JASEHN
Joint Action to Support the eHealth Network

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INFORMATION PAPER
on
Main eHealth activities outside of the EU

Annex 9
Main South Africa eHealth policies and activities

LIST OF ABBREVIATIONS

ACRONYM	DEFINITION
BRICS	Brazil, Russia, India, China and South Africa
HNSF	Health Normative Standards Framework
NDoH	National Department of Health
NDP	National Development Plan

TABLE OF CONTENTS

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.

South Africa: basic information on the country

Despite being only the second largest economy in Africa (behind Nigeria) and the 6th for population (54,300,704), South Africa is an undisputable continental leader thanks to economic power, political weight, military might, and moral authority. South Africa also benefits from goodwill based on the country's successful handling of its past. Accordingly, it has an undisputed preponderance in the African continent. This allowed the country to become a member of the BRICS (Brazil, Russia, India, China and South Africa) association in 2010 despite its economy being significantly smaller than those of other members. The nation is amongst the G-20, and is the only African member of the group.

However, South Africa remains a dual economy with one of the highest inequality rates in the world, perpetuating both inequality and exclusion. Inequalities are mainly derived from unemployment, in turn derived from a poor education system. Unemployment rate hit a 12-year high in 2016, at 27.3% in the third quarter. The unemployment rate is even higher among youths, close to 50%. The country has been caught in an extended middle-income slow-growth trap for many years, caused in part by the global economic crisis, but also by some structural factors (poor efficiency of the mining industry, slow domestic demand). Poverty has remained at a high level through the 2010s (15.9%. in 2016).

The 2030 National Development Plan, implemented on 19 February 2013, comprises the two main strategic goals of eliminating poverty and reducing inequality from 0.70 to 0.60 by 2030. Three priorities were outlined:

-   Raise employment through faster economic growth
-   Improve the quality of education, skills development and innovation
-   Build the capability of the state to play a developmental, transformative role.

- I -
Health and Healthcare background

1. Elements on health situation

South Africa faces a quadruple burden of disease:

- HIV/AIDS epidemic alongside a high burden of tuberculosis (TB)

- high maternal and child mortality

- high levels of violence and injuries

- a growing burden of non-communicable diseases (NCDs)

2. Healthcare system

2.1 A fragmented system

The roots of a dysfunctional health system in South Africa can be found in policies from periods of the country's history, from colonial subjugation, apartheid dispossession, to the post-apartheid period. Racial and gender discrimination, the migrant labour system, the destruction of family life, vast income inequalities, and extreme violence all have affected health and health services.

Healthcare is distributed between the public and private sectors with evident disparity between the two systems. The country's history has had a direct impact on its healthcare system: the inequity in South Africa was most obvious during the apartheid period in a racially divided health system. The legacy of fragmentation is evident in a health system divided into two parallel sectors – a private and public sector, with the latter having a disproportionately lower amount of financial and human resources at its disposal relative to the former. Almost half the national expenditure is in the private sector, serving 16.2% of the population. The public system serves the vast majority of the population, but is chronically underfunded and understaffed; about 79% of doctors work in the private sector.

Health services in South Africa are delivered across three levels of government: national, provincial and local. In terms of the South African Constitution, both national and provincial governments have concurrent jurisdiction over health as a service delivery area, i.e. both make decisions and have a duty to deliver services. In practice, the role of the National Department of Health (NDoH) focuses on legislation, policy, norms and standards (both the public and private health care sectors), and ensuring equity, while the role of the provincial departments of health is focused on the planning, budgeting and delivery of health services at the coalface. Local government is responsible for the delivery of municipal health services.

2.2 National Development Plan

The National Development Plan (NDP) is a long term South African development plan, developed by the National Planning Commission. It aims at implementing a national health insurance system, reducing the relative cost of private medical care.

Reforms of the public health system should focus on:

- Improved management, especially at institutional level

- More and better-trained health professionals

- Greater discretion over clinical and administrative matters at facility level, combined with effective accountability

- Better patient information systems supporting more decentralised and home-based care models

- A focus on maternal and infant health care.

In December 2015, the government published a white paper on the introduction of a national health insurance (NHI) scheme to achieve universal health coverage (UHC). On June, the 30th 2017 the National Health Insurance policy document was gazetted after approval by Cabinet.

The plan was supposed to be implemented in three phases:

- The first phase is designed to equip all hospitals with specialized services.

- The second is to register all citizens who qualify, and to contract all hospitals, emergency medical services, the National Health Laboratory Services (NHLS) and clinics accredited by the Office of Health Standards Compliance (OHSC) to provide services.

- The third phase will require all employed people to make payments towards the fund in order to contract private health service providers and keep the system working. The Medical Schemes Act will be amended accordingly, and Medical Aids will only provide complementary services that the NHI will not cover.

Slow progress in implementing the plan are due first to a lack of financial sustainability: only estimates were initially given as to what it might cost to bring the project to life; it seemed unlikely that later more precise estimates would be met with enough funding. Another issue is the current state of Government hospitals and clinics, lacking in updated infrastructure, equipment and information systems.

3. Motivations for selecting South Africa for eHealth study

South Africa is the only African member of the G20 and is part of the BRICS group. It is an economic power on a global scale which faces health issues commonly found in developing countries.

- II -
# Telemedicine and eHealth development

4. National strategies

Deliberate action to better integrate information communication technologies (ICT) in health originated in South Africa in the 90s and went along in the 2000s with a focus on using Telemedicine as an efficient tool to improve primary care services in the rural areas of South Africa. However, **health information systems in South Africa remained characterised by fragmentation** and lack of coordination, prevalence of manual systems and lack of automation, and, where automation existed, lack of interoperability between different systems as well as a lack of policy frameworks for all aspects of infrastructure delivery.

The eHealth Strategy implemented in 2012 aimed at paving the way for future public sector eHealth requirements and laying the requisite foundations for the future integration and coordination of all eHealth initiatives in the country (both public sector and private sector). It provided a roadmap towards "an integrated and well-functioning national patient-based information system, based on agreed upon scientific standards for interoperability". The Strategy defines **eHealth as a broad domain which includes mHealth, telemedicine and all ICTs used to promote, support and strengthen healthcare**.

5. Standards Framework

In 2014, a research project that was part of implementing the eHealth Strategy observed that eHealth investments of the NDoHh had yielded local benefits but not created the desired 'network effect' because of a **lack of interoperability between heterogeneous IT systems.** The report proposed the "National Health Normative Standards Framework for Interoperability in eHealth in South Africa", commonly referred to as the Health Normative Standards Framework (HNSF). The role of the report was to articulate an interoperability framework that represents a first step towards developing a comprehensive health enterprise architecture specification which could be used to achieve a network effect in the country.

Figure 1: The process of developing South Africa's national Health Normative Standards Framework[1]
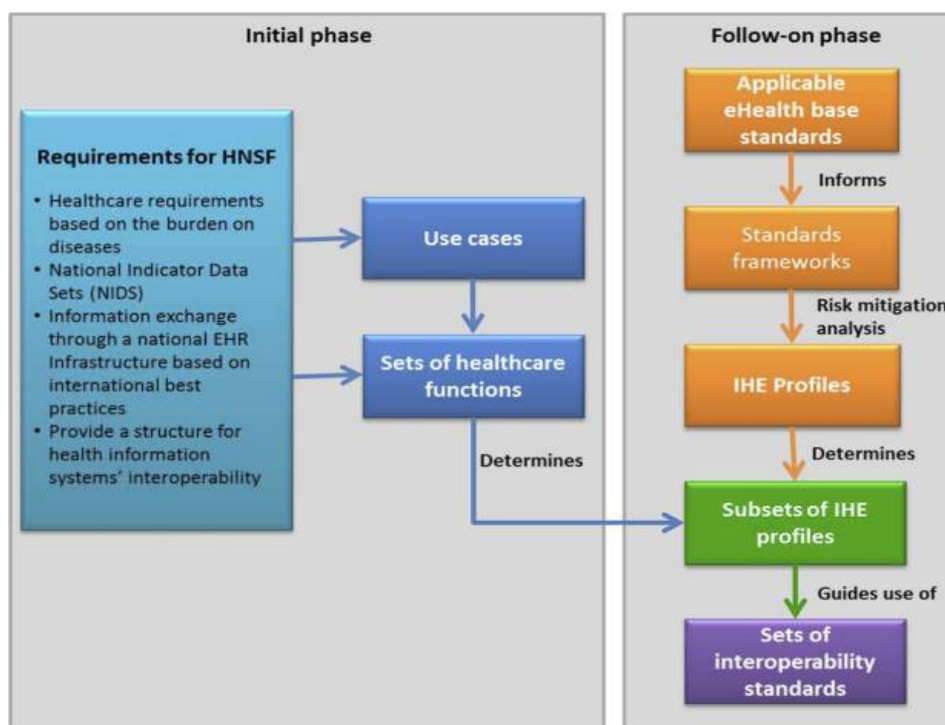
6. MHealth

6.1 General conditions and successes

The first trend in the South African mHealth environment is that most of the initiatives are **donor funded** (NGOs, International Organizations and private corporations, including Mobile Network Operators); there is no significant business model that would ensure sustainability beyond a donor involvement.

The vast majority of mHealth implementations in South Africa are aimed either at the general public or at a segment of the public with a specific health related need. Many of the devices in use in Sounth-Africa are feature phones, thus **mHealth applications aim at the lowest barrier of entry, frequently using voice or signalling channels**.

Services aimed at healthcare workers and institutions generally provide a richer interaction through mobile data services or on-board applications. Such eHealth tools tend to facilitate healthcare mobility, extending the reach of the health system by mitigating contextual connectivity, electricity and PC availability through the use of mobile technology.

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[1] Shadrack Katuu, (2016) "Transforming South Africa's health sector: The eHealth Strategy, the implementation of electronic document and records management systems (EDRMS) and the utility of maturity models", Journal of Science and Technology Policy Management, Vol. 7 Issue: 3, pp.330-345, https://doi.org/10.1108/JSTPM-02-2016-0001

Success story: MomConnect

MomConnect is the first nationwide mHealth project in South Africa. It was launched in 2014 after reviewing the success of similar, smaller initiatives. It is a free service that aims to use mobile health tools, messaging services and other platforms to create awareness among pregnant women about available health services for their infants.

It's a collaborative pilot project between the National Department of Health and many other organizations (non-profit, research and professional).

The project is aimed at all South African mothers from pregnancy through the first year of the child, with three main objectives:

- To register each pregnancy at a government health facility;

- To send stage-based, personalised SMSes to registered women;

- To allow women to engage with the health system through help desk tools and services.

Variables linked to the identification of the women and the facilities allow MomConnect to link with other national information systems under development.

Several components allow women to give feedback to the helpdesk located in the NDoH.

MomConnect sends information via a national health information exchange to a central database in the NDoH, where it can be linked with other information in the NDoH.

Between August 2014 and February 2015, over 30,000 health care workers were trained to register women on MomConnect. Nearly all (95%) of public sector facilities have registered women on MomConnect. A survey conducted one year after implementation showed high satisfaction rates amongst users.

6.2 mHealth strategy 2015-2019

Recognizing the impact of mHealth, which could be considered as the most successful telemedicine type in South Africa, **the NDoH implemented a specific mHealth strategy in 2015**. The strategic roadmap was divided between actions aimed at strengthening health systems effectiveness, preventing disease and reduce its burden and promote health, and strengthen research and development.

Main purposes are supporting the medium term priorities of the public health sector, paving the way for future public sector mHealth requirements, laying the requisite foundations for the future integration and coordination of all mHealth initiatives in the country (public and private), and addressing and meeting the need of individuals (so that they are empowered to maintain and promote their own health as well as that of their families and communities), providers of healthcare services, healthcare managers and policy makers

- III -
Main conclusions

7. Toward a new eHealth strategy

Classic impediments have remained persistent in implementing eHealth projects:

- Huge financial investments required for eHealth implementation.

- Unavailability and cost of broadband connectivity to support the implementation of health information systems and other eHealth tools.

The 2012-2017 eHealth strategy has helped the health sector in its transformation agenda but has also raised critical issues that need to be addressed in future strategy documents.

- Investment into change management at point of data collection (i.e. facilities) for health worker migrating from paper-based to electronic systems.

- Integration and interoperability are key for government to derive utility value from eHealth tools.

- Strengthen governance of information systems and their acquisitions at various levels of the health sector.

- Strengthen collaboration with other sectors to address the challenge of poor Internet access and cost of Internet access in South Africa.

- Integrate Patient Administration and clinical (case based) systems.

- Culture shift: improve filing systems, patient administration system and clinical record keeping as well as training of clinical providers and administrative staff (data capturers).

- Improve knowledge management platforms and data use at various level of health care in order to improve data quality.

South Africa illustrates the general difficulties and advantages of fast emerging countries. No mature and entrenched Information systems which foster two key developments which are un fact a strong basis for modern eHealth:

- Start from data and process standards instead of connecting mature systems through heavy platforms

- Let all actors exploit mHealth, even with feature phones

8. Good practices

8.1 Implementing health normative standards

The case of South Africa outlines the importance and difficulty in developing health normative standards, a process which must take into account the heterogeneity of existing systems on the one hand, the desired degree of interoperability on the other.

The South African process towards health normative standards could provide a good basis for work in a fragmented and diverse health information systems environment.

8.2 Reaching scale

Reproducing the success of small eHalth initiatives on wider scales has often proved difficult. The success of the MomConnect Projects reveals the importance of the following factors:

- **Political support and leadership**: because MomConnect is championed by the Minister of Health, it is automatically given endorsement by many stakeholders, who would otherwise not give their active support

- **Partnerships and harnessing capacity and skills from all stakeholders**: much of the success of MomConnect has been the ability to integrate and harness the skills and contributions from a number of players.

- **A management structure that is flexible** and able to make quick decisions to respond to the various needs of different stakeholders, including donors, mobile network operators, and other interest groups

- **Constant monitoring**: opportunities for improvement are continually assessed (including monitoring of costs); local innovations are adopted for national scale-up.

- IV -
Potential for cooperation

9. Main domains and axes for exchanges and cooperation

In 2014, a Health Normative Standards Framework articulated an interoperability framework that represents a first step towards developing a comprehensive health enterprise architecture specification, a work still very much in progress in South Africa.

The 2015 mHelath strategy seeks to replicate the success of MomConnect and will probably lead to the development of other nationwide initiatives modelled after smaller successes.

10. 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.

- **Universal Access**

MomConnect – 2014 *(see 6.1)* – A full exchange and information platform open to many partners to follow pregnant women and empower them and the HPs

> Objective for following
> Learn and for some Participate: identify similar projects and cooperate if it is judged potentially to follow evolution and enrichment of the project and impact on the beneficiaries and on general mother and child policies – anywhere in Europe or any other country

- **Standards, interoperability**

Health Normative Standards Framework – 2014 *(5)* – Process and results to define a rapidly evolving framework, a key tool for interoperability

> Objective for following
> Mutual exchange: useful towards international standards and practices – the process of upgrading and modifying the framework, the governance and impact of evolutions is especially to be followed

- **Policy - programme**

mHealth Strategy - 2015 *(6.2)* – foster mHealth development

Objective for following

Learn: This global strategy is developed in the conditions of an emerging country, with the rule of stimulating or leaving the private initiative develop mHealth necessary infrastructure and apps. However, the programme includes future public sector requirements, laying the foundations for the future integration and coordination of all mHealth initiatives as well as empowering the citizens and meeting the needs of all stakeholders. Much to learn.

- **Policy - programme**

mHealth Strategy - 2015 *(6.2)* – foster mHealth development

- V -
Main sources

National eHealth Strategy, South Africa 2012/13-2016/17
National Department of Health, Republic of South Africa

mHealth Strategy 2015 – 2019
National Department of Health, Republic of South Africa

South Africa Health Review 2016
Health Systems Trust

WHO Country Cooperation Strategy 2016 - 2020

mHealth Compendium Special Edition 2016: Reaching Scale
United States Agency for International Development

mHealth Implementation in South Africa
Conference Paper · April 2016
Adele BOTHA, Vathiswa BOOI

Shadrack Katuu, (2016) "Transforming South Africa's health sector: The eHealth Strategy, the implementation of electronic document and records management systems (EDRMS) and the utility of maturity models"
Journal of Science and Technology Policy Management, Vol. 7 Issue: 3, pp.330-345,
https://doi.org/10.1108/JSTPM-02-2016-0001