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**EHEALTH SOLUTIONS IN THE AFRICAN REGION:  
CURRENT CONTEXT AND PERSPECTIVES**

**Report of the Regional Director**

**CONTENTS**

	<b>Paragraphs</b>
BACKGROUND .....	1–7
ISSUES AND CHALLENGES .....	8–19
ACTIONS PROPOSED .....	20–28

**ANNEX**

**DRAFT RESOLUTION:** AFR/RC60/WP/3 Ehealth solutions in the African Region: Current context and perspectives (Document AFR/RC60/5)

## BACKGROUND

1. The World Health Organization (WHO) defines eHealth as the cost-effective and secure use of information and communication technologies (ICTs) for health and health-related fields.<sup>1</sup> ICT provides a range of technologies for gathering, storing, retrieving, processing, analysing, transmitting and receiving data and information. These include radio, television, mobile phones, computer and network hardware and software, as well as the services and applications associated with them, including videoconferencing and distance learning. eHealth is an umbrella term that covers a variety of areas such as health informatics, digital health, telehealth, telemedicine, eLearning and mobile health.<sup>2</sup>

2. EHealth can contribute to health systems strengthening in several ways by improving the availability, quality and use of information and evidence through strengthened health information systems and public health surveillance systems; developing the health workforce and improving performance by eliminating distance and time barriers through telemedicine and continuing medical education; improving access to existing global and local health information and knowledge; and fostering positive lifestyle changes to prevent and control common diseases.

3. Recognizing ICT's significant developmental role and cross-cutting impact in regard to all aspects of national life, including health, an ICT-related target was included in Millennium Development Goal No. 8.<sup>3</sup> The World Health Assembly resolution on eHealth, WHA58.28,<sup>4</sup> noted the potential impact that ICT could have on health-care delivery. Subsequently the WHO Executive Board endorsed a set of activities to be implemented by the WHO Secretariat aimed at, among others, creating an environment that ensures data privacy, security and confidentiality, and improves interoperability.<sup>5</sup> This included the establishment of the Global Observatory for eHealth to improve the evidence base and guide policies for integrating eHealth into health systems.<sup>6</sup>

4. The WHO Regional Committee for Africa, through Resolution AFR/RC56/R8,<sup>7</sup> called on Member States to adopt and implement eHealth strategies to improve their health systems. The Ouagadougou<sup>8</sup> and Algiers<sup>9</sup> declarations and the Framework for Implementation of the Algiers Declaration<sup>10</sup> also underscore the importance of eHealth in health systems strengthening.

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<sup>1</sup> Resolution WHA.58.28: eHealth. In: Fifty-eighth World Health Assembly, Geneva, May 2005, World Health Organization; [http://apps.who.int/gb/ebwha/pdf\\_files/WHA58/WHA58\\_28-en.pdf](http://apps.who.int/gb/ebwha/pdf_files/WHA58/WHA58_28-en.pdf) (last accessed 13/11/09).

<sup>2</sup> Oh H et al, What is eHealth: a systematic review of published definitions; *J Med Internet Res*, 2005, 7(1) <http://www.jmir.org/2005/1/e1/> (last accessed 13/11/09).

<sup>3</sup> Target 18F: In cooperation with the private sector, make available the benefits of new technologies, especially information and communications.

<sup>4</sup> Resolution WHA58.28: eHealth; In: Fifty-eighth World Health Assembly, Geneva, May 2005, World Health Organization; [http://apps.who.int/gb/ebwha/pdf\\_files/WHA58/WHA58\\_28-en.pdf](http://apps.who.int/gb/ebwha/pdf_files/WHA58/WHA58_28-en.pdf) (last accessed 13/11/09).

<sup>5</sup> eHealth: proposed tools and services (EB117/15). In: Executive Board, 117th session, Geneva, January 2006, World Health Organization; [http://apps.who.int/gb/ebwha/pdf\\_files/EB117/B117\\_15-en.pdf](http://apps.who.int/gb/ebwha/pdf_files/EB117/B117_15-en.pdf) (last accessed 8/12/09).

<sup>6</sup> Global Observatory for eHealth; <http://www.who.int/goe> (last accessed on 8/12/09).

<sup>7</sup> Resolution AFR/RC56/R8, Knowledge management in the WHO African Region: strategic directions. In: *Fifty-sixth Session of the WHO Regional Committee for Africa, Addis Ababa, Federal Democratic Republic of Ethiopia, 28 August–1 September 2006, Final Report*, Brazzaville, World Health Organization, Regional Office for Africa, 2006 (AFR/RC56/24), pp. 22–24; <http://afrolib.afro.who.int> (last accessed 13/11/09).

<sup>8</sup> WHO, Ouagadougou Declaration on Primary Health Care and Health Systems in Africa: Achieving Better Health for Africa in the New Millennium, a declaration by the Member States of the WHO African Region, April 2008, Ouagadougou; <http://www.afro.who.int/declarations/DeclarationOuagadougou-en.pdf> (last accessed 13/11/09).

5. Major eHealth projects in the Region include the Telemedicine Network for Francophone African Countries,<sup>11</sup> Access to Research Initiative (HINARI),<sup>12</sup> ePortuguese Project<sup>13</sup> and PanAfrican eNetwork Project.<sup>14</sup> Several countries in the Region are implementing telemedicine and eLearning projects.<sup>15</sup> Some of these are using mobile phones to support the delivery of health care, awareness and education; remote data collection; remote monitoring and home care; communicating treatments to patients; and reporting and responding to disease outbreaks and emergencies. Others are using satellite technologies to broadcast health promotion to patients and health workers in hospitals and clinics.

6. While eHealth projects in the Region continue to be on a small scale and are fragmented, the rapid advances in ICT have put countries under intense market pressure to adopt ICT-associated services. There is a need to ensure that the introduction of ICT in the health sector is driven by country needs and appropriate policies, rather than by pressures from technology producers.

7. This document highlights some key issues that need to be addressed and proposes concrete actions for adopting eHealth solutions as tools for strengthening health systems in order to accelerate progress towards the achievement of the MDGs and the improvement of health outcomes in the Region.

## ISSUES AND CHALLENGES

8. Some major issues in the Region include the “digital divide,” i.e. inadequacy of ICT infrastructure and services and the limited ability and skills to use them. It is estimated that in sub-Saharan Africa, access to fixed telephone lines in 2007 was 1.5 per 100 population, access to mobile phone subscriptions was 22.9 per 100 population, and the level of internet use was 3.7 per 100 population. This contrasts with the global average of 19.0 per 100 population, 50.3 per 100 population and 20.6 per 100 population, respectively.<sup>16</sup> While mobile phone services are booming, the African Region has extremely little bandwidth, and the costs of Internet services are beyond the reach of the majority of the people.

9. Development and maintenance of ICT infrastructure are expensive and the costs are beyond the budget of many institutions in Africa, particularly when technology is sought for large-scale use. The ICT infrastructure development needs of the health sector are not within the purview of ministries of health. Economic situations and financial constraints both countrywide and in the health sector are such that many health facilities and medical training institutions are unable to cater for their needs,

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<sup>9</sup> WHO, The Algiers Declaration, Ministerial Conference on Research for Health in the African Region; Narrowing the Knowledge Gap to Improve Africa's Health, June 2008, Algiers; [http://www.afro.who.int/declarations/algiers\\_declaration\\_en.pdf](http://www.afro.who.int/declarations/algiers_declaration_en.pdf) (last accessed 13/11/09).

<sup>10</sup> WHO, Framework for the Implementation of the Algiers Declaration on Research for Health in the African Region. In: *Fifty-ninth Session of the WHO Regional Committee for Africa, Kigali, Republic of Rwanda, September 2009*; <http://www.afro.who.int/rc59/documents/AFR-RC59-5.pdf> (last accessed 13/11/09).

<sup>11</sup> *Le Réseau en Afrique Francophone pour la Télémedecine* (RAFT); <http://raft.hcuge.ch> (last accessed 13/11/09).

<sup>12</sup> HINARI; <http://www.who.int/hinari> (last accessed 13/11/09).

<sup>13</sup> ePortuguese; <http://www.who.int/eportuguese/en> (last accessed 13/11/09).

<sup>14</sup> PanAfrican eNetwork Project; [www.panafricanenetwork.com](http://www.panafricanenetwork.com) (last accessed 13/11/09).

<sup>15</sup> Algeria, Benin, Burkina Faso, Burundi, Cameroon, Chad, Republic of Congo, Cote d'Ivoire, Ethiopia, Ghana, Kenya, Madagascar, Mali, Mauritania, Niger, Rwanda, Senegal and South Africa.

<sup>16</sup> Information Society Statistical Profiles 2009, Africa, International Telecommunication Union; <http://www.itu.int/ITU-D/ict/mdg> (last accessed 13/11/09).

including computerization. Dependence on external resources or donor funding for the introduction of eHealth in the Region has become the rule rather than the exception.

10. The key challenges countries need to address include limited awareness about eHealth; lack of enabling policy environment; weak leadership and coordination; inadequate human capacity; weak ICT infrastructure and services; inadequate financial resources; and weak monitoring and evaluation systems.

11. *Limited awareness of eHealth:* Policy-makers, health authorities and health practitioners are not fully aware of the potential benefits of the use of ICT for health. Neither has the health sector developed medium- or long-term strategic plans for developing eHealth infrastructure and services.

12. *Lack of enabling policy environment:* Most countries in the Region have not developed national policies, strategies or regulatory frameworks that are necessary for establishing common technical infrastructure, interoperability and standardization protocols. Countries also need to address ownership, confidentiality, security of data and quality of information.

13. *Weak leadership and coordination:* In several countries, there is a multiplicity of players and partners in several eHealth projects being implemented with limited capability for interoperability. The challenge is to strengthen coordination and collaboration among all stakeholders, partners and donors as well as improve the capacity of the health sector to lead the process.

14. *Inadequate human capacity to plan and apply eHealth solutions:* The number of health workers capable of leveraging ICT in their work remains limited. Health workers are not systematically trained in the use of ICT. There are insufficient numbers of health workers with the capacity to design, deploy and effectively manage eHealth projects and programmes. The use of ICT-facilitated learning remains limited in most health training institutions.

15. *Weak ICT infrastructure and services within the health sector:* Existing eHealth projects within the health sector are small-scale and fragmented, and their scope and coverage are rather limited. In most countries, the ministries in charge of communications, technology and finance are primarily responsible for national ICT infrastructure. The challenge is for ministries of health to ensure that ICT needs and adequate coverage of the health sector are taken into consideration during the preparation and implementation of national ICT plans.

16. *Inadequate financial resources:* Financing eHealth infrastructure and services requires collaboration and coordination between multiple partners from both the private and public sectors. The challenge is for the health sector to partner with other governmental sectors and the private sector to mobilize the resources required for eHealth.

17. *Weak monitoring and evaluation:* The majority of the eHealth projects, initiatives, national plans or frameworks implemented so far in the Region have not been adequately monitored or evaluated. Indeed, comprehensive frameworks for monitoring and evaluation have yet to be developed. The challenge is to ensure the availability of efficient systems for monitoring and evaluation and for sharing of experiences and lessons learnt.

18. Despite the above challenges, opportunities exist for planning and deploying eHealth solutions. These include the rapid advances in ICT, increasing access to mobile phones and broadband

connectivity, increasing interest by donors and countries in strengthening health systems, and the partnerships being built by agencies such as WHO, International Telecommunication Union, World Bank, United Nations Economic Commission for Africa and others. The partnerships seek to develop national road maps for eHealth, facilitate connectivity of health facilities in districts, and provide health workers access to a suite of eHealth applications and solutions for enhancing professional capacity.

19. Two recent meetings have provided a basic foundation for harmonizing national policies and mobilizing countries to plan and implement eHealth services in the Region. They are the Fourth Conference of Ministers of Health of the African Union and the Kigali meeting<sup>17</sup> on eHealth and Health Information Systems. In particular, the Kigali meeting focused on an “enterprise architecture,” an approach in which all relevant components of an information system are identified and the relationship between the components is defined. The meeting also addressed the implementation of policy and solution in Africa.

## **ACTIONS PROPOSED**

20. In order to strengthen national health systems and improve the health of the people, countries should take actions leading to increased access to eHealth tools and services. Crucially, these actions should be taken in the context of the implementation of the Algiers and Ouagadougou declarations, and be integrated with other efforts to strengthen national health systems.

21. *Promote national political commitment and awareness of eHealth:* It is necessary to raise the awareness of policy-makers and the general public on the benefits of eHealth, including the identification and use of champions (e.g. celebrities within and outside the health sector) for that purpose. It is important to develop health sector capacity to advocate for eHealth solutions, negotiate with other ministries and lead the national process.

22. *Develop an enabling policy environment:* All countries should carry out a national needs assessment for eHealth and follow this with the development of long-term strategic plans and frameworks for eHealth. Countries should develop policies on eHealth which articulate the commitment of the government to invest in an ICT-based health system that will improve access to quality services at affordable prices. The policies should be based on the national ICT policy. Countries should also develop strategies, norms and appropriate governance mechanisms related to legal liability, ethical standards, and confidentiality and privacy protection.

23. *Strengthen leadership and coordination:* A multisectoral and multidisciplinary consultative process involving all key stakeholders, including the users and beneficiaries, should be used to develop national plans, policies, strategies, and ethical and legal frameworks. Each country should consider establishing multidisciplinary and intersectoral support mechanisms. The top leadership in the health sector should lead by example in acquiring the skills and utilizing the relevant technologies.

24. *Build infrastructure and establish services for eHealth:* Countries should select appropriate technologies and solutions to be used within their specific environments, bearing in mind the current

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<sup>17</sup> Organized by WHO and the Government of Rwanda, 19 to 23 October 2009, with participants from eight countries (Ethiopia, Ghana, Kenya, Malawi, Nigeria, Rwanda, Tanzania and Uganda), comprising MOH officials, ICT staff and solution implementers in the countries.

state of power supply standards, health systems and telecommunications infrastructure. Health needs should drive technology acquisition and adoption. Some of the key areas of focus include building the ICT infrastructure necessary to support eHealth services; establishing Internet connections for health institutions; establishing web sites for ministries of health; building local area networks and establishing telemedicine facilities. The adoption of open ICT platform technologies should be encouraged, and maintenance of adopted technologies should be given high priority.

25. *Develop human capacity for eHealth:* Systematic education in eHealth for health personnel must be at the heart of any strategy designed to facilitate eHealth. Countries need to introduce ICT in the curricula of all health training institutions. eHealth training should be included in continuing education programmes for health workers. The use of eLearning programmes for professional education should be promoted in the health sciences as well as in ongoing professional development. Local academics and researchers as well as external technical experts should be involved in these efforts. Countries should consider establishing centres of excellence to train eHealth professionals and reach a critical mass of expertise for service, training and research. Experts in eHealth are also to be recruited.

26. *Mobilize financial resources for eHealth:* Countries need to make the necessary investments in ICT infrastructure and services in the health sector, using domestic and external financing. Countries will need to ensure integration of ICT in all budgetary processes to promote sustainability. International partners and donors should be encouraged to support national efforts. Governments should establish an enabling policy environment that will encourage the private sector to seek funds for capital investments that will allow the introduction of new cost-effective technologies.

27. *Monitor and evaluate national eHealth plans and frameworks:* Countries should establish monitoring and evaluation systems to measure progress in the implementation of national eHealth strategic plans. This is crucial to ensure delivery of the expected benefits.

28. The Regional Committee is invited to examine and endorse the actions proposed in this document.

**DRAFT RESOLUTION**

**EHEALTH SOLUTIONS IN THE AFRICAN REGION:  
CURRENT CONTEXT AND PERSPECTIVES**

The Regional Committee,

Having examined the document entitled “eHealth Solutions in the African Region: Current Context and Perspectives”,

Aware of the significant role that Information and Communication Technologies (ICT) can play in strengthening national health systems in order to accelerate progress towards the achievement of the MDGs and the improvement of health outcomes in the Region;

Noting that eHealth can improve the availability, quality and use of information and evidence for policy and decision making through, among others, strengthened health information systems and public health surveillance systems;

Further noting that the use of ICT can improve efficiency in health services through solutions such as the use of Personal Digital Assistants at the point of care, electronic health records, and other applications which provide patient billing, patient scheduling and tracking, and electronic transmission of prescriptions, and ultimately improve the quality of care.

Recognizing that ICT applications through telemedicine can contribute to improving equity in health by connecting underserved populations in rural areas with urban health facilities with highly qualified personnel and medical technologies;

Aware that ICT solutions can contribute to training and professional development of health workers through continuing medical education using targeted eLearning programmes and help address the Human Resources for Health crisis;

Recognizing that the spread of ICT including the Internet and mobile phones provides an opportunity to reach the public at home, at school and at the workplace with health educational and promotional information;

Recalling World Health Assembly Resolution 58.28 on eHealth; Regional Committee Resolution AFR/RC56/R8 on Knowledge Management in the WHO African Region: Strategic Directions; the Ouagadougou Declaration on Primary Health Care and Health Systems in Africa: Achieving Better Health for Africa in the New Millennium; and the Algiers Declaration on Narrowing the Knowledge Gap to Improve Africa’s Health;

Concerned that the rapid advances in ICT have put countries under intense market pressures to adopt ICT-associated services, prompting the need to ensure that the introduction of ICT in the health sector is driven by country needs and appropriate policies rather than pressures from technology producers;

Aware that key challenges which impede wide-scale implementation of eHealth solutions include the “digital divide”, limited awareness of eHealth, lack of a conducive policy environment, weak leadership and coordination, inadequate financial and human resources, weak ICT infrastructure and services within the health sector, and weak monitoring and evaluation systems;

1. ENDORSES the document entitled “eHealth Solutions in the African Region: Current Context and Perspectives”;

2. URGES Member States:

- (a) to promote national political commitment to and awareness of eHealth including identifying and using champions for the purpose, and to develop the capacity of the health sector to negotiate with other line ministries and to lead the national process of adoption of eHealth;
- (b) to develop a conducive policy environment by conducting a national needs assessment for eHealth, developing national policies, strategies, norms and appropriate governance mechanisms, and drawing up long-term strategic plans or frameworks for eHealth;
- (c) to strengthen leadership and coordination for eHealth including considering the establishment of multidisciplinary and intersectoral support mechanisms;
- (d) to build infrastructure and establish services for eHealth including Internet connections for health institutions and websites for ministries of health, local area networks, and telemedicine facilities, within their specific environments;
- (e) to systematically develop human capacity for eHealth by introducing ICT curriculum in health training institutions including eHealth training in continuing education programmes for health workers and by promoting the use of eLearning programmes for professional education, and to recruit experts in eHealth;
- (f) to make the necessary investments in eHealth infrastructure and services using domestic and external financing while ensuring integration of ICT in all budgetary processes to promote sustainability and encourage the involvement of the private sector;
- (g) to establish monitoring and evaluation systems to measure progress in the implementation of the national eHealth strategic plans;

3. REQUESTS the Regional Director:

- (a) to facilitate high-level advocacy and coordination of partners’ action, in collaboration with the African Union and regional economic communities, the UN-ECA, ITU, international financing institutions, for adequate resource mobilization and efficient technical cooperation;
- (b) to provide technical support to Member States for the development and implementation of eHealth applications and solutions;
- (c) to support Member States in monitoring eHealth services and in documenting and sharing Best Practices;
- (d) to report to the Sixty-second Session of the Regional Committee, and thereafter every other year, on the progress being made.