Ministry of Health

An overview of Knowledge Management platforms for health in Kenya

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Overview

Key Messages

- There are ten Knowledge Management (KM) repositories that exists in the health sector in Kenya.
- The Kenya Health Research Observatory (KHRO) is the national health knowledge management portal that houses national data/statistics and research repositories.
- Majority of the knowledge management platforms serve dual functionalities - allow users to query, retrieve and generate statistical information; and also serve as document repositories in that, they act as archives for current and past consultancy and research reports.

Recommendations

- There is need for Integration/linkage of information from existing knowledge management platforms to improve access to health information and data.
- Enhance utilisation of KHRO knowledge management portal to ease the development of frameworks and models for guiding, coordinating, sharing and distributing information; bringing people together for knowledge exchange; and availing evidence for evidence decision-making.
- A customised knowledge management platform such as *Utafitiwafya* needs to be linked with KHRO to enhance potential to catalyse sustained demand of research evidence by governments through organising, storing, retrieving, synthesis and visualising of research publications.

Introduction

Knowledge Management (KM) is a system that helps an organisation share, access, and update knowledge and information. KM can facilitate information dissemination and sharing, capacity building, education and distance learning, research support and documentation. In the health sector, KM can contribute to promoting and supporting communities of practice; supporting diseases and endemic surveillance and response; strengthening health systems; improving health outcomes; and ensuring useful information that exists in silos within organisations is well linked to the main KM repository.

Objective

The main objective of this brief is to map and describe primary functionalities of the various health KM platforms in Kenya.
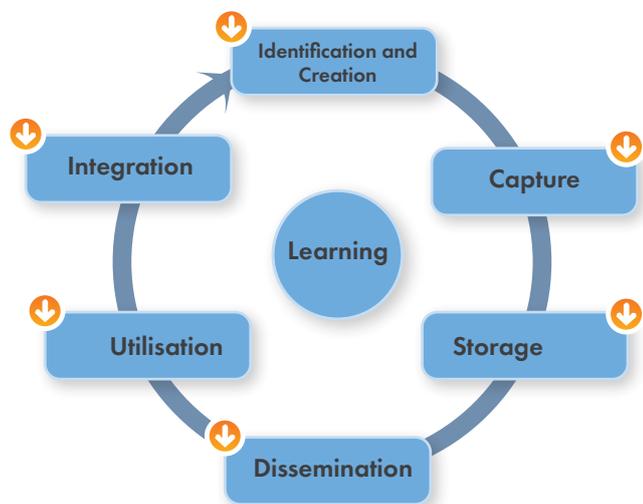
Knowledge management processes cycle

Knowledge management as a discipline is concerned with the way organisations create, capture, enhance, use and re-use knowledge to achieve organisational objectives. KM has six broad domains that when linked together form the KM Processes Cycle (see fig. 1).

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The primary purpose of KM is to foster a culture which creates, shares and leverages strategic information and evidence in support of decision-making; and continuous improvement and competency development within an organisation.

There are ten health related institutional websites that qualify to be knowledge management platforms. Further review indicates that these KM website have different functionalities and web architecture. Thus, we re-classified them as portals, platforms and repositories with respect to the KM processes cycle.

▷▷| **Figure 1: Knowledge management processes and value chain**

Web portals have multiple user functionalities such as ability to query database, upload and download documents, offers statistical/data visualisation through application programs interphase (APIs) as well as Artificial Intelligence (AIs).

Web platforms consist of information gathering sites, however they do not allow the users to upload, download documents. They have statistic and data visualisation for health.

Web repositories accept institutional documents and information which is stored in a database. However, the public only views the documents.

Adopted from: Lesson learned systems can also be an effective knowledge sharing approach to be used in health-care (Yassin & Antia, 2003). Date accessed: June 2021. https://bit.ly/3lz5i6t

▷▷| **Table 1: Profiles the various KM related institutional websites**

KM website classification	Year of launch	Hosted and managed by	Web link
Web portals			
Kenya Health Research Observatory (KHRO)	2018	MoH-UoN	https://khro.health.go.ke/#/
Utafitiwafya Research Repository	2020	KEMRI	https://utafitiwafya.or.ke/output_filter.php?type=date, www.utafitiwafya.or.ke
Kenya HIV Research Agenda	2014	NACC	https://nacc.or.ke/research-hub/, https://nacc.or.ke/research-hub/
EAC Knowledge Management Portal for Health	2019	EAC	https://health.eac.int/publications/kenya-national-ehealth-policy-2016-2030#gsc.tab=0
Web platforms			
African Health Observatory Platform on Health Systems and Policy (AHOP)	2020	WHO	https://www.afro.who.int/news/knowledge-brokering-platform-launched-support-health-systems-african-region
Knowledge Management Research Repository – KEMRI	2020	KEMRI	https://www.kemri.org/knowledge-management/
Web repositories			
Public and Private Universities that offer medical sciences related disciplines	various	Institutional	institutional emails
NACOSTI Information Databases Management	2021	NACOSTI	https://www.nacosti.go.ke/programmes/information-exchange
AfriAfya (African Network for Health Knowledge Management and Communication)-AMREF-	2000	AMREF	https://asksource.info/organisations/afriafya-african-network-health-knowledge-management-and-communication
KIPPRA Public Policy Repository	2021	COG	https://maarifa.cog.go.ke/, https://www.cog.go.ke/component/k2/item/232-kippra-launches-a-one-stop-online-public-policy-repository

Lessons learnt from the development of KEMRI's *utafitiwafya* knowledge management portal

The *utafitiwafya* platform is built based on web technology with three tier system architecture as follows:

- The client application was designed to serve many types of client interfaces.

- The basic application logic tasks were done in the second tier vis-à-vis the application services layer.

- The third layer of the architecture was the database server layer, which helped to organise and manage data and information for later retrieval and updating (remote server space).

- The functionality included packing, synthesis and visualisation of research outputs using complex logic coding algorithms.

Findings (Experiences)

Lack of county specific research repositories and inability by county health managers to use existing research publications to support informed decision-making processes led the KEMRI research team to develop and deploy the online platform, called *utafitiwafya* (research-for-health) KM platform.

There was a general acceptance by county health directors of the six pilot counties which served as learning sites. In addition, there was general acceptance by the county health managers that the *utafitiwafya* platform could assist solve their immediate need of capturing, sorting, storing a logical index of past proposals and research outputs emitting from their counties.

Disclaimer – it is too early in this stage to determine the effectiveness of the utafitiwafya platform.

Lessons drawn from the experience

- The use of open-source software tools helped reduce *utafitiwafya* programming/development costs. It also provided a flexibility, easy maintenance and sustainability of the platform.

- The demand for research to inform decision-making processes can occur both at managerial and operational/programme level if health care workers are engaged in generating the evidence and not imposed-on by researchers. A customised technology to aid county health departments' needs, has the potential to catalyse sustained demand for research evidence by governments through organising, storing, retrieving, synthesis and visualising research publications.

▷▷▷ **Below is a table summarising the importance of knowledge management platforms (portals, platforms, repositories)**

Study title	Intervention	Key findings	Recommendations
An Interoperability Framework for E-Government Heterogeneous Information Systems. Hillan Ronoh1, Kelvin Omieno[2], Stephen Mutua[3] (2018) doi: 10.17148/ijarcce.2018.71025	Interoperability framework for e-government information system	Based on their analysis, the reviewed maturity models are complementary rather than contradictory. It is therefore possible to structure them into one single maturity framework in a harmonised way to look for completeness and avoid redundancy.	Information that spans multiple agencies is very essential for successful process redesign in government's inter-operable system development.
How can Knowledge Exchange Portals Assist in Knowledge Management for Evidence informed decision-making in Public Health? BMC Public Health 14, 443 https://doi.org/10.1186/1471-2458-14-443 3.Quinn, E., Huckel-Schneider, C., Campbell, D. et al (2014).	Review of design, development or evaluation of Knowledge Exchange Portals (KEPs) in the public health field	Knowledge exchange portals mainly included design features to support knowledge access and creation, but formative evaluation studies examining user needs suggested collaborative features	Knowledge exchange portals can be a platform for providing integrated access to relevant content and resources in one location; for sharing and distributing information; and for bringing people together for knowledge exchange and support evidence informed decision-making in public health.
Knowledge Representation and Management: A Linked Data Perspective. Yearbook of medical informatics, (1), 178–183. https://doi.org/10.15265/IY-2016-022 : Barros, M., & Couto, F. M. (2016).	Three prominently linked data studies, namely Bio2RDF, Open PHACTS and EBI RDF platform	The analysis shows a tendency to use linked data techniques in life and health sciences, and even if some studies do not follow all of the recommendations, many of them already represent and manage their knowledge using Resource Description Framework (RDF) and biomedical ontologies.	As health institutes become more data centric, we believe that the adoption of linked data techniques will continue to grow and be an effective solution to knowledge representation.

Study title	Intervention	Key findings	Recommendations
Knowledge Management: The Case for Kenya. DO-10.4314/jolte.v2i1.51994 Journal of Language, Technology and Entrepreneurship in Africa- Mosoti, Zachar., Masheka, Becky (2010).	Knowledge Management Practices (KMP)	KMP though practiced is not well understood by most organisations within Nairobi. Most of the challenges faced by organisations in Nairobi, such as organisational culture, organisational strategy and organisational leadership can be overcome by effectively implementing KMP.	The study recommends that organisations should explore out how to benefit from culture diversity to improve KMP in Nairobi.

Conclusion

There are ten health related institutional websites that qualify to be KM platforms. They are classified into three categories to include; portals, platforms and repositories with access links. Lack of linkages and coordination was found to be the major gap and hindrance to access evidence for health decision-making as well as failure to identify research for health priorities.

There is need to adopt the Ministry of Health portal (KHRO) and link it with the existing health related knowledge management platforms to avail required evidence. Knowledge exchange portals can be a platform for providing integrated access to relevant content and resources in one location; for sharing and distributing information; and bringing people together for knowledge exchange. However, more performance evaluation studies are needed to determine how they can best support evidence informed decision-making in public health.

References

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