

INFORMATION PAPER
on
Main eHealth activities outside of the EU

Annex 6
Main Nigeria eHealth policies and activities

LIST OF ABBREVIATIONS

ACRONYM	DEFINITION
ECOWAS	Economic Community of West African States
NHIS	National Health Insurance Scheme
NITDA	National Information Technology Development Agency
NSHDP II	National Strategic Health Development Plan Framework II
PHC	Primary Health Centres
OML	Saving One Million Lives

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Preamble

Object

The present document is an Annex to Joint Action to support of the eHealth Network (JAseHN) Deliverable 8.1.4 in WP8 "Report on main eHealth activities outside of the EU". It has been prepared by Norbert Paquel (external, director of Canope cabinet – France) under the control of Michèle Thonnet (Work Package leader-FRNA), then corrected and approved by the sPSC.

The objective of D8.1.4 is to observe the situation in various countries in order to better understand the development factors and main trends in the worldwide movement towards a tighter integration of ICT tools in healthcare but also to be able to initiate cooperation when advisable and possible. To that end, concrete projects have been identified as potentially interesting for eHN Member States (MS) exchanges or cooperation. These opportunities would need deeper analysis, through direct contact with experts, notably local representatives of the concerned MS or participants in EU projects.

Methodology

As explained in the main D8.1.4 document, the research was based on a desk study carried out between 2017/02 and 2017/08. It is important to note that time runs often very fast in the eHealth and mHealth domains. Accordingly, contrary to healthcare organizations and fundamental policies trends, concrete programmes and projects can change rapidly. However, if they correspond to clear needs and sustainable methods, they should not disappear. Moreover, when possible, some of the main important developments that have occurred since August 2018 have been taken into account.

Nigeria: basic information on the country

Nigeria is the most populous country in Africa with approximately 184 million inhabitants. With 5.5 live births per woman and a population growth rate of 3.2% annually, it is estimated to reach 440 million people by 2050.

It is a federation of 36 states (plus one Federal Capital Territory); its political organisation is modelled after the United States.

It is Africa's largest economy, though it lost briefly the title to South Africa in 2016 due to the country facing its first economic recession since 1991. The economy is heavily dependent on oil revenues (making up one third of the country's income and 80% of fiscal revenues) and was thus very affected by the collapse of crude oil prices. At the same time, attacks on oil facilities by military insurgents in the South of the country is causing a decline in production and forcing the Nigerian army to focus on the area and neglect the norther conflict with terrorist group Boko Haram.

The 2017 « Economic Recovery & Growth Plan », spanning till 2020, aims at restoring growth, building a competitive economy and investing in the Nigerian people. With many structural reforms, the plan focuses on achieving macroeconomic stability; economic growth and diversification; competitiveness and business environment; and governance and security.

- I -

Health and Healthcare background

1. Elements on health situation

1.1 Main concerns

Health indicators in Nigeria are some of the worst in Africa:

- average life expectancy is 52 (lower than half of African countries) and is projected to only increase marginally to 56.2 years in 2025
- 500 000 people live with HIV (9% of the global HIV burden).
- maternal mortality is 576 per 100,000 livebirths, and under five mortality 128 per 1,000 live births; about 900,000 women and under-five children die each year, largely from preventable causes;
- Nigeria has the highest burden of malaria globally; it is the top cause of child illness and death;
- the density of doctors and nurses/midwives in Nigeria is 4 and 16 per 10 000 populations, respectively;
- malnutrition affects 40% of the population;
- alcohol consumption and tobacco use are exceptionally high.

Poverty and large-scale corruption are major obstacles to improvement in the health and well-being of the Nigerian population. According to Oxfam, 12% of national income is lost to corruption. Great disparities in health status exist in Nigeria across states and geopolitical zones. Poverty reaches 70% of the population in the North against 52% in the South. Furthermore, the conflict with Boko-Haram has destroyed many healthcare facilities in the North; in Borno, more than 40% of facilities have been lost since 2013.

1.2 Important national health policies

The 2017 « Economic Recovery & Growth Plan » recognizes insufficient financing, inadequate and inequitable access, weak supply chain management, limited human resources capacities and insufficient coordination, cohesion and accountability as reasons for the poor performance of the national healthcare services. Its health policies objectives are:

- Improve the availability, accessibility, affordability and quality of health services;
- Expand healthcare coverage to all Local Governments;
- Provide sustainable financing for the health care sector;
- Reduce infant and maternal mortality rates.

Proposed strategies to achieve these objectives include:

- Revitalise the primary healthcare system;
- Roll out universal health coverage;
- Strengthen delivery beyond the primary healthcare system by focusing on patients living with AIDS/HIV, strengthening tertiary healthcare institutions, connecting specialized hospitals to rural communities via mobile tele-medicine;

- Partner with the private sector to develop at least one mega-health centre in each State to provide high-quality preventive and curative healthcare;
- Build the capacity of health care personnel to improve service delivery.

Saving One Million Lives (SOML), a government-led initiative supported by World Bank funding, was launched in September 2016. The plan involves:

- articulating strategic priorities for the Government of Nigeria and the rest of the health sector and strengthening the long-term commitment to improving the delivery of these high impact interventions;
- establishing a limited set of clear and measurable indicators by which to track success;
- strengthening data collection so that these indicators can be measured more frequently and more robustly;
- bolstering accountability so that managers and health workers at all levels are engaged, encouraged, and incentivized to achieve better results;
- fostering innovations that increase the focus on results and include greater openness to working with the private sector.

To encourage focus on results, continuous funding will be transferred only to states achieving improvements in the coverage and quality of key maternal and child health services as measured by independent household and health facility surveys. It will be implemented over four years.

A draft National Strategic Health Development Plan Framework II (NSHDP II) was adopted in early 2017 with WHO support, with a main goal of improving access to quality health care. It will also generate buy-in across different tiers of government, health and development partners, civil society and the private sector in order to optimize the utilization of available resources for health.

2. Healthcare system

The Nigerian healthcare system includes the public sector, private for-profits, non-governmental organizations, community-based organizations, faith-based organizations, and traditional healthcare providers.

Public health care is structured around three levels:

- the federal government coordinates university teaching hospitals and federal medical centres, provides regulation and formulates and implements health policies;
- states governments manage general hospitals;
- local governments focus on dispensaries.

A non-mandatory National Health Insurance Scheme (NHIS) was introduced in 1999, aiming at universal coverage, but penetration remains low: less than 5% of the population is enrolled in the NHIS.

3. Motivations for selecting Nigeria for eHealth study

Nigeria has some of the lowest health indicators in Africa despite being its largest economy.

The Cotonou Agreement is the most comprehensive partnership agreement between developing countries and the EU. Since 2000, it has been the framework for EU relations with 79 countries from Africa, the Caribbean and the Pacific (ACP), including Nigeria. The Cotonou Agreement is aimed at the reduction and eventual eradication of poverty while contributing to sustainable development.

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The European Commission Humanitarian Aid and Civil Protection (ECHO) supports international relief organisations operating in Nigeria. Since 2010, the European Union has funded humanitarian partners in providing emergency food assistance, health and protection to displaced people and victims of conflict, as well as in improving the community management of acute malnutrition.

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Telemedicine and eHealth development

4. A proliferation of profitless projects

Many eHealth projects have been implemented in Nigeria as small-scale pilot projects. Much of these eHealth initiatives were driven by the private sector in the absence of a nation-wide strategy. Many did not yield lasting results, mainly due to a lack of stakeholders' involvement, low funding, deficiency of a common system to integrate multiple systems in the country, and shortage of medical manpower skilled in ICT.

As for the successful projects, their impacts are not significant in regard to the country's health situation. Benefits of an adequate amplitude require scaling-up the level of ICT integration in healthcare.

The proliferation of ITC health projects, even when unsuccessful in the long run, led to Nigeria being assessed as transitioning from 'experimentation and early adoption' to 'developing and building up' in a 2014 government-mandated report, « Assessing the Enabling Environment for ICTs for Health in Nigeria ».

Mailafiya Health Program

Mailafiya means "he who brings life" in Hausa. A partnership with Intel Corporation, it was launched in 2009 as a mean to remedy to the lack of sufficient Primary Health Centres (PHC). It integrates an eHealth component into existing primary care delivery systems, with a special focus on using new ICT tools to serve and track health data around rural, poor communities.

The initial rollout consisted of six mobile medical teams, each composed of a doctor, a nurse, a community health worker, and a driver. In addition to off-road trucks, basic healthcare tools, and drug kits, the teams were equipped with netbook PCs and software enabling data collection into an electronic Health Record, including patient IDs and patient pictures.

These ICT tools helped teams improve drug dispensing, treatment follow-up, and referrals. The improved data flow enabled the right healthcare interventions at the right time.

The total number of patients seen by PHCs within the pilot area in 2008 was 3,730. In 2009, after the launch of the project, the same PHCs served 10,043 patients—an increase of 270%. A 900 percent increase in diseases reported, compared to static primary care facilities, which allowed for faster response to critical health trend. Based on these results, the program was scaled to cover 336 communities across the six area councils and later to 13 primary health care clinics, two private secondary hospitals and three public general hospitals.

However, the expansion of the Mailafiya to secondary health facilities was not a success. Key reasons for the failed pilot included a lack of acceptance and ownership of the project – and hence resistance to change – by health workers, low basic computer literacy among health workers, lack of sustainable funding, weak governance and regulation, and a poor state of ICT infrastructure including internet connectivity and regular power supply.

5. An ambitious nation-wide plan for the future

5.1 Towards government intervention

A National Health Policy and the National Strategic Health Development Plan Framework (2009 – 2015) was developed by the Federal Ministry of Health, in conjunction with the National Information Technology Development Agency (NITDA). However, the government lacked the willpower to implement the policy.

Recognizing the widespread application of ICT in healthcare but that the full benefit of these applications was not realized due to uncoordinated health-ICT ecosystem. The government mandated an assessment of the enabling environment for Health ICT in 2014. The report, «Assessing the Enabling Environment for ICTs for Health in Nigeria», determined that infrastructure and human resources for health ICT were found to be inadequate in most institutions. It also identified the need for a coordinated Health ICT Strategy.

Following these results, the Nigerian government has proposed a generic and unifying Health ICT strategy, the National Health Information and Communication Technology (Health ICT) Strategic Framework, that should be used to generate demand for, increase access to, and improve the quality of health services. The strategy is tailored toward addressing the critical need to coordinate information and resources across the health system. It is driven by an ambitious vision: “By 2020, health ICT will help enable and deliver universal health coverage in Nigeria.”

5.2 Drawing from the WHO-ITU eHealth strategy toolkit

The elaboration process used the components of an enabling environment from the WHO-ITU eHealth Strategy toolkit to provide a strategic and policy-oriented framework. Specific recommendations were identified for all framework components.

Each of the health ICT enablers identified in the WHO-ITU toolkit is expected to yield specific outcomes leading to the general UHC objectives.

- **Leadership and Governance**

A National Health ICT Steering Committee and supporting structure will be installed. The Steering Committee will be responsible for overseeing Health ICT planning, implementation, coordination, governance and evaluation to the achievement of the Health ICT Vision.

- **Strategy and Investment**

The Strategic Framework recommends drawing from existing health information systems and ongoing and planned activities to leverage current investments in lowering overall costs while maximizing downstream value and providing direction to ensure achievement of the National Health ICT Vision. It also suggests capitalizing on current funding sources and exploring creative means of funding — catalytic funding, incentives for entrepreneurs and developers.

A recommendation has been made to establish a trust fund for Health ICT to pool government and development partner resources to simplify the management and investment of funds and promote transparency and accountability.

- **Legislation, Policy & Compliance**

The strategy includes legal and regulatory measures, public policy, and observance of rules and regulations related to health ICT initiatives. There is a special focus on ensuring privacy and security of personal health information.

- **Architecture, Standards and Interoperability**

In recognition of the significant Health ICT investments already underway in Nigeria, the Strategic Framework draws from and seeks to coordinate existing projects. A National Health

ICT Architecture, that builds on existing Health ICT solutions in Nigeria and best practices from other countries, was proposed; with strategic coordination, the systems could support a broad set of health system use cases.

- **Capacity Building**

An electronic health workforce registry (eRegistry) has already been implemented; it has improved the management of a subset of the health workforce and enabled the tracking of capacity building activities and health worker competencies.

In addition to incorporating Health ICT training into standardized curricula, the eRegistry and other services and applications present an opportunity for a nationally scaled health workforce registry and digitally supported health and ICT workforce education and training.

- **Infrastructure**

Infrastructure is inadequate to scale up Health ICT systems nationally, especially in remote areas. Existing programs should be coordinated toward the Strategic Framework vision and may be leveraged.

- **Services and Applications**

There are numerous Health ICT tools at varying degrees of maturity implemented throughout the country. Prevalent cellular coverage and mobile subscriptions throughout Nigeria has encouraged experimentation with mHealth or mobile-supported interventions, especially within maternal and child health. These includes apps such as:

- Zero Mothers Die App, a mHealth application providing critical maternal health and newborn care information to pregnant women, new mothers and the frontline health workers serving their communities; the Zero Mothers Die Consortium is composed of the Advanced Development for Africa Foundation, Millennium2025 Women and Innovation Foundation and Universal Doctor Project, in partnership with UNAIDS, Airtel and Global Partnerships Forum.
- OMOMI (meaning 'my child'), a mobile platform consisting of a mobile app and an SMS service that enables mothers and expectant mothers monitor their children's health, as well as provide access to relevant maternal and child health information plus medical expertise.
- Gifted Mom software, a health app that provides automated SMS alerts to subscribers. It enables pregnant women track their antenatal care schedule; the platform sends notifications about pregnancy related facts. It also allows women to ask questions about their condition and provides answers to those questions.

The Strategic Framework recognizes the need to focus on the services and application that are best suited to specific needs and that can be scaled up.

5.3 Expected outcomes

To implement the Strategic Framework, a 5-year action plan will be implemented, with a first phase dedicate to set-up (year 1), a second phase to reply, maintain and support actions (years 2 and 3) and a third phase of consolidation and continuous review (year 5).

A success of the plan should provide:

- improvement in and access to health services through the effective use of telemedicine and other ICT for health worker training and support;
- reinforcement and better coverage of health services through the effective use of civil registration and vital statistics, a national identity management system, human resource management information systems, a national health management information system, and a

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logistics management information system for tracking the demand and supply of health services and commodities;

- increased uptake of health services through the effective use of mobile messaging and cash transfer incentives for demand creation;
- improvement in the quality of care through the effective use of ICT for decision support within the continuum of care;
- increased financial coverage for healthcare services through the effective use of ICT for the National Health Insurance Scheme and other health-related financial transactions;
- increased equity in access to and quality of health services, information, and financing through the effective use of ICT for delivering appropriate health services for those who need them.

- III - Main conclusions

6. A policy towards eHealth development

6.1 Key success factors for the Health ICT Strategic Framework

The success of the Health ICT Strategic Framework rests on many factors, amongst which are:

- develop and periodically review the Strategy;
- set up structures and processes to ensure proper investment and management of allocated funds at the National and State levels;
- leverage existing information systems, including the Health Finance Information System;
- secure sustainable funding.

A continuous commitment to the strategy by the government is also paramount to its success. Dr. Muhammed Lecky, Strategic Advisor, International Development Research Centre/Nigeria Evidence-Base Systems Strengthening Initiative, notes that so far “every attempt to achieve a coherent form of an articulated policy framework regarding telemedicine and eHealth in Nigeria hitherto proven abortive.” The total lack of any result yielded by the previous Health ICT strategy is a clear reminder of the importance of the political will in the matter.

6.2 A will to draw from past experiences and build on the present

The elaboration of the Health ICT Strategic Framework shows a commendable will to use lessons learned from past successes and failures in implementing eHealth projects in Nigeria.

The main recommendations that can be derived from these are:

- **Establish common goals with a broad set of stakeholders**

Implementation of a Healthcare ICT project will impact numerous stakeholders, including community leaders, healthcare officials at many levels, and various healthcare practitioners. Engaging with them can help bridge communication, cultural gaps, and also give a sense of ownership in the project stake; this practice also helps building trust with stakeholders.

- **Establish clear success metrics and use them.**

Clear success metrics help articulate the program value—both potential and actual—to stakeholders and increase positive mindshare.

- **User training is critical**

Training healthcare workers adequately is key to smooth adoption and effective use of the ICT tools.

- **Leverage the entire existing connectivity infrastructure**

Any project designs should comprehend all local connection protocols to maximize functionality and ease of use.

- **eHealth tools must operate within an ecosystem**

Link any new services or capabilities to the existing public health services structure, to maximize effectiveness and minimize adoption costs.

- **Make use of standards and open sources technologies**

Utilize standards and open source technologies wherever feasible, to keep costs down and enable easy scaling of successful solutions.

- **Manage behaviour change**

Continuous user support and regular field visits help mitigate shortcomings arising from the transition process induced by the implementation of various projects and thus facilitate a more permanent behaviour change.

7. Good practices

The case of Nigeria shows the importance of a global approach in implementing ICT in healthcare systems.

- All stakeholders should be included when defining eHealth projects goals;
- New eHealth tools should be find a natural place in existing systems and work with existing services and structures;
- User adoption should be encouraged by adequate training and behaviour change management.

- IV -

Potential for cooperation

8. Main domains and axes for exchanges and cooperation

The national plan on eHealth stresses the importance of the human factor: will to implement change, behaviour management and adequate training for health care workers, necessity of coordinating and sustaining a coherent framework.

There are numerous eHealth tools at varying degrees of maturity implemented throughout the country, especially within maternal and child health. The Strategic Framework recognizes the need to focus on the services and application that are best suited to specific needs and that can be scaled up.

9. Programmes and projects

The following paragraphs use basic elements of the provisional grid described in the D8.1.4 main document (II – 12.3). There are four categories:

- Learn: the project is a rich source of information for a country confronted to similar problems or working in a similar international action
- Mutual enrichment: development of exchanges between project actors and concerned parties among eHN MS, active in similar projects in their country or abroad.
- Help and support: which can be technical, promotion, financing.
- Participation: co-construction of the project and similar ones.

9.1 Universal Access

- **Mailafiya Health Program** - 2009 (*see 4*) - integrates eHealth component into primary care delivery systems - track health data around rural, poor communities.

Objective for following

Learn and perhaps Help: which difficulties have blocked extension, organization of mobile team, mHealth tools

9.2 Organization, methods, architecture

- **Drawing from the WHO-ITU eHealth strategy toolkit** - 2014 (*see 5.2*)

Objective for following

Learn and Support: Using the toolkit in a developing country is a challenge. There is much to learn on usage, adaptation, difficulties – it will be interesting to exchange with the National Health ICT Steering Committee

- **National Health ICT Architecture – (5.2)**

Objective for following

Learn and Support: with strategic coordination, the system is intended to support a broad set of health system use cases. Building this architecture is a challenge but it is precisely interesting to see what is possible, what obstacles and difficulties, especially for countries engaged in development support programmes

9.3 Capacity building

- **Electronic health workforce registry – (5.2)** – Implementation has started on a limited population, project to link to education and training

Objective for following

Learn, Mutual enrichment, Help and Support: a fundamental element for future organization and services, notably for education and training programmes – should interest in any country situation and of course in developing ones

9.4 Mother and Child – new mHealth apps (5.2)

- **Zero Mothers Die App** – care information for pregnant women, new mothers and health workers
- **OMOMI** – mobile app and SMS service on children's health and access to medical expertise
- **Gifted Mom software** – SMS alerts, care schedule, notifications and questions for pregnant women

Objective for following

Learn, Help and Support: the mHealth apps world is international – these apps may be supported (financing) by interested countries and investors

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Main sources

WHO Country Cooperation Strategy 2014 - 2019

National Health ICT Strategic Framework 2015-2020 - October 2015 draft for review

Learning From Failure: Lessons From Nigeria About Integrating Technology Into Rural Health Systems - Dr. Iniobong Ekong 2017