

A REVIEW OF INTEGRATED HEALTHCARE INFORMATION MANAGEMENT SYSTEM WORKFLOW IN PUBLIC HOSPITALS IN KENYA

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Abstract: Integrated healthcare information management system involves all levels in the healthcare service delivery and organization, engaging both managements in National and County levels. Health information system is the process of generating and managing information to guide evidence-based decision making in the provision of health and related services at the national and county level. All healthcare providers are obligated to report on information emanating from their activities through established channels in a manner that meets safety and confidentiality requirements. Globally, political instability and the emerging regional and national macroeconomic challenges triggered by the global economic downturn, together with climate change, have had an adverse impact on health. Nationally, Kenya as a country still faces health challenges, especially concerning children, from whom under-nutrition is the single greatest contributor to child mortality. Many people are also exposed to a heavy and wide-ranging disease burden, partly because of the county's unique geographical and climatic conditions. The difficult, disaster-prone environment in the arid and semi-arid regions of the country and the lush but malaria-prone regions in another part of the country, all have unique health risks associated with them. Kenya also faces problems of emerging diseases like Chikungunya and re-emerging diseases such as Bird flu and many others without forgetting HIV/AIDS, Tb. Also the country faces an increasing health burden from injuries and non-communicable diseases which are exacerbated by the negative underlying social health determinants in the country. Political instability in Eastern Africa region and the subsequent in-migration of a refugee into Kenya has the results of increasing the demand for health services in the country and raising the risk of spreading communicable diseases. Limitation in the regulatory and resource capacity and utilization have constrained the health sectors ability to harness fully the existing and emerging technology to manage most of the direct causes of ill health and death the unionization of health workers and recurrent industrial action also present new demands and challenges to the sector.

Keywords: health risks, Health information system, health services, health sectors, child mortality.

1. INTRODUCTION

Integrated healthcare information management system involves all levels in the healthcare service delivery and organization, engaging both managements in National and County levels. Health information system is the process of generating and managing information to guide evidence-based decision making in the provision of health and related services at the national and county level. All healthcare providers are obligated to report on information emanating from their activities through established channels in a manner that meets safety and confidentiality requirements. Globally, political instability and the emerging regional and national macroeconomic challenges triggered by the global economic downturn, together with climate change, have had an adverse impact on health.

Nationally, Kenya as a country still faces health challenges, especially concerning children, from whom under-nutrition is the single greatest contributor to child mortality. Many people are also exposed to a heavy and wide-ranging disease burden, partly because of the county's unique geographical and climatic conditions. The difficult, disaster-prone environment in the arid and semi-arid regions of the country and the lush but malaria-prone regions in another part of the country, all have unique health risks associated with them.

Kenya also faces problems of emerging diseases like Chikungunya and re-emerging diseases such as Bird flu and many others without forgetting HIV/AIDS, Tb. Also the country faces an increasing health burden from injuries and non-communicable diseases which are exacerbated by the negative underlying social health determinants in the country. Political instability in Eastern Africa region and the subsequent in-migration of a refugee into Kenya has the results of increasing the demand for health services in the country and raising the risk of spreading communicable diseases.

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2. HEALTH WORK FORCE

The World Health Organization (WHO) recommends at least 23 doctors, nurses and mid wives per 10,000 people. Kenya has one doctor, 12 nurses and midwives per 10,000 people. The health workers shortage but also inefficiency of health workers are big challenges for the Kenyan health eco system at large. The largest shortfall of health workers is in the rural areas where the urban areas are often not facing health worker shortage but have health workers that lack a certain level of capacity and efficiency.

Healthcare system and especially the public sector has a large shortage of qualified health workers. Due to financial restrains the government is not able to provide attractive salaries and maintain its health workers on board. This results in an overstressed HR system and causes regular strikes in public health facilities

3. ORGANISATION OF HEALTHCARE SERVICE DELIVERY SYSTEM

Kenya healthcare system is structured in a hierarchical manner that begins with primary health care, with the lowest unit being the community, and then graduates, with a complicated cases being referred to the higher level of healthcare. Central healthcare units consist of dispensaries and health centers.

As per Kenya Health policy, 2014-2030 gives directions to ensure significant improvement in the overall status of health in line with the constitution of Kenya 2010, the country long-term development agenda, vision 2030 and global commitments. It also highlights the six levels of the healthcare service delivery which assist in the referral system management. The six levels are as follows

Level 1. Community - COMMUNITY

Level 2. Dispensaries

Level 3. Health centers

Level 4. Primary referral – SUB - COUNTY

Level 5. Secondary referral facilities - COUNTY

Level 6. Tertiary referral facilities - NATIONAL

4. KENYA HEALTHCARE INFORMATION SYSTEM

In Kenya Healthcare information system management remains in infancy due to social, economic and technical challenges. Some of this challenges include high-cost eHealth system and innovation, low ICT literacy amongst users, lack of interoperability of healthcare information system, weak regulatory framework, a possible violation of patients' privacy and confidentiality.

For a successful implementation of an integrated Healthcare Information System in public hospitals the following systems should be in place for more natural workflow;

1. Hospital management information system
2. Patient management information system
3. Referral management information system

1. Hospital management information system (HMIS):

This is a system for patient care and hospital management. The system automates financial, administrative and patients care activities of the hospital, generates extensive management reports, operational statistics and offer a powerful query module. It generates as well maintains Electronic Medical Record (EMR) and makes it available across the hospitals.

Helps hospital administration in monitoring and control of the functioning of hospitals using decision support indicators and also assist the doctors and medical staff to improve health services with readily EMR of a patient. It provides work flow enables process and parameterized alarms and triggers while patient treatment cycle as well zoning of diseases. HMIS enables efficient decision making by the hospital management, top management and administrators for policy and strategic decisions.

2. Patient health information system:

Electronic medical record (EMR) and Electronic health record (EHR) gives patients health information generated by one or more encounters in any care delivery setting. Included in this information are patient demographic progress notes, problems, and medications, vital signs, past medical history, immunizations, laboratory data, and radiology reports. Personal health record (PHR) managed and controlled citizens. It is usually accessible, layperson comprehensible, lifelong tool for managing relevant health information promoting health maintenance and assisting with chronic diseases management via a common interactive data set of electronic information and e-health tool.

PHR is owned, managed and shared by the individual or his or her legal proxy(s) and must be secure to protect the privacy and confidentiality of the health information it contains.

3. Healthcare referral information system:

The system provides and guides to enhance healthcare service delivery at all levels. The services are based on the premise that, while capacity for health service delivery has to be rationalized around different levels of care, but rather by the full scope of care the health system can provide in the country. The national and county health referral networks function in an interdependent manner where all units, at different levels, depending on all other units for the harmonious performance of the referral system as a whole. Effective referral networks will provide linkages across the different levels of the health system, from the community to the tertiary level. This ensures that clients receive the full spectrum of care provided by the health system, regardless of the level at which they physically access healthcare.

Referral information system shall have four categories of elements.

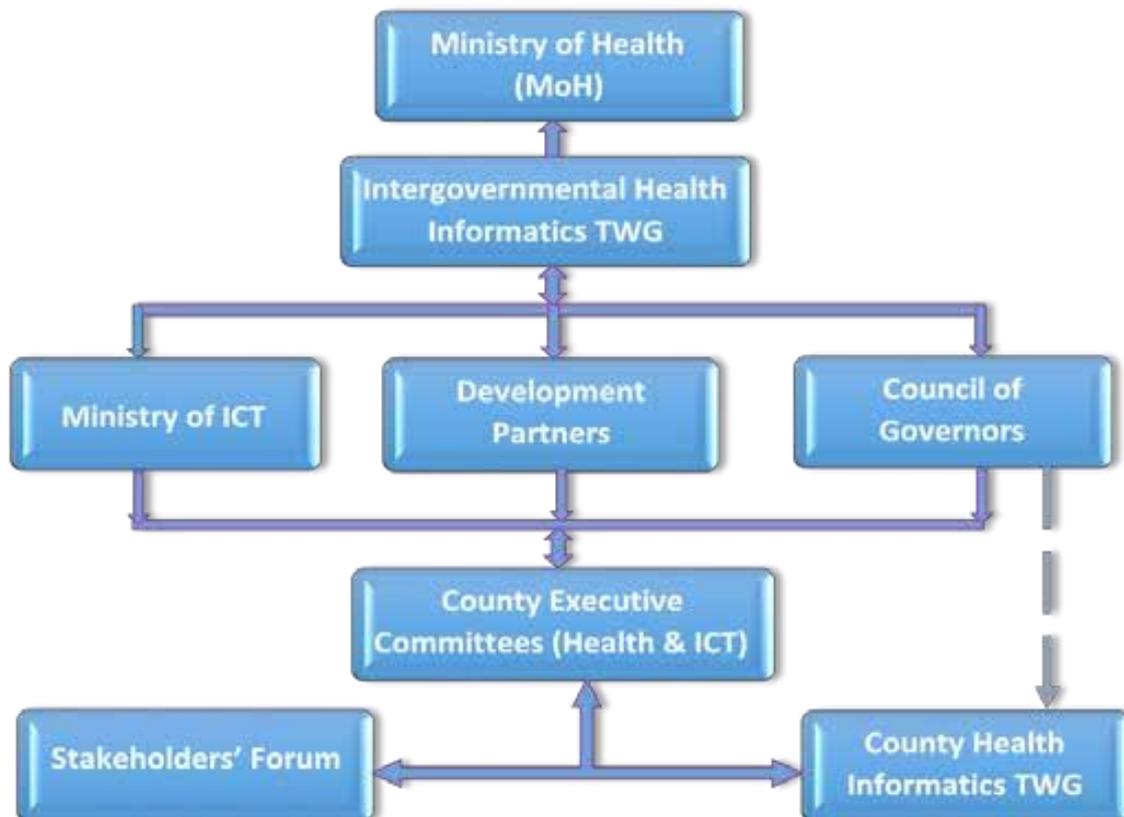
1. Client / Patient movement
2. Expertise movement
3. Specimen movement
4. Client / patient parameter movement

Advantages of the whole systems:

- Accounts responsibilities between the two levels of government (county and National) regarding respective accountability, reporting, and management lines.
- It enhances a comprehensive and innovative approach to the healthcare system.
- The system harness and synergize health services delivery at all levels and engaging all actors
- The system ensures information on the eHealth platform for patients and physicians is multilingual, multicultural, multi-professional and multijurisdictional.
- It provides an affordable broadband internet connectivity to all parts of the country to enable online access to eHealth services and information
- The system ensures that services are offered across a variety of eHealth access platforms including but not limited to mobile devices and community digital Centres
- There is sharing of information across the border on health incidences and history of a particular patient by healthcare professionals without compromising privacy.

5. IMPLEMENTATION FRAMEWORK

Through using eHealth policy Governance frame work, the following organization flow chart will be used for the implementation process.



All the above teams got part to play in the implementation process of the Integrated Healthcare information management system.

Ministry of Health:

The Ministry of Health (MoH) is the overall custodian of this eHealth policy whose main responsibilities include:

1. Initiation and coordination of IHIMS development, implementation, evaluation, and review at the national level through the departments responsible.
2. Facilitation of requisite linkages with inter-ministerial committees, and matters concerning the programme.

NATIONAL HEALTH INFORMATICS TECHNICAL WORKING GROUP:

The National Health Informatics Technical Working Group (Hi-TWG) is a high-level technical committee comprising of representatives from Ministry of Health, MoICT, health professionals, ICT industry, county governments, academia, CSOs, and development partners. The main task of Hi-TWG is to provide policy interpretations and oversee smooth implementation of the IHIMS at national and county levels of governance. To avoid overlap and duplication of roles, Hi-TWG will work in consultation with Ministries of Health, and ICT both at National and County levels.

MINISTRY OF ICT:

The Ministry of Information and Communications Technology (MoICT) is one of the crucial ministries whose responsibilities include:

1. Provision of technical support and advice required during development and implementation.
2. Monitoring and evaluation of organizational compliance with standards and guidelines for IHIMS infrastructure, device specifications, and software.

COUNCIL OF GOVERNORS:

The constitution of Kenya through article 6(2) requires governments at both levels to conduct their mutual relations by consultation and cooperation. This is, therefore, to operationalize by the establishment of the Intergovernmental Relations. The act also established the National and County Government Coordinating Summit as the apex for intergovernmental relations. It is through these bodies that both levels of government are expected to consult and co-operate in matters relating to the IHIMS.

DEVELOPMENT PARTNERS:

Development partners from Private Sector, International Organizations, Non- governmental Organizations (NGOs), Faith Based Organisations (FBOs), and Civil Society Organization (CSO) have made significant contributions in the health sector. The role of development partners in the implementation process is to establish partnerships with the national and county governments to strengthen institutions technical and financial capacity.

COUNTY EXECUTIVE COMMITTEES (HEALTH & ICTs):

The county departments in charge of Health and ICT will act as the link through which the national government and the Council of Governors will interact with the stakeholders and the County Health Informatics Technical Working Group (Chi- TWG). More specifically, the County Executive Committees (CECs) in charge of Health and ICTs shall be responsible for implementing county legislation relating to the use of IHISM applications and services. They are also responsible for resource mobilization and capacity building where they are required to budget resources for the implementation of the IHISM.

COUNTY HEALTH INFORMATICS TECHNICAL WORKING GROUP:

The County Health Informatics Technical Working Group CHi-TWG shall work in consultation with the stakeholders, and the County departments in charge of Health and ICT to fulfill the following roles:

1. Monitor compliance to IHISM in the implementation of the systems and application in each county
2. Shall help to oversee county inter-departmental collaboration in the implementation of the system.

STAKEHOLDERS FORUM:

The key roles of the stakeholders' forum are to identify and request for review of this policy to address inconsistencies or emerging issues. It is through the stakeholders' forum that will enhance consumer awareness on risks and benefits of using IHISM applications and services.

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