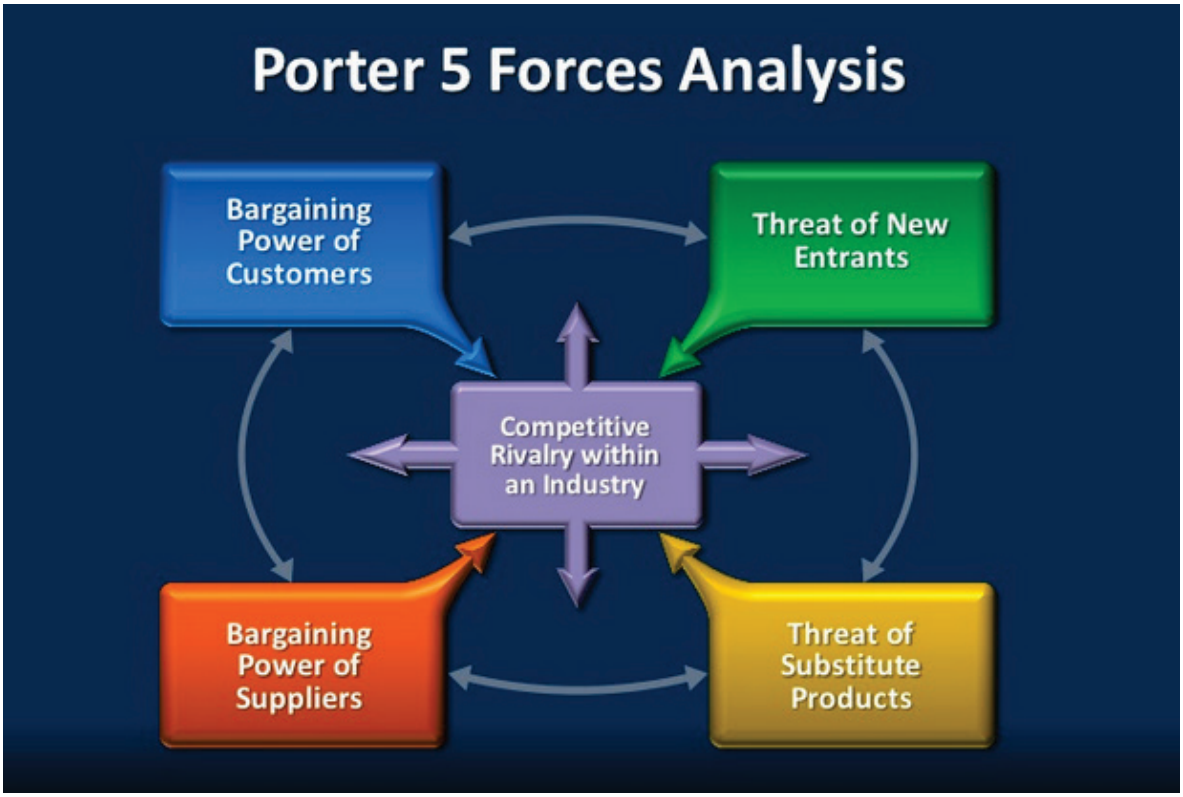


Figure 2: Porters Five Forces

The threat of substitute in the mobile health product space can be high as customers could choose to employ traditional healthcare models due to lack of high cost of switching back

Rivalry among competitors in the Kenyan mobile health market is high driven partly because most applications development are by the donor community, and also the focus has been on isolated systems focusing on particular disease interventions in selected areas with minimum opportunity for scalability

3.5 Embracing Digital Healthcare Adaption

Mobile Health is the enabling access to healthcare through mobile communication devices and the main application areas of mHealth are:

- Education and awareness
- Point-of-Care Support and Diagnostics
- Patient Monitoring
- Disease and Epidemic Outbreak Surveillance
- Emergency Medical Response System
- Health Information System
- mLearning
- Health financing
- Treatment

Each of the above application has diverse usage and support. Education and awareness support to prevent diseases and promote health mobilize community or support educational programmes. Point-of-care Support and Diagnostics, as the title indicates, provides support in diagnostics, screening and clinical care, whereas the third area Patient Monitoring support maintenance treatment and appointment adherence. Disease and epidemic outbreak surveillance area can be tracking cases of infectious diseases in real-time. An emergency medical response system can cope with emergency obstetric care and accidents as well as help in disaster management. Health information system supplies chain management and procurement information. Mobile Learning (mLearning) can provide distance training and continuous professional development for health workers. Health financing area provides smart cards or vouchers making use of mobile payments.

By embracing the mobile technologies, the programs shall:

- Improve access to emergency and general health services
- Improve efficiency of health services delivery
- Enhance collection of vital statistics on birth and deaths to refine public health interventions
- Improved clinical practice for enhanced health outcomes
- Reduce child maternal mortality and morbidity
- Improve disease surveillance and control
- Improve monitoring and evaluating of health system activities for enhanced planning and decision making.

Many of mHealth program still cooperate with eHealth and vice versa. Most of the running mHealth projects focus on acute and life-threatening situations, but mHealth programmes also control the spread of preventable diseases like HIV/AIDS, malaria, tuberculosis and others.

Mobile health applications or services can be used variously. For instance, clients of mHealth Services can contact through phone calls or text messages, health workers or mHealth applications can promise inexpensive and fast treatment observance.

Users of mHealth services can also get to access to health education and health workers can be continuously trained by various alerts or tasks. Through mHealth applications, they can organize transport, which can be very convenient in case of emergency. Mobile health services users can also save up money by accessing health treatment services by paying through mobile money transfer.

3.6 Global eHealth Megatrends

Before looking ahead at what will happen in the next 5 years, it is worthwhile to look back to where the market started 5 years ago. In 2009 smartphones were just starting to play a role in the global mobile phones market. Only 13 % of all handsets shipped in Q1 2009 were smartphones. The vast majority of mobile phones that were purchased in that quarter were simple feature phones such as Nokia's 63 series handsets. The most dominant mobile operating

system for smartphones at that time was Symbian with an almost 50% market share, and Apple iPad was to be launched only one year later.

Today Google and Apple dominate the operating systems market for mobile phones. The formerly leading market player Nokia and its operating system Symbian have been sold or disappeared altogether from the market. Smartphone shipments were projected to reach USD 1.2bn in 2014. That meant that smartphones were to become the global, No.1 connected device and, in addition, tablets were to be sold even more than laptops. Since the app market is developing with exceptional speed - 15 times faster than the growth rate of stationary internet users that meant the mHealth app market is going to have a potential impact on the delivery of healthcare come in 2019 and forward. First of all, with a few exceptions in developing regions (e.g. some in Africa), almost everybody in the world will have a device which could be targeted with a mobile Health solution.

The likelihood that soon doctors and patients will meet in the doctor's office to talk about apps which could support medical treatments is very high, given the high penetration rate of smartphones and tablets among doctors and the interest in apps for users/patients. It also means that not only will new players such as sensor vendors or mHealth data aggregators enter the healthcare market, but also that they will become the dominant participants. Traditional healthcare players need to understand what impact e.g. health API and data aggregators will have on their business models. A clear understanding of the growing connected mHealth app market is indispensable for those traditional healthcare players who do not wish to be left out from the new ecosystem.

Finally, even though there are and will be good arguments that mHealth apps will not have a big impact on the way healthcare is delivered given the high resistance by traditional healthcare players, consumers will set the pace and the market will need to follow.

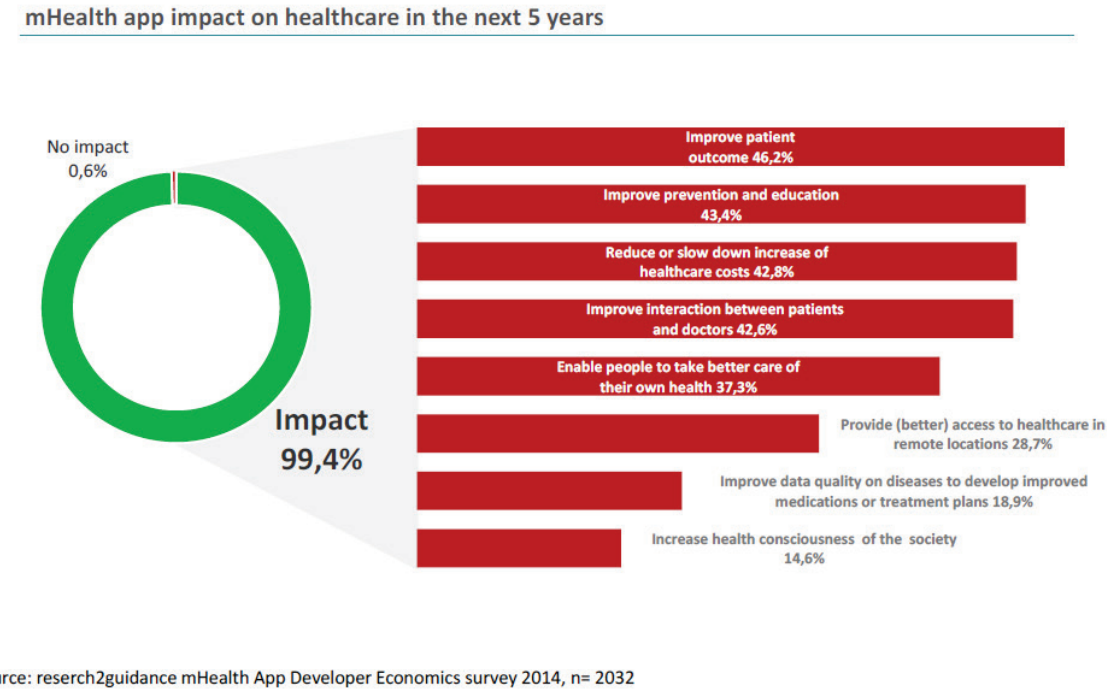
The outlook for the mHealth app market highlights eight (8) trends which will shape the next five years:

- The areas in which mHealth apps will have the biggest impact on the delivery of healthcare
- The drivers and barriers that will be most relevant
- The most relevant target devices for mHealth apps
- The mobile platforms which will be the most relevant for mHealth app publishers
- The most promising mHealth app categories
- The biggest cost lever mHealth apps will have on today's healthcare costs
- The major chronic conditions which offer the biggest business potential for mHealth app publishers
- The most relevant distribution channels

The vast majority of mHealth app publishers today think that apps will have a significant impact on the healthcare industry. This impact goes much further than pure revenue generation opportunity.

Five areas stand out as those which are predicted to have the greatest impact on healthcare. Quality benefits such as improved outcomes of treatments (46.2%) and self-care of people (43.4%) are seen as the top two domains on which mHealth apps will have a significant impact. Besides, mHealth is believed to slow down the increase of healthcare costs (42.8%), improve interaction between patients and doctors (42.6%) and, last but not least, enable patients to take better care of their own health (37.3%).

Impact, however, is not going to take place without relevant drivers which are indispensable to trigger the changes. User and patient demands are the most important driver (43%), only second to the omnipresence of devices capable of running mHealth apps (58%). The rise of mHealth apps goes hand in hand with the upcoming of patient-centred care models (39%) which these, among others, rely on. Apps are supposed to empower patients to take a more active role in their treatment process.



Source: reserch2guidance mHealth App Developer Economics survey 2014, n= 2032

Figure 3: mHealth App Impact on healthcare in the next 5-years

On the other hand, the mHealth app market faces many obstacles. Lack of data security (34%) and standards (30%) are the major barriers market players see as those which might prevent a market momentum.

The three points highlighted and discussed below are also a part of global megatrend:

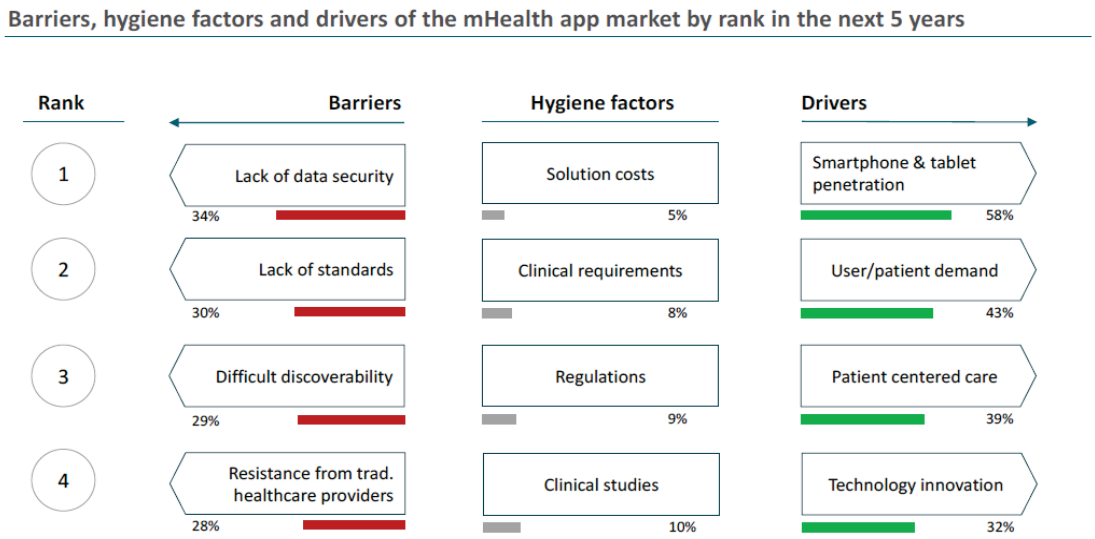
a) Technology is definitely the new Healthcare Research & Development (R&D).

If you didn't believe it in 2012, it's time to get on board—the days of blockbuster products are long gone. Many companies are exploring technology partnerships, and

building technology products and platforms to complement "the pill." Take WellDoc, which is one of the first companies to reimagine what the Rx stands for. Its BlueStar Diabetes product delivers "interactive mobile therapy"; the first disease therapy to be prescribed through an app, where a combination of algorithms and drugs could alter the way medicine is practiced in the future.

b) Connected Care

Connected technologies enable wellness to start and end with the consumer. Web, mobile, car, home, smart glasses, EHR, pharmacies, wearable devices, bio sensors, Wi-Fi and cloud-based systems integrate into the entire patient journey and connect into the provider/payer ecosystem. Mobile plays a huge part, especially for millennials, who send an average 88 texts per day, and for who mobile isn't an activity—it's a lifestyle. "Healthcare everywhere is the new wellness," surmises Mickelberg.



Source: reserch2guidance mHealth App Developer Economics survey 2014, n= 2032

Figure 4: mHealth app market by rank in the next 5-years

c) Consumer-centric experiences are the new Rx

Consumers expect more from their healthcare treatments and wellness routines, but Customer Relations Management (CRM) loyalty and advocacy programs tend to be stale, not personalized. The industry needs to move beyond writing a prescription as the last measure of conversion for a doctor/patient and towards developing meaningful, engaging experiences that traverse the entire customer journey and promote long-term loyalty and advocacy.

"It isn't about sending email blasts or direct mail anymore," says Chandler Chicco's Gwee. "We need to ascertain where user experience and design fit in, so we are effectively

solving a problem by addressing specific customer needs and creating something that is permissive and valuable, versus interruptive and not customized."

3.7 Partnerships and Collaborations

The health sector globally has very many thematic areas that elicit different levels of interest from different organisations. Each thematic area offers different challenges to the health care value chain, each requiring its own unique interventions.

mHealth initiatives across the world have been missing a key component to scale – coordination and alignment of priorities between industry players. The current mHealth ecosystem is highly fragmented with governments, development funders, technology providers, telecom companies, private health providers, public health researchers and NGOs operating in their own silos.

mHealth therefore needs to develop an ecosystem where innovations and interventions have contributions from stakeholders with competencies in their areas of operation. Figure 5 below shows a two-way value chain model for mHealth.

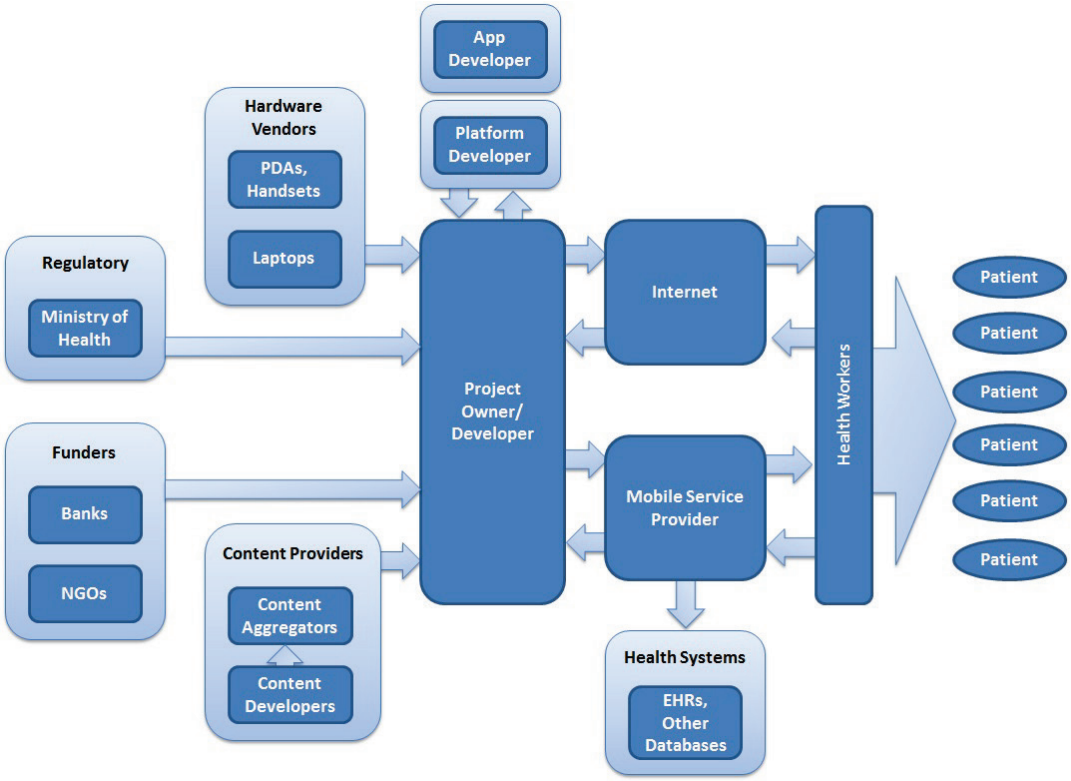


Figure 5: Two-way mHealth value chain

An analysis of records shows that mHealth Kenya has developed several partnerships and collaborations as depicted in table 2 below:

Table 2: Partners and Collaborators

System Development Partners	Areas of specialisation
1. Fintech	1. Enterprise Software Platforms 2. Mobile Aggregation 3. Mobile Network Services
2. IntelliSoft Consulting	
3. Roamtech Solutions	
4. Safaricom	
Implementing Partners	
1. Ministry of Health (National) Divisions a. KEMSA b. NASCOP c. KNTBS d. KEMRI e. eHealth	1. Medical Commodities 2. Health Informatics 3. Blood Science 4. Medical Research 5. HIV/AIDS
2. County Governments (MOH)	
3. Weltel	
4. Clinton Health Access Initiative (CHAI)	
5. Amref (Jamii Smart)	
6. Tangazo Letu	
7. I-Tech	
8. North Start Alliance	
9. International Medical Corps	
10. Changamka (Linda Jamii)	
11. Futures Group	
12. FHI360	
13. Impact Research & Development Organisation	

3.8 SWOT Analysis

3.8.1 Strengths

a) Agile learning organization with participatory leadership style and shared vision
b) Entrepreneurial outfit with the ability to bringing global best practices to solve local health issues
c) Proven experience in Grants Management working with CDC Foundation
d) Strong capabilities in e/mHealth Systems Design, Development & Implementation
e) Proven experience in mHealth projects management, monitoring & evaluation
f) Ability to partner across in the eHealth ecosystem; MOH, Donors, Communities, Educational Institutions & Implementing Partners, Providers & Payers
g) Ability to collaboratively work with health recipient communities, public & private partners to understand drivers for mHealth solutions
h) Ability to rapidly conceptualize required interventions, to design, prototype, to test and implement e/mHealth scalable solutions
i) Ability to improve the quality, safety and efficiency of clinical practices by giving care providers better access to consumer health information, clinical evidence and clinical decision support tools

j) Capacity of innovation in e-Health to produce significant cost savings and operational benefits to the traditional healthcare system
k) Capability to produce eHealth application/product innovation in collaboration with higher institutions, research organizations and major private & public hospitals.
l) The ability to create new business model for mobile health market and balance the need for profit with the social vision of transforming lives in our communities

3.8.2 Weaknesses

a) Resource limitations to conduct large volumes of research, marketing and overhead cost needed to develop solutions for interventions in multiple healthcare areas
b) Relatively young company transitioning from CDC Foundation to a private entity that will require time to solidify itself as a stand-alone organization.
c) Current organizational capabilities built around CDC Foundation structure with a single entity focus that will need a rapid organizational transformation to align with its new operating model
d) Lack of a strong legal advisory framework embedded in the formulation of partnerships and collaboration agreements, a gap that should be solidified going forward as a private entity with increased volume of activities
e) Lack of operating standards that will allow different platforms from partners and stakeholders to seamlessly integrate
f) Challenge to provide consumers with confidence that their personal health information is managed in a secure, confidential and tightly controlled manner.

3.8.3 Opportunities

a) Health care reforms in Kenya and globally (devolution, austerity measures, restructuring, technological etc.) will create demand for e-Healthcare solutions
b) "Under-served" populations among the poor in urban and remote rural locations is a major market opportunities for eHealth solutions.
c) Existing heterogeneous and disjointed mHealth systems provide opportunities for performing Monitoring & Evaluation based on formulated Standards & Guidelines
d) Disadvantaged and ageing population among the poor in the urban and remote locations is a growing major market opportunity for e/mHealth solutions
e) Use of electronic resources on medical topics by healthy individuals or patients is an opportunity for eHealth solutions
f) The increasing cost and demand pressure plus shortage of skilled healthcare workers in the remote rural area is creating opportunities for e/mHealth as mitigating solutions to deliver equality in healthcare to communities at the base of the pyramid
g) The high penetration of mobile gadgets, availability of broadband and internet connectivity in rural and urban Kenya enables the deployment of eHealth as a means to improve delivery of healthcare to Kenyan citizenry eHealth platforms will provide the consumer with electronic access to the information to better manage and control their personal healthcare outcomes

h) Mobile Health will facilitate continuous improvement of the healthcare systems through more effective reporting and sharing of health outcome information
i) Exploitation of new markets by developing concerted e-Health services in the border regions of East Africa Community and candidate communities that are next to the service centres Increased need in data sharing among delivery organizations and health care professionals who deliver healthcare solutions to mobile citizens anywhere anytime will create a need for eHealth solutions
j) Potential for establishing scientific cooperation/co-publications, which enables knowledge transfer and sharing at national level

3.8.4 Threats

a) Inability to securing the needed resources to execute the strategic objectives
b) Going after the wrong market with product and not having the right partners
c) Lack of proper program Monitoring and Evaluation system in place
d) Lack of proper resource allocations and accountability
e) Low level of early adoption capacity Lack of e-Health system interoperability
f) Lack or low adoption of common legal/regulatory standards relevant for e-Health
g) Low social willingness to accept e-Health innovations
h) Accreditation problems for Health professionals, especially in trans-national cooperation
i) Fragmentation of public demand

3.9 Market Analysis

Table 3: Snapshot of Mobile Health Service categories

Category Key	Sub-category	Client / Beneficiary Profile	Focus Area	Content Type	Key Platforms	Key Players
Solutions across the Patient Pathway	Wellness	• Individuals	• Obesity Management • Healthy Living • Elderly Care • Child Care • Pregnancy Tips • Smoking De-addiction	• Information Tips / Interactive Services • Fitness Monitoring	• ISMS (including USSD) • IVR • Apps • Devices	• Mobile Operators • Device Vendors • Content Developers
	Prevention	• Individuals exposed to Diseases / Epidemics / Other Health Concerns	• Infectious Diseases • Drug Abuse Prevention • Reproductive Health • Child Health	• Information Tips	• SMS (including USSD) • IVR	• Mobile Operators
	Diagnosis	• Individuals -Low Income / Low Reach -Primarily Rural Areas	• Health call-centers / help-lines • Tele-medicine	• Interactive Consultation	• Voice / IVR / SMS • Telemedicine • Centers	• Healthcare Providers • Mobile Operators
	Treatment	• Individual	• Treatment Compliance	• Reminders / Compliance Trackers	• SMS (including USSD) • IVR • Apps	• Content Developers • Mobile Operators
	Monitoring	• Individuals suffering from chronic diseases or recovering from acute conditions • Elderly	• Chronic Disease Management • Independent Aging • Post-Acute Care	• Trackers for Body Vitals and Activities • Reporting and Alert • Messages	• Device-linked	• Mobile Operators • Device Vendors
Healthcare Systems Strengthening	Emergency Response	• Institutional – Hospitals	• Ambulance based Solutions	• Trackers for Body Vitals • Interactive Consultation	• Device-linked	• Device Vendors • Mobile Operators
	Healthcare Practitioner Support	• Institutional – Hospitals • Physicians	• Information Lookup and Decision Support Systems	• Medical Information	• Apps • Internet–based	• Content Developers • Mobile Operators
	Healthcare Surveillance	• Institutional - Government - NGOs • Healthcare Workers	• Health Surveys & Surveillance	• Data Collection and Reporting Support	• Apps • Internet–based	• Mobile Operators • Content Developers
	Administration	• Institutional – Hospitals • Physicians	• Appointment Reminders	• Reminders	• SMS (including USSD)	• Content Developers • Mobile Operators

Source: PwC analysis

4. Strategic Direction

4.1 Vision, Mission and Core Values

Our vision, mission and core values are inspired by what we do. They are the foundation of our strategic and tactical planning decisions that will help us to achieve our ambitions. These have been developed in a collaborative approach with mHealth Kenya staff and the Board of Directors.

Vision
Preferred innovative global eHealth solutions provider with sustainable impact

Mission
1. **We will employ the highest quality and professional standards in everything we do.** 2. **We believe in deep partnerships with our stakeholders that allow us to innovate and rapidly implement scalable solutions.** 3. **We will develop, implement and sustain technological innovations to improve quality of life and health outcomes.** 4. **We believe in providing simple practical solutions to solve evolving complex healthcare challenges.** 5. **We believe in self-honesty to admit when we are wrong and the courage to change.**

mHealth KENYA Core Values

H – Honesty & Integrity

E – Ethical & Professional

A – Accountability & Leadership

L – Learning & Innovative

T – Teamwork & Inclusive

H – Humane & Diverse

4.2 Rationale for strategic direction

4.2.1 The care value chain

The current global eHealth definition covers a wide space with several visions. It involves multiple stakeholders with a significant concentration from technology suppliers. It is therefore a market of strategic interest for a complex and proliferating set of players. Figure 6 below shows the various building blocks of an integrated eHealth value chain.

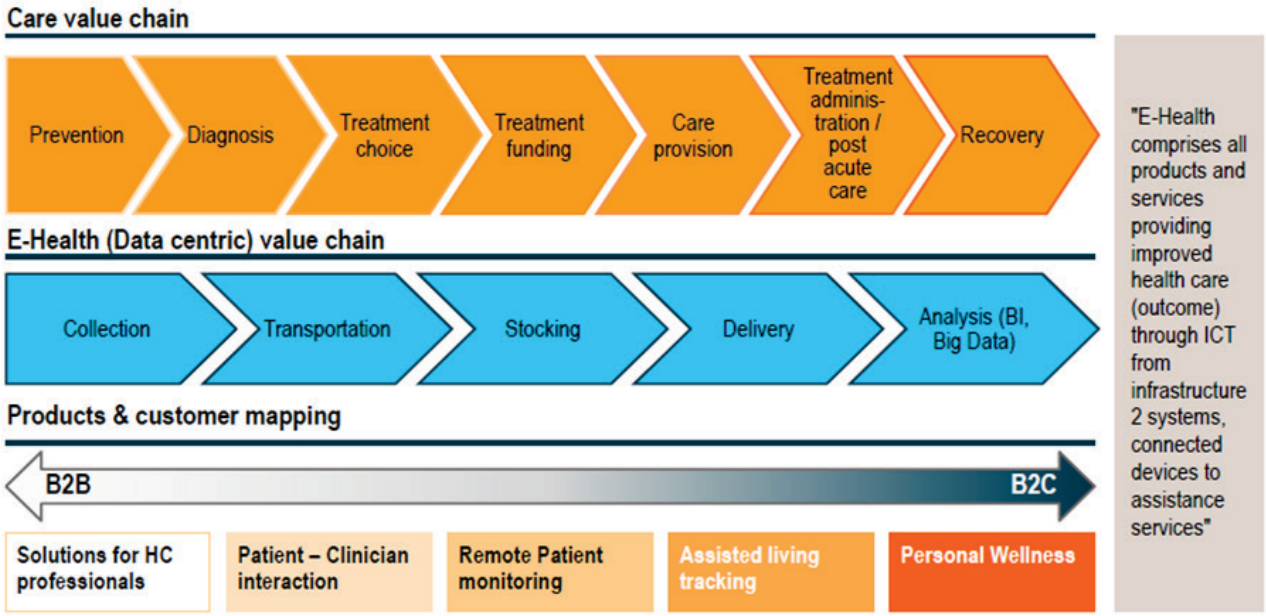


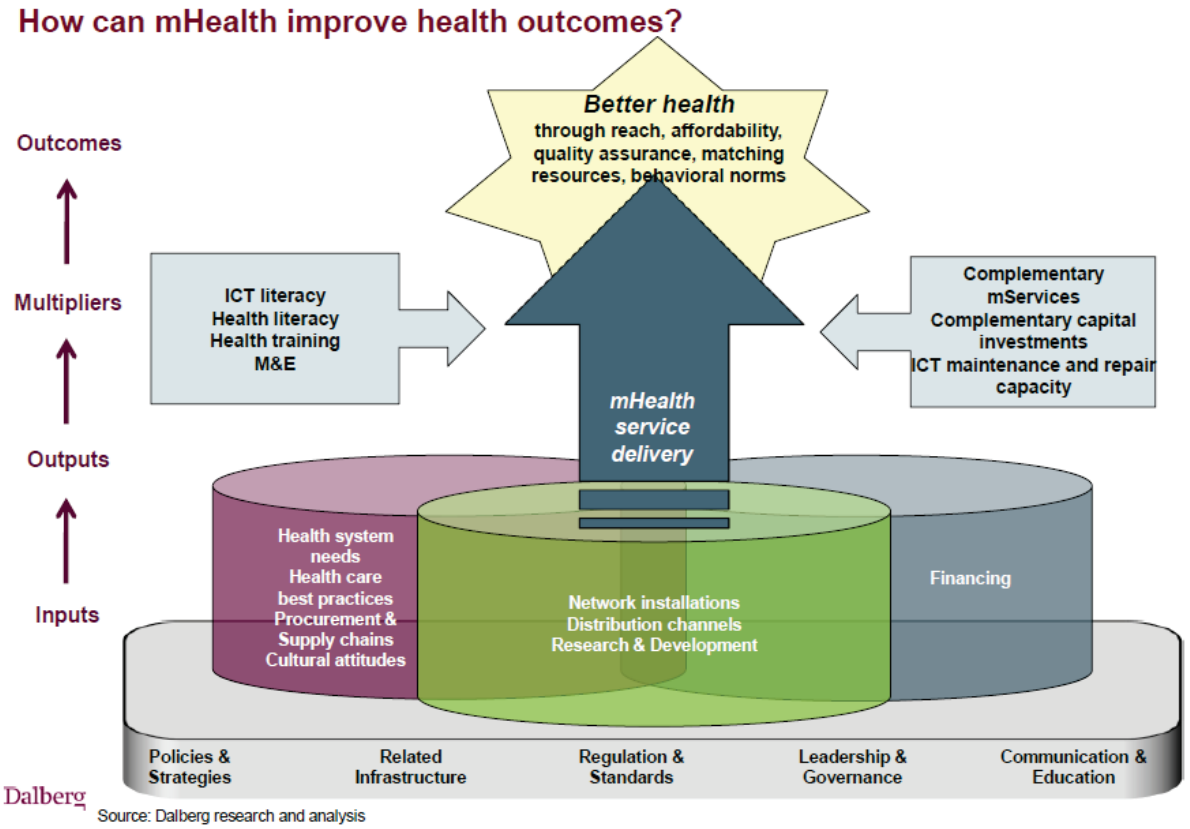
Figure 6: Integrated eHealth Value Chain

4.2.2 The mHealth ecosystem

The mHealth ecosystem overlaps several dynamic spheres: Health, Technology, and Finance Encompassing all these spheres is the influence of government, whose power to set regulations, policies, and strategies can affect all of them throughout the development and use of m-Health interventions. The many stakeholders in m-health influence the many drivers through which m-Health improves health as shown in figure 7 below.

The models of the m-health ecosystem and its impact on health are by necessity a simplification. There is far too much variability in the stakeholders, resources, and processes involved in implementing m-health interventions to capture in simple visual representations, so these graphics are illustrative rather than exhaustive.

Figure 7: Framework for Mobile Health Outcomes



4.2.3 Global mHealth strategic objectives

The current mHealth interventions globally are focussing on the following strategic objectives:

a) Improving quality and access of health care

- ***Treatment support***. To date, m-health services that facilitate treatment of health problems (rather than diagnosis or prevention) deal with infectious and chronic diseases. One of the most common such applications are a compliance reminder, using phone calls or SMS messages that remind patients to take their medications. Another common and related set of applications instructs patients and health workers on rational drug use: in prescribing, dispensing, and administering. For example, Medic Mobile uses text messages to provide cost-effective support to community health workers in rural areas. In a recent pilot in Malawi, 75 such workers using the system saved 2,048 hours and $2,750 in transportation costs, and were able to double the capacity of tuberculosis treatment programs.

- ***Patient tracking.*** Using digital medical records through mobile applications geared toward healthcare providers and pharmacists reduces errors in diagnosis, treatment, and prescribing. Patients can be monitored using a central system into which community health workers feed data collected at their regular visits. The workers, in turn, can receive alerts or updates about their patients to help them plan their rounds.

- ***Supply chain management.*** Applications that collect data on sales and inventories help inform procurement and ordering by suppliers, retailers, and health systems. The same actors can use other applications to track shipments and monitor distribution of healthcare commodities. Applications that protect against counterfeiting are helping consumers, health workers, and retailers avoid fraudulent products that can be ineffective and even dangerous. Consumers can use mobile devices to check prices of medical products and services—a potential boon in remote areas dominated by individual retailers or providers.

- ***Health financing.*** Micro-insurance and health savings products are increasingly being delivered by mobile phone to increase operational efficiency. This includes use of smartcards, vouchers, insurance, and lending for health services linked to mobile money platforms. Similarly, other industries such as agriculture are using mobile phones to deliver micro-insurance products to consumers. Consumers can also receive vouchers or service discounts for medical services using mobile applications.

- ***Emergency services.*** Mobile technology extends access to and increases efficiency in health emergency services and responses, including ambulance models such as Ziqita Healthcare/1298 in India.

b) Making health sector human resources more efficient

- ***Support for clinical decision-making.*** Mobile tools can help health workers provide treatment based on best practices, international protocols, and patient histories. D-Tree's Android/OpenMRS application does so for childhood malnutrition, with software that calculates healthy weights and creates individualized treatment plans.

- ***Better recordkeeping.*** Health workers can spend less time dealing with bureaucracy and more time providing care when they have mobile applications to report data required by funders. And as noted, digital medical records delivered using mobile applications reduce errors by healthcare providers and pharmacists when diagnosing, treating, and prescribing medications to patients. In addition, applications aimed at community health workers allow patients in rural and underserved areas to be incorporated in broader health system databases.

c) Capture and use real-time health information

- ***Surveillance.*** Collection of time-sensitive data on health problems is growing, giving patients and practitioners greater scope for immediate decision-making without meeting in person.

- ***Disaster management.*** After natural disasters, m-health applications have been used to collect medical information, report on areas in greatest need, and direct emergency medical treatment.

- ***Accountability for healthcare delivery.*** Governments can create feedback loops that enable patients to provide feedback on government services, doctors, and other healthcare workers. M-health applications also empower patients by allowing them to obtain accurate information quickly so that they understand their diagnoses and treatments and can check their medical records. In addition, leaders in the health sector are discussing the potential for m-health applications to open lines of communication between funders of health systems and intended recipients of health commodities and services.

d) Prevent disease and promote public health

- ***Disease prevention.*** During emergencies, people in affected areas can use m-health applications to report urgent health needs. Consumers can also receive information on locations of health facilities and resources. Applications for social networking are forging connections between patients and between healthcare providers to share knowledge and experiences.

- ***Education and awareness.*** Several countries are using games, quizzes, and other non-traditional mechanisms to deliver health information. Young Africa Live, a social networking platform hosted by the Vodacom Live portal in South Africa, offers information related to HIV/AIDS and other health issues using entertainment and social topics. In its first year the portal had more than 300,000 unique users and nearly 22 million page views.

Intervention	Type of service	Users				Platform					Mechanism	
		Patients / Consumers	Health workers	Supply chain firms	Health system managers	SMS	Call	Web browser	Self-contained application	Remote sensor	Push (data sent to user)	Pull (data asked from user)
Improve quality of & access to health care	Treatment support *(adherence / appt. reminders)*	✔				✔					✔	✔
	Patient tracking		✔	✔	✔	✔	✔		✔			✔
	Supply chain management *(drug quality authentication)*	✔				✔					✔	✔
	Supply chain management *(inventory management)*	✔	✔	✔	✔	✔		✔		✔	✔	✔
	Health financing *(insurance and savings)*	✔				✔			✔			✔
	Emergency services	✔				✔	✔					✔
Increase efficiency of health sector human resources	Clinical decision support		✔		✔	✔	✔	✔	✔		✔	✔
	Record keeping *(including Electronic medical records)*		✔		✔			✔	✔			✔
Capture & utilize real-time health information	Disease surveillance		✔		✔	✔	✔			✔	✔	✔
	Disaster management	✔	✔	✔	✔	✔	✔	✔			✔	✔
	Social accountability	✔	✔	✔	✔	✔	✔	✔				✔
Promote public health & prevent disease	Disease prevention *(Public health advisories)*	✔			✔	✔					✔	
	Education and awareness	✔				✔		✔	✔		✔	

Note: These categories are illustrative; there is often overlap across the mHealth services
Source: Dalberg research

Figure 8: Examples of mobile health services

4.3 Strategic Directions

Strategic Direction #1 Support the Ministry of Health (MOH) e/mHealth services with technological product innovation in all PEPFAR focus counties
Goals 1. Improve efficiency in the delivery of health care services and patient care through the application and use of informatics services, tools, practices and policies. 2. Enhance the ability to use data to make informed decisions for care and treatment for persons living with HIV/AIDS while ensuring data quality. 3. Refine application and use of informatics tools, services, practices and policies through ongoing evaluation and continuous quality improvement (CQI) efforts. 4. Create sustainable infrastructure and capacity for the improvement and use of informatics tools, services, policies and practices
Objectives 1. Develop and implement evaluation protocols for all mHealth Kenya projects and amend existing protocols based on new aspects and activities added. Publish and disseminate the results from the evaluations. 2. Strengthen the capacity of MOH to scale up mHealth technology to ensure 100% uptake 3. Scale up mPEP, EID SMS Printers and Text4Life systems to serve wider needs by partners and collaborators 4. Implement mobile technology in 100 percent of the ART clinics to facilitate ART adherence 5. Integrate m-EMRs to improve collection of medical reports in remote areas and process data to the MOH central data depository. 6. Develop training materials to facilitate the use of ART guidelines and other clinical documents for HIV AIDS treatment and integrate them into the MOH e-learning platform(s) 7. Have all the drop-in centers served by key populations partners implement the Electronic Most at Risk Populations System (eMARPS) and report into the key populations NASCOP database 8. Support the MOH in developing standards, guidelines and requirements and develop a prototype SMS system for mHealth using these standards. 9. Communicate, collaborate and build effective, trusting partnerships with MOH, counties, and private sector partners to create buy in and facilitate a well-coordinated and sustainable approach to mHealth implementation
How we will measure success 1. Completion of the Projects Evaluations and Protocols 2. Completion of the draft publications and meeting with the stakeholders 3. Training and facilitation of the Trainer's for different projects 4. Completion of the systems Enhancements, Capacity building and systems integration 5. Completion of Systems testing and Deployment
Responsible Party CEO, CTO, COO, CFO

Strategic Direction #2 Develop an integrated e/mHealth platform that will cover the entire healthcare value chain
Goals 1. Identify key healthcare challenges through mapping with stakeholders partners and collaborators to develop synergies in systems for health care interventions 2. Implement the monitor approach, and measure the impact
Objectives 1. Map the entire health industry value chain and identify gaps that can be filled by technology interventions 2. Analyze existing disparate eHealth innovations to identify synergies 3. Identify and develop an integrated platform to deliver an integrated solution
How we will measure success 1. Technology interventions deployed to fill gaps 2. Deployment of the complete integrated eHealth solution platform 3. Outcomes of technology interventions deployed.
Responsible Party CEO, CTO, COO

Strategic Direction #3 Develop an innovations hub for new products and services to serve health care service delivery needs.
Goals 1. Develop and implement new products to improve access and quality of health services 2. Create a Center of Excellence and research and development (R&D) for development of new e/mHealth interventions 3. Scale up existing health care interventions to improve reach and quality
Objectives 1. Increase demand, access and reach of quality health care service using technology innovations 2. Leverage on the knowledge, experience and capacity of academic institutions to increase R&D capabilities of mHealth Kenya 3. Extend functionality of existing interventions to address new health care needs
How we will measure success 1. Increase in demand, access and reach of health care services 2. Reduced turnaround times in delivering health care service to patients 3. Increased functionality of products
Responsible Party CEO, CTO, COO, CFO

Strategic Direction #4 Provide e/mHealth services to the public
Goals 1. Increase demand and consumption of quality health care services 2. Increase knowledge of good health care behaviors 3. Improve customer engagement and experiences with health care workers
Objectives 1. Develop quality information and content relevant to the public or health workers 2. Develop scalable and agnostic content sharing and delivery ecosystem 3. Avail a patient feedback channel to allow collection and collation of information from patients 4. Enroll the general public and health workers to the ecosystem to provide relevant content.
How we will measure success 1. Increased demand, access and consumption of health services and information
Responsible Party CEO, CTO, COO

Strategic Direction #5 Operate an e/mHealth data analytics ecosystem
Goals 1. Provide analytical health trends data to help in developing new products and services, and improving health care processes 2. Improve health interventions through analysis of data and strengthen health systems to manage and deliver health care
Objectives 1. Develop ways to transform data and information into knowledge that improves delivery of health care services 2. Create synergies with stakeholders, partners and collaborators to share and consume data
How we will measure success 1. Consumption of data 2. Improvement in delivery (speed, quality and agility) of health services
Responsible Party CEO, CTO, COO

Strategic Direction #6
Develop and nurture competencies of learning culture through capacity building and continuous knowledge sharing

Goals

1. Support learning, individual and team development, and build leadership capacity
2. Foster a culture of health, safety and wellness that enhances the quality of work life and organizational performance
3. Increase connectedness and enhance communication to cultivate a strong and cohesive organizational culture

Objectives

1. Establish partnerships with academic institutions for knowledge exchange, collaboration and training
2. Establish a leadership framework and development strategy
3. Embed a culture of learning to enhance individual, team and organizational performance
4. Develop and implement a proactive approach to workforce and succession planning to improve continuity and consistency of services
5. Build a unity of purpose based on the vision, mission and core value of mHealth Kenya
6. Enhance internal communication to reduce silos, improve alignment across the organization and build trust.
7. Create a cohesive culture that integrates, aligns and connects the organization – one mHealth Kenya that is greater than the sum of its parts.
8. Implement innovative organizational processes and technologies to achieve efficiencies.
9. Clarify roles and responsibilities across the organization, ensuring that all employees see themselves as part of realizing mHealth Kenya Vision, Mission, Mandate and strategic directions.
10. Expand the reach of our wellness strategy to inspire our people to be the healthiest they can be by providing comprehensive health information and promoting healthy choices.
11. Continue to build a preventative safety culture where we identify and act on risks before incidents occur.

How we will measure success

1. Improving employee engagement levels across the organization
2. Increasing talent attraction and retention levels
3. Improving staff health and cost savings
4. Information and enables effective and efficient decision-making
5. Improving client satisfaction with our services.

Responsible Party
CEO, CTO, COO, CFO

4.4 Change Management

Part of this plan is to document a roadmap to help mHealth Kenya to create a structural framework to communicate its vision to its internal and external stakeholders and partners.

Our change management approach is tiered at three levels:

a) Organisational change management
b) MOH, implementing partners and community change integration
c) Funding organisations/donors change management.

Figure 9: Change Management

4.5 Risks and Risk Mitigation

The following risks have been identified as well as risk mitigation measures

Risk	Mitigation
Lack of innovation	Establishment of innovations hub
Speed to market of products	
Wrong products in wrong markets	
Lack of partners	Engage partners and collaborators
Politics and government bureaucracy	
Disparate systems	
Lack of adoption of products/services	Disseminate relevant product/service information
Lack of accreditation by health facilities	
Lack of proper M&E systems	Build an agile organisation with clear responsibilities
Lack of strategy focussed org. structure	

5. Product and Market Development

This strategic plan is ambitious and envisages that mHealth Kenya will chart the path for e/mHealth interventions in the region. We plan to be innovators of visionary technological solutions to health challenges with the desired goals of improving health outcomes and quality of life to the public. We will therefore develop, implement and sustain solutions that are currently needed by the industry (pull strategy) and those that the industry might need in the future (push strategy).

The Ministry of Health has been our principal partners, and shall maintain that position during our e/mHealth solutions formative phases. Most of the solutions will be targeted at assisting the MOH to deliver on its mandate and quality health care services to the public. To ensure that the entire value chain is covered by our innovative ideas, we will collaborate with like-minded partners and stakeholders in enhancing the functionalities of our solutions.

Our product and market development strategies will focus on creating growth opportunities by increasing revenue through exploiting existing demand and capturing new market share for mobile health products and services by creating differentiation.

5.1 Strategic Partnerships

We will cultivate strategic collaborations with implementing partners to build capacity, improve solutions functionalities, and systems sustainability for better outcomes by using our e/mHealth interventions.

5.1.1 Implementing partners

Consulting Firms	
1. KPMG	2. PWC
3. Deloitte	4. Ernst & Young

Telecommunication companies	
1. Safaricom	2. Airtel
3. Orange	4. Equitel

Academia	
1. JKUAT – Department of Computer Science	2. Kenyatta University
3. UON – School of Computing & Informatics	4. University of Manitoba
5. Moi University	6. Strathmore University

5.1.2 Donors and foundations

Local and international financial institutions	
1. KFW/GIZ	2. Equity Bank
3. World Bank	4. European Union
5. Barclays Bank	6. Standard Bank
7. Kenya Commercial Bank (KCB)	8. African Development Bank

Foundations	
1. UN Foundation	2. Ford Foundation
3. Safaricom Foundation	4. CDC Foundation
5. Rockefeller Foundation	6. Equity Foundation
7. Pharm Access Foundation	8. Bill & Melinda Gates Foundation

United Nations	
1. Food & Agriculture Organization (FAO)	2. World Health Organization (WHO)
3. World Organization for Animal Health	4. UNICEF

International donors and development agencies	
1. CDC/PEPFAR	2. CDC/GHSA
3. DFID	4. USAID
5. DANIDA	6. Johnson & Johnson
7. St. John's	8. GSMA

5.2 Product and Service planning

mHealth Kenya plans to implement the following products and services:

Product/Service	Description	Target/Partners
Text 4 Adherence	Provide a platform to assist health care workers and practitioners to reinforce adherence to ARVs and other medication, hospital appointments and to pass information to the public	• Donor agencies • NASCOP • EGPAF • ITECH
KEMSA eMobile, mPEP Care System, Text for Life, e-Marps KP System	Enhancement, support and scale up of the existing applications already developed. Most of these will be available on android and ios platforms and will be scaled to the larger target populations as required by each program.	• NASCOP • KNBTS • KEMSA • UOM & UON • IRDO & IMC • North Star Alliance
mEMR	Availing the Electronic Medical Record into a mobile platform for use in remote facilities. Enable health care workers to collect medical records on mobile platforms to link patient care from county level to national level. To integrate the mEMR to the central data depository at the Ministry of Health	• MOH • NASCOP • ITECH • EGPAF
mHealth Kenya SMS	To reduce turnaround times for submission of Viral load, CD4 Count, TB, EID PCR and other test results from labs to facilities in remote facilities using SMS	• MOH National • MOH Counties

Printers	Printers. The results are submitted in form of SMS and is received and prints from an SMS Printer sitting at the requesting facility	• NASCOP • Implementing partners • CHAI
mLearning Platform	Content and information sharing platform to enable healthcare workers and the public to learn about various health related topics. The platform could be used by health care workers by accessing necessary MOH guidelines.	• MOH National • MOH Counties • KNBTS • NASCOP • Donor agencies
Analytics Lab	Have a team of data scientists who crunch data and present it into KPIs required by our partners. Data will be collected using the services and solutions deployed by mHealth Kenya or will be sourced from the clients.	• Private & Public Medical facilities • MOH • NASCOP • Donor agencies
mHealth Standards & Guidelines	Work in partnership with the Ministry of Health and other stakeholders in coming up with mHealth Standards and Guidelines that can be used to guide mHealth innovations and implementations in the country.	• MOH E-Health • ICF International • ITECH

6. Glossary

API	-	Application Program Interface
CDC	-	Center for Disease Control and Prevention
CHAI	-	Clinton Health Access Initiatives
CLSS	-	Center for Lean Six Sigma
CRM	-	Customer Relationship Management
EGPAF	-	Elizabeth Glaser Pediatric AIDS Foundation
e-Health	-	electronic Health
EID	-	Early Infant Diagnosis
EU	-	European Union
GHSA	-	Global Health Security Agenda
HDI	-	Human Development Index
HIV/AIDS	-	Human Immunodeficiency Virus, Acquired Immunodeficiency Syndrome
HTC	-	HIV Testing and Counseling
ICT	-	Information & Communication Technology
IMC	-	International Medical Corps
IRDO	-	Impact Research and Development
ITECH	-	International Training & Education Center for Health
KEMRI	-	Kenya Medical Research Institute
KEMSA	-	Kenya Medical Supplies Authority
KNASP	-	Kenya National Aids Strategic Plan
KNBTS	-	Kenya National Blood Transfusion Services
KPI	-	Key Performance Indicators
m-EMR	-	mobile Electronic Medical Record
m-Health	-	mobile Health
MMR	-	Maternal Mortality Rate
MOH	-	Ministry of Health
MTEF	-	Medium Term Expenditure Framework
MTP	-	Medical Therapy Program
NASCOP	-	National AIDS & STI Control Program
NCD	-	Non-Communicable Diseases
NGO	-	Non-Governmental Organizations
NHIF	-	National Health Insurance Fund
PCS	-	Polymerase Chain Reaction
PEPFAR	-	President's Emergency Plan for AIDS Relief
PMTCT	-	Prevention of Mother to Child Transmission
R&D	-	Research & Development
SME	-	Small & Medium Enterprise
TB	-	Tuberculosis
UK	-	United Kingdoms
UN	-	United Nations
UOM	-	University of Manitoba
UON	-	University of Nairobi
USA	-	United States of America
WHO	-	World Health Organization

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