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Short Communication

Health Information Systems in Tanzania

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Abstract

Health Information Systems (HIS) constitute data compilation, reporting, dispensation and the use of information for better health service delivery at all levels. In Tanzania, health service is organised into three components (USAID, 2007): the district (the district hospital, health centres, dispensaries, and community health services), secondary and tertiary hospitals and other tertiary-level institutions (teaching institutions), and the central level which provides support services such as policy-making, donor coordination, monitoring and evaluation. The government of Tanzania is aware that improved HIS facilitates proper decision making regarding health care delivery. Using secondary data, this article discusses the application of information systems to improve health services delivery in Tanzania. Moreover, the article highlights the significance of digitally-based health information system in health care delivery.

Keywords:

Information Systems, Tanzania, Health Information Systems.

Introduction

The World Health Organisation (WHO) considers health systems to include the organisations, institutions, and resources that are devoted to producing health actions. They include a range of players engaged in the provision and financing of health services such as public, non-profit, and for-profit private sectors, as well as international and bilateral donors, foundations, and voluntary organisations that are involved in funding or implementing health activities. Health systems can be found at: regional, district, central, community, and household levels (WHOHMN, 2007).

In the context of Tanzania, the Health Management Information System (HMIS) is considered to be a single biggest system for health data. HMIS operates under the Ministry of Health and Social Welfare (MoHSW). It collects health information from more than 5,400 health facilities (WHO, 2000). Due to the new health policy of having a dispensary in each village, a health centre for each ward and a hospital for each district, it is anticipated that in ten years the numbers of the current health facilities will be doubled (United Republic of Tanzania, 2010).

The Tanzanian MoHSW has decided to adopt the HMN framework in strengthening HIS. Consequently, any health support is expected to follow this framework including the Norway-Tanzania Partnership Initiative (NTPI). NTPI has two pillars of health data. The first is population-based health sources that include data which are generated from the population as a whole. The second is health service-based sources or Health Management Information System (HMIS). In this category, data is collected through health-related administrative and operational activities. Such data include health service-based data: health facility

based data on morbidity and mortality; types of services delivered, drugs and commodities provided; information on the availability and quality of services; and financial and management (e.g. human resource, logistics) amongst others. Health administrative records generate data on the overall functioning of the health system such as the availability of human resources, infrastructure and commodities as well as financial flows ((United Republic of Tanzania, 2010).

Health systems in Tanzania are organised into three components (USAID, 2007): the district (the district hospital, health centres, dispensaries, and community health services), secondary and tertiary hospitals and other tertiary-level institutions (teaching institutions), and the central level which provides support services such as policy-making, donor coordination, monitoring and evaluation.

Health Sector in Tanzania

According to the World Bank, Tanzania is the fifth most dangerous country in Africa where a woman can give birth (after Sierra Leone, Niger, Malawi and Angola). Statistics reveal that each day Tanzania is losing an average of 36 women to childbirth, plus 430 babies aged less than a year old (United Republic of Tanzania (URT), 2010). On the whole, the health sector in Tanzania is experiencing significant challenges, primarily due to several underlying causes.

People are resorting to traditional health support, increased demand for data processing along with the expectation of consistent quality of service across the health system and the entire country, a continuous need for cost-containment in health service delivery in the context of changing disease patterns (for example, lifestyle diseases), emerging specialisations and variations of relative disease burdens, a continuous shortage of health workers, especially in the rural areas. The expectations and demand for health care services are increasing as a result of population growth and increased mobility exacerbated by continuous rural-to-urban migration. Also, the new generation of staff entering the health and social welfare workforce, already equipped with ICT skills cannot be persuaded to learn how to work in an inefficient and unconnected environment. Such group of health professionals prefers to simply migrate into any workplace where the mix of their ICT skills and professional competencies will be both respected and rewarded (URT, 2010). In Tanzania as in most parts of the developing world, globalisation places pressure on health care systems to align themselves with international developments and standards. .

ICTs and HIS in Tanzania

According to Hennessy et al., (2010), ICTs offer opportunities to stimulate growth and enhance innovation by individuals and institutions. However, to realise the full potential of ICTs in the health sector, there is a need to create an environment that will allow the proper harnessing and utilisation of ICTs. This includes adoption and integration of ICTs in various health programmes. This will increase the level of awareness of the potential of ICTs for authentic and sustainable health service delivery.

Tanzania, like many other African countries, has adopted ICT as an important tool for attaining development in various aspects. Nevertheless, Swarts & Wachira (2010) note that there are a number of indicators which show that the government and its political commitment to ICTs are critical for the successful integration of ICTs in the health sector. This is a necessary step because without government's commitment, it is difficult to create an environment (both legal, political and regulatory) for ICTs to flourish.

A primary indicator of the Tanzanian government's commitment to the use of ICT is the formulation of policies that guide the utilisation of ICT in health sector and other areas throughout the country. These policies include the National ICT Policy, National Vision 2025 and National Strategy Growth and Reduction of Poverty (NSGRP). In all these policy documents, ICT is outlined as a powerful development facilitator in the fight against poverty, ignorance and disease. Besides, Tanzania's government has allocated funds for ICT infrastructure and promotes its utilisation in various sectors. The government has also sets standards in order to ensure compatibility and encourage all sectors to invest in ICT development. The government has also in cooperation with the UN established the Tanzania Knowledge Network (TAKNET) launched in 2009, with the purpose of

creating, sharing and applying knowledge in critical development areas such as the health sector and in enhancing the livelihood of the rural communities (Swarts & Wachira, 2010). Moreover, an exemption of tax on personal computers has been introduced and this has served as an incentive for ICT purchase. Finally, the government has put in place telecommunication regulatory measures such as licensing operators, partial/full privatisation of government-owned operators and the involvement of the private sector as telecommunications operators. This has resulted in greater fulfilled demands and increased ICTs access, driven by the establishment of an independent regulatory agency (Katunzi, 2009). The ICT health policy of Tanzania aims to develop and deploy nationwide ehealth systems that will support medical facilities in various areas. It is acknowledged by government that ICT can be used in health services to manage health care systems for preventive and curative services (Lucas, 2008). These initiatives show the government's political will and commitment to ICT deployment in its space, including the health sector.

The importance of ICT deployment in the health sector need not be over-emphasised. Jomoh and Salawu (2009) point out that proper utilisation of ICT in the health sector in Tanzania will increase access to health information, facilitate monitoring and diagnosis of patient's health problems. Furthermore, ICTs will enhance delivery of basic and in-service training for health workers and increase access of rural care givers to health specialists. The end result of all these could be the reduction of child and maternal mortality, combating Malaria, HIV and AIDS and other diseases. This can be done cost effectively if the government works to reduce costs of bandwidth by at least 30% compared to the current market tariffs while providing specialised and secure connectivity solutions to its members (Jimoh & Salawu, 2009).

eHealth Policy in Tanzania

All Tanzania sectors are compelled to operate within the framework of the National Development Vision 2025, against which all policies have subsequently been aligned. The Government has recognised the importance of ICT in fulfilling this vision. The central objective of Tanzania's eHealth policy, established in 2009, is "to develop and deploy a nationwide eHealth system that supports medical facilities in the under-served areas". Coupled with this objective is the policy statement which asserts: "The Government will promote the use of ICT to enhance efficiency, effectiveness and sustainability in the provision of services and basic utilities by supporting the development and deployment of nationwide e-health […] transactions." The policy articulates that eHealth can be divided into three categories: Telemedicine (i.e. 'care at distance') which enables medical consultations to take place by using ICT facilities to interconnect either the remote and local practitioners among themselves, or to engage directly between remote practitioners and their local patients; Health informatics that deals with health data gathered routinely from the day-to-day administrative, diagnostic and therapeutic processes of the health facilities, and eLearning or blended learning which has to do with using ICT for learning and knowledge exchange (URT, 2010).

In order for eHealth to be deployed effectively the network infrastructure is of critical importance. However, the policy argues that ICT infrastructure is not the main problem anymore. Small computers and (smart) phones are becoming more available and cheaper. They use simple power solutions and are becoming accessible to the general population. Most parts of Tanzania are covered with mobile networks and mobile Internet connectivity, which is sufficient to implement most of the eHealth strategy. Fibre optic, wireless solutions and satellite communication are already connecting a number of health facilities, and their numbers will increase rapidly in the near future. What is needed is to set standards and guidelines to assure interoperability of ICT in both clinical and administrative uses. Furthermore, the need remains rolling out and further improving existing ICT applications, while assuring that the health workers, especially in the field, are able to deploy ICT to improve their work and enhance health service delivery to the people (URT, 2010).

Challenges of Health Information System in Tanzania

It has been discussed earlier, Tanzania has put significant effort to transform the existing paper-based data health management information systems

into digital systems. However, introducing such ICT based initiatives to transform existing paper-based data collection tools and systems in public health institutions has come with a number of challenges such as: inadequate skills and knowledge at a local level to handle new systems and technologies; the lack of adequate financial resources, unequal infrastructural development, and political and bureaucratic constraints.

Generally, the challenge facing weak health systems including those in Tanzania is how to deliver proper health information and services. According to previous research, experiences from rural areas such as Morogoro, Bagamoyo, and Lindi in Tanzania is the poor communication networks that health workers are confronted with in delivering information on health control, and maternal and child health (Mushi & Chilimo, 2011). In order to address these challenges, the government should not underestimate investment in ICT initiatives. For this to be effective, public private partnership strategy is quite important.

Conclusion and Recommendations

Tanzania has a predominantly rural population of subsistence farmers who mainly speak local languages and Swahili, while most of the information on health services from practitioners and the academic research is available in English. Given this situation, there is a need for reliable, up-to-date, locally relevant information in local languages and Swahili. This means that in order to increase efficiency of information system, the government should ensure that most of the relevant health information is available and accessible in local language especially Swahili which is spoken by the majority.

To a greater extent, most ICT facilities are found in district hospitals in Tanzania. Hoever, the fact that the large population of the Tanzanians live in rural areas suggests the need for the government to increase connectivity in the rural communities to allow investment on ICTs in rural areas. The government should advance the use of mobile phone networks to help rural communities to access health information.

Any successful HIS development and implementation must begin with a detailed account of various contextual factors and issues that have been identified and emphasised by researchers and practitioners. In this regard, the government should make use of those research findings and see how those recommendations can be implemented (Mushi & Chilimo, 2011, Jimoh & Salawu, 2009 and Lucas, 2009).

References

Hennessy, S., Onguko, B., Harrison, D. Ang'ondi, E. K., Namalefe, S., Naseem, A. & Wamakote, L. 2010. Developing Use of ICT to Enhance Teaching and Learning In East African Schools: A Review of the Literature, <Http://Www.Educ.Cam.Ac.Uk/Centres/Cce/Publications/Cce_Report1_ Litrevjune 0210.Pdf. Accessed On 2 February 2013.

Jimoh, A. A and S.A. Salawu. 2009. The Role of Information Communication Technology (ICT) in the Achievement of the Millennium Development Goals (MDGs).

Katunzi, N. 2009. Speech by Dr. Naomi Katunzi, Permanent Secretary Ministry Of Communication, Science and Technology at the Launch of the Tanzania Knowledge Network, New Africa Hotel, Dar Es Salaam, 30 January. Dar Es Salaam. Tanzania.

Lucas, H. 2008. Information and Communications Technology for Future Health Systems in Developing Countries. *Social Science & Medicine, 66*(10) 2122-2132.

Mushi, R.T. and Chilimo, W. 2011. Contribution of Information and Communication Technologies to Malaria Control in Tanzania. *International Journal of Information Communication Technologies and Human Development* (IJICTHD), 2(2) 52-60.

Swarts, P. and Wachira, E. M. 2010. Tanzania: ICT Education Situational Analysis. GESCI: Global E-Schools and Communities Initiative.

United Republic of Tanzania. 2010. Ehealth in Tanzania: National Strategic Plan Final Draft Version 9.8.Http://Www.Tanzaniamhosw.Org. Accessed 23 November 2011

USAID. 2007. Tanzania Health System.<Http:// Www.Healthsystems2020.Org> Accessed 24 November 2011.

World Health Organisation- Health Metrics Network (WHOHMN) 2007. Assessment Of The Ethiopian Health Information System: Final Report. <Http://Www.Who.Int/Healthmetrics/ Library/Countries/Hmn_Eth_ His_ 2007_ En.Pdf> Accessed 24 November, 2011.

World Health Organisation (WHO) 2004. Consultancy Report: Emergency Situation in Amhara Region. Bahir-Dar, Ethiopia.