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ICT4D : Family Planning and Reproductive Health

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ABSTRACT

There is an ever-increasing trend in the utilization of Information and Communication Technologies (ICTs) around the globe. However, the diffusion of innovations is not even in developing nations, requiring the implementation of Information and Communication Technologies for Development (ICT4D) policies to promote the reach of ICTs. In the field of family planning and reproductive health, ICTs, ranging from radio devices, television sets, wireless communication, mobile devices and computers play a significant enabling role in ensuring that reproductive health reaches many. In Kenya, there are several initiatives that this paper highlights as far as reproductive health is concerned. With the right policies, best practices as elucidated from past projects, and funding, ICTs have the capacity to increase access to reproductive health.

Keywords : family planning, ICT, reproductive health, policies

I. INTRODUCTION

The ever-growing information and communication technology (ICT) field can serve a key role in supporting the myriad efforts to address reproductive, family planning, and related health needs. The phrase eHealth was developed to describe the integrated application of information technology and electronic communication in the health sector. The phrase not only typifies technical development, but also a new manner of working, a commitment for global thinking, commitment for cooperation, and an intention to enhance healthcare locally, regionally, and globally through the application of information and communication technology[23]. As these new techniques and methods take hold, ICTs – especially mobile technologies – have the ability to improve access to reproductive health and family planning information services for all gender and ages; men, women, and the youth. The ultimate potential is to make the health status of all populations better and to improve the quality of their life. ICTs also present the potential to strengthen the healthcare personnel through opportunities for training and education through reaching out to the healthcare workers at all levels and supporting other areas in the healthcare sector such as health information, health finance, and health logistics for accessing lab supplies, vaccines, and equipment[7], [24] . This paper assesses the current application of ICTs in Kenya to advance reproductive health, family planning, and related health programs.

II. Historical background

In the past several decades, there have been myriad efforts to enhance and promote reproductive health

and family planning, particularly in low and middle-income countries. Regardless of these efforts, the needs in these countries are likely to increase by 40% in the next one and a half decades as per the projections of UNFPA [18]. In the sub-Saharan region, where almost 50% of the population falls under the reproductive age, at least one in four women in marriage still do not have access to contraceptives, and the fertility rate surpasses the fertility rate in any other part of the world. This has hampered the social and economic progress of the region, further impending reproductive health and family planning efforts. As in other areas of the world, there are significant hindrances to contraceptive use and health services when men have control of the finances, mobility of women, and decision making in African households.

Over the recent past, the World Health Organization and the USAID, through the Africa Bureau, the office of reproductive health, and local missions, and other key partners have been strategizing to reposition reproductive health and family planning to ensure that it is considered a priority in the face of competing universal health demands [34], [36]. Activities subsume: offering leadership development technical support and training in family planning at the national levels, offering training to managers and advocates who require the skills to work in this novel milieu, developing tools for health accounts assessment, supporting health ministries, enhancing the capacity of the private health sector through expanding the distributors in communities, cadres of health service providers, working with national and international partners in the dissemination of the ideal practices [13], [20], [27].

III. Family Planning Policies

The action plan for sexual and reproductive health by the World Health Organization provides a great glimpse of the ICT4D policies for reproductive health in Europe.The policy strategy targets five priority phases of reproductive and sexual health which include: improving antenatal, delivery, postpartum and newborn care; providing high-quality services for family planning, including infertility services; eliminating unsafe abortion; combating sexually transmitted infections, including HIV, reproductive tract infections, cervical cancer and other gynaecological morbidities; and promoting sexual health.. The action plan resulted from the 66th session of the WHO Regional Committee for Europe in September 2016. The international conference on population and development, a conference that was held in Egypt's capital, Cairo on 5–13 September 1994 The resulting action plan moved programs and policies away from the statistics of human beings to the rights of the people and underscored the complementarity of bolstering the connections between development and population [33]. It highlighted that family planning and reproductive health are important ends in and of themselves and they contribute towards enhancing the quality of life for all people [32],[35]. The strategic direction provides a clear guideline on the role of ICTs in reproductive health noting that they are to enhance information and offer evidence as well as accountability.

A review of the policy in Israel in the health sector provides a further glimpse of the role of information and technology in reproductive health. In the health system in Israel, provision of care is founded on regulated competition among health plans, nonprofit in nature, that draw from the National Health Insurance Law of 1995. Patients can select four plans every year that will provide them with health services. The health plans are included in the budget through capitation payments. Hospitals are given finances based on the services they offer and the health plans that those services fall under. Hospitals and health plans all have developed their specific health information systems. However, recently, the government has sought to implement a universal system that is to work through the interoperability layer with the existing systems to retrieve the information of the patients and their health plans [5],

[26]. This information is further used by the doctors at their points of care when consultation is active and disappears the moment the consultation is over. Every health plan, as described, has its own programs concerning the patients and their access to health information systems and the application of mHealth and eHealth.

Regardless of the fact that there is a national policy for information in Israel referred to as ePolicy, the eHealth policy is still yet to be fully implemented. In the country, though, tremendous effort has been wrought with regards to access to electronic medical records and 100% of the physicians have access to these electronic records. In comparison, in the United States system, only 78% of the physicians can access Electronic Medical Records. The patients in Israel have been granted the ability to access their health information records from their mobile devices and computers in a clear and user-friendly manner, a significant step towards the improvement of reproductive health [25]. This system is referred to as the personal health record system. Moreover, PHR enables the provision of administrative services such as e-prescriptions. At the onset of the implementation of the policies, the government took up no specific role. Over the recent past, however, the Ministry of Health (MoH) – Kenya has begun to appreciate the benefits of both eHealth and mHealth.

In Portugal, the health system is organized as the National Health Service. The health policy in the country provides for the governance of the community-based clinics and hospitals by the MOH. The private sector is also considered active in the health sector of the country. Specific sectors of the country's population are covered by the insurance arrangements, and only around 20% of the population have access to voluntary health insurance [28]. The introduction of ICTs started in 1990 with the MOH developing a basic health information system that would provide support in controlling and managing the flow of users, administrative data, and standardization of clinical data, and allowing the improvement in the communication between the providers of health. Various solutions were for primary health centers, hospitals, nurses, and medical use respectively. Furthermore, the MOH promotes the implementation of a special system for private institutions, exemplifying tension between decentralization forces on the one hand and centralization on the other hand [4].

The application of the ICT4D policies in South Africa presents as some of the few implementations of ICTs in the reproductive health sector in Africa. However, regardless of the implementation of these policies to address reproductive and sexual health, the country continues to grapple with high teenage pregnancy numbers and women who are affected negatively as far as gender relations are concerned [21]. There is still poor access to reproductive health services, lack of sufficient knowledge regarding sexual reproduction, and conception. At the same time, there is significant excitement regarding the potential for ICTs to offer solutions to the myriad challenges[31]. In South Africa, the policy for embracing m-health and e-health alongside the delivery of reproductive health is receptive.

ICT4D Sexual Health Policy

In a working paper series dubbed Development Informatics, paper no. 59, ICT4D guidelines in the post-2015 world are outlined including the new priorities for ICT4D priorities. Richard Heeks identifies key questions driving the post-2015 development agenda and the direction for the ICT4D policy, as exemplified in the documentation for WSIS+10 [14]. The key questions include: How ICTs can shape the sexual reproductive health of girls and women?; Who are the main actors advocating for the inclusion of ICTs in sexual reproductive health?; What are the enabling factors or challenging factors facing the incorporation of ICTs as a factor driving sexual reproductive health?; and What level are the

policymakers employing ICT as a tool for addressing the challenges facing girls and women in sexual reproductive health?

The WSIS+10 documentation contains more than 1000 pages of review of the current situation of ICT4D a decade after the inaugural World Summits on Information Society; and that it looks to set a vision for ICT4D and WSIS beyond 2015. Cross-cutting issues tackled include how "the ICT4D bubble" can be broken and how ICTs can have a meaningful impact in different sectors including reproductive health and health systems in general [14]. In fact, part of the WSIS targets and action points include connecting health centers and hospitals with information technologies. In this regard, ICT applications that are to achieve this are referred to as E-health and are included in Action Line C7 of the WSIS document. Heeks notes that e-health is currently a significant area of ICT4D practice and a core WSIS action subline [8].

ICT4D and reproductive health in the UK

In the UK, policy development in the field of family planning and reproductive health have been keen on the inclusion of information systems that ensure greater access to reproductive health services and products. The Family Planning 2020 (FP2020) policy was first launched in the UK, London in July 2012 with great fanfare [12]. It was a great and ambitious plan that held the aspirational goal of reaching more than 120 million extra reproductive health and family planning product users. The policy's feats include managing to incorporate different partners with the aim of expanding the family planning accessibility to the most poverty-stricken nations of the world [8].

The UK program is simply a reflection of the work in the global family planning community aimed at ensuring that more and more women around the globe have access to family planning and contraceptive options as well as relevant information. As part of this global endeavor, organizations, under the UK family planning 2020 policy, as well as other policies have been working to provide this access. The launch of the Implant Access Program that took place in 2013 is one such tremendous project that has been geared towards strengthening family planning and contraceptive access overall [10].

When comparing today to 2012, when funding was increasing, there is stagnant donor funding to drive the policy direction. Adding to this complexity is the changing policy environment and the evolving strategies used by the implementers. Take for instance the UKAID's journey to self-reliance method. In tandem, the global movement towards universal care has elevated the holistic approaches to financing in the healthcare sector – potentially replacing the organizations that are referred to as vertical organizations by intervention or condition-specific programs [12].

The initial idea behind the FP2020 was built upon the theory of change that mirrors the environment in 2012. The current picture presents several cases: that more domestic money and donors are needed for family planning, a better paradigm of resource mobilization is needed, accountability needs a clearer mandate, time to align behind the financing approach should be considered [12].

Under the UK policy and in the UK policy environment, the implant access program emerged in order to propagate the broader objective of ensuring that as many have access to family planning as possible. The inclusion of technology, such as broadband access, smartphones and related applications, and web applications, in the delivery of family planning follows the ICT4D paradigm. As such, a group of both private and public organizations has collaborated to make Jadelle and Implanon available to women all around the world. Family planning products are made available to millions around the world. The supply planning, supply, and operations of the organizations are guided by information systems that are able to

provide information regarding usage, demand, and other analytics. Further, information systems are able to guide the supply processes, and the operations to ensure that family planning products are able to reach as many as possible [16].

ICTs and reproductive health for girls and women

There are various projects implemented and emerging in developing nations with the view of improving the sexual and reproductive health of women and girls. In Bangladesh, for instance, the policy environment is shaping up to support community media that support sexual and reproductive health. In one current program, UKAid and Ipas Bangladesh are on the frontline of the project contributing towards the attainment of sustainable development goal [15]. The program targets to improve the access of women to safe family planning through menstruation regulations and post-abortion regulations.

Through the implementation of a community radio program, the region is able to increase awareness regarding family planning. They are also able to provide accurate information regarding the misconceptions of sexual and reproductive health, combat the myths that surround the topic, and provide as much information as possible. The program also makes it possible to provide the most accurate information to the public as possible. Through the community radio, Bangladesh is able to use station managers and other producers to facilitate the most accurate information on the conversation on family planning methods and related care.

The objectives of the policy and community radio program in Bangladesh include to improve and widen the awareness of family planning services in order to increase the update of family planning services in the country by women, adolescents, and men; offer accurate information to the public, fighting the misconceptions and myths regarding the modern methods of contraceptive, and long-acting methods and promoting post-partum family planning methods; building the capacity of station managers in community radio stations and the local level personnel, in their capacity to facilitate shame-free family planning and communicate the same to the broader public.

The expected outcomes are that maternal mortality rate will go down and that there will be improved access to the family planning services; that there will be better choices among the population and abortion rates will be reduced, that reproductive choices will improve; women will be able to access family planning effectively, the capacity of the health system will improve, and the policy and regulatory environment around reproductive and sexual health will improve [1].

ICT use for Health in Kenya

Since 2007, an organization referred to as Spider has sought to support women especially those living in rural areas. The empowerment of women living in rural areas through ICTs has been closely associated with socioeconomic development and this potential transformation requires that everyone has adequate access to ICTs. New ways are taking hold, especially with regards to mobile technology, and the need for ICT4D policies in developing countries such as Kenya is more important than ever [29]. Organizations such as Spider can be empowered by the presence and clear definition of these policies to deliver technology for the purposes of uplifting women and advancing reproductive health to them.

In Kenya, significant development has been made through initiatives such as those in Bangladesh, supported by the government of Kenya and donor organizations. There are myriad examples of technologies that are being utilized to advance or support reproductive health and family planning. These include radio, television, computers especially

personal computers, the internet, new Wireless ICTs, and mHealth [6].

Radio

Usually referred to as the "African Medium," radio has been considered a staple ICT in Kenya offering information, education, and communication as well as other support for a long time. Successful reproductive health radio programs have been reported to reach a wide audience. The programs have been reported to reach many – to the tune of millions – while the distribution and production costs are relatively low [11]. Radios create what can be referred to as listening communities and provide an avenue for shifting the nature of the radio and public broadcast.

Television

There are myriad family planning, reproductive health, and HIV/AIDS programs in televisions. However, in Kenya, televisions are not common in rural areas and this stands as a limiting factor. However, where television sets are available and programming is adapted to the local content, reproductive health programs are filled with the right content, and feedback regarding the programs is collected, there is success [22]. Onsomu et al. (2013) further elaborate the need to further scale up television programming to ensure more people test for HIV and assure reproductive and sexual health.

Computers

Using computers, AMREF Kenya is able to advise doctors, who are usually not specialists, working in rural areas on how to handle complex reproductive health cases. Computers, however, are not in all the places in Kenya and Sub Saharan Africa. Computer use is also directly linked to the use of the Internet. In 2011, the penetration of the internet in Africa was at 11.4% compared to the average penetration in the world – 30% [3].

New Wireless ICTs

These are revolutionizing all aspects of development and life around the globe. The previous generations of devices are being upgraded to more advanced platforms and the use of open source is increasing operability and transparency.

mHealth

These are the more recent technologies that are grounded on mobile and digital capability [30]. There are numerous ways the mobile platforms can be employed including client help services, health financing services, supply chain management, data collection, and more.

Elements for success in reproductive health planning and programs: Select ICT programs in reproductive health, family planning, and other related programs

In theory, any ICT that is available for application either directly or otherwise support reproductive health, family planning, and HIV/AIDS activities. An ICT that enhances the capacity of a person to undertake a required activity can be considered as a system strengthening or capacity building initiative. According to the USAID [30] report on the success of reproductive health programming, elements of success in the application of ICTs include:

a. Building high performing and well training staff
b. Providing strong leadership
c. Communicating in an effective manner
d. Working for supportive policies
e. Making services available
f. Basing decisions on M&E evidence
g. Assuring contraceptive security with robust logistic system
h. Offering client-centered care
i. Integrating services
j. Making services accessible through a mix of delivery sites

In line with these elements, AMREF Kenya's eHealth programme for nurses, Spaced, Capacity*Plus*, Knowledge for Health (K4H), Global Health eLearning, mobile for reproductive health (m4RH), CycelTel, and

ILSGateway are some of the initiatives that have been started to support reproductive health. Other initiatives include programmes by ACWIC and USAID. Ongoing studies on the SMS project in Kenya has shown that more than 10% of the clients have accessed reproductive health products through technologies [30]. In partner countries like Tanzania where the update is low, the m4RH services are offered in Swahili language in order to woo users.

Figure 1:Source [9]

Figure 2: m4RH services [9]

The ACWIC (African Center for Women and Communication Technology) is one such initiative that uses ICT to empower women through unique partnerships that ensure that women and girls who have reached the reproductive age are employable, educated, and have the necessary training and support as far as reproductive health and HIV protection is concerned. The focus is on the reproductive health and HIV protection and the organization integrated this core focus in its entire program portfolio. Current projects by the organization include projects in Vusha Girls Employability program and the Ngazi Youth Employability Program in the same area. Other projects that have been initiated by the organization in the past include DREAMs Vusha girls project, coding projects, Ninaweza Development Program, and career fairs [2].

mHealth Kenya follows the same breadth in empowering women and using ICTs to improve their reproductive health. The organization's executive director was awarded in 2014 for supporting ICTs in reproductive health and supporting health initiatives [19]. The organization, registered as a limited firm, provides the crucial link between private entities and public entities in the country to optimize, improve, and sustain the provision of quality reproductive health in the country.

The Kenya Healthcare Federation also shows how ICTs are being used and future plans in empowering women and girls in the reproductive age. In their note, they assert that ICTs play a critical role in achieving universal healthcare coverage and supporting reproductive health and primary healthcare. It is clear that mobile technologies are already serving as important tools in delivering reproductive healthcare. Further, the exchange of information and data ensures that the delivery of reproductive healthcare services is cost-effective and data transfer is simplified. The Kenya Healthcare Federation further champions policy and data exchange framework that ensures the political environment is favorable for delivering healthcare to Kenyans and reproductive health to women in the reproductive age[17].

IV. CONCLUSION

There are several advancements that are being made in the field of reproductive health with respect to the application of technologies in order to bring services closer to women and girls who have attained the reproductive age. ICT4D policies supporting reproductive health along with the support from

partner organizations are availing more and more reproductive health services to people today. This paper has also elucidated the various challenges in terms of technology in developing nations. Overcoming these barriers will see the penetration of technologies further and an eventual increase in the availability of reproductive health services.

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