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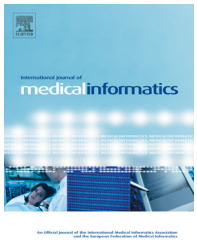

Kenya's Health Workforce Information System: A model of impact on strategic human resources policy, planning and management☆

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ABSTRACT

Objective: Countries worldwide are challenged by health worker shortages, skill mix imbalances, and maldistribution. Human resources information systems (HRIS) are used to monitor and address these health workforce issues, but global understanding of such systems is minimal and baseline information regarding their scope and capability is practically non-existent. The Kenya Health Workforce Information System (KHWIS) has been identified as a promising example of a functioning HRIS. The objective of this paper is to document the impact of KHWIS data on human resources policy, planning and management.

Methods: Sources for this study included semi-structured interviews with senior officials at Kenya's Ministry of Medical Services (MOMS), Ministry of Public Health and Sanitation (MOPHS), the Department of Nursing within MOMS, the Nursing Council of Kenya, Kenya Medical Practitioners and Dentists Board, Kenya's Clinical Officers Council, and Kenya Medical Laboratory Technicians and Technologists Board. Additionally, quantitative data were extracted from KHWIS databases to supplement the interviews. Health sector policy documents were retrieved from MOMS and MOPHS websites, and reviewed to assess whether they documented any changes to policy and practice as having been impacted by KHWIS data.

Results: Interviews with Kenyan government and regulatory officials cited health workforce data provided by KHWIS influenced policy, regulation, and management. Policy changes include extension of Kenya's age of mandatory civil service retirement from 55 to 60 years. Data retrieved from KHWIS document increased relicensing of professional nurses, midwives, medical practitioners and dentists, and interviewees reported this improved compliance raised professional regulatory body revenues. The review of Government records revealed few references to KHWIS; however, documentation specifically cited the KHWIS as having improved the availability of human resources for health information regarding workforce planning, management, and development.

☆ The findings and conclusions in this report are those of the authors and do not necessarily reflect the views of the U.S. Centers for Disease Control and Prevention and the Kenyan Government.

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Conclusion: KHWIS data have impacted a range of improvements in health worker regulation, human resources management, and workforce policy and planning at Kenya's ministries of health.

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1. Introduction

Countries worldwide are challenged by health worker shortages, skill mix imbalances, and their geographic and sectoral maldistribution. Among the most economically afflicted countries, these shortages are worsened by inadequate investment, out-migration, and HIV/AIDS [1], which increases the demand for services and renders health workers themselves vulnerable to death and disease [2]. The World Health Organization (WHO) has identified 57 countries where the health workforce shortages are at crisis levels [3]. These crisis countries are characterized by insufficient human resources to achieve standard care benchmarks, such as 80% coverage for both measles immunizations and skilled attendants at birth. As adequate numbers of healthcare providers can impact the health outcomes targeted in the United Nations Millennium Development Goals (MDGs) [4,5], there is concern whether human resources crisis countries, such as Kenya, can meet the health-related MDGs by the specified timeframe of 2015 [3,6].

While the demand for human resources for health (HRH) data and performance monitoring is a priority for the United States President's Emergency Plan for AIDS Relief (PEPFAR) and various global health initiatives [7–10], universal understanding of the human resources information systems (HRIS) used in monitoring HRH is minimal and baseline information regarding their scope and capability is practically non-existent [11]. In a global review of HRIS literature, Riley and co-authors (2012) found HRIS among HRH crisis countries are nascent and frequently lack information critical for addressing workforce policy and planning. The authors called for more descriptive research of HRIS globally, including the documentation of impact so as to advance the science and evidenced-based practice in this area. Responding to this call, and adding to an emerging body of peer-reviewed literature emanating from the Kenya Health Workforce Information System (KHWIS) [12–17], this paper provides a qualitative and quantitative review of KHWIS-generated information with regard to the Government of Kenya's health workforce polices and governance.

1.1. *Overview of the Kenya Health Workforce Information System*

The KHWIS was launched at the Nursing Council of Kenya (NCK) in 2002 with support from the U.S. Centers for Disease Control and Prevention (CDC), and has been the recipient of PEPFAR funding, through CDC, since 2005. With technical support provided by Emory University and CDC, KHWIS is owned and managed by the Government of Kenya (GOK) and its professional regulatory bodies of key health professions. The KHWIS comprises a series of databases, similar in design, developed and implemented by a local NGO, at the NCK, the Kenya Medical Practitioners and Dentists Board (KMPDB), Kenya's Clinical Officers Council (COC), and the Kenya Medical Laboratory Technicians and Technologists Board (KMLTTB), and an additional database housed at the Department of Nursing (DON) within the Ministry of Medical Services (MOMS) tracking nursing deployment. Equipment and connectivity are supplied and maintained by a local IT company. Deployment data from the provinces were initially interlinked with deployment data at the MOMS via satellite Internet connection, the system later moved to fiber-optic connection. The Windows based system was developed using VB.Net 2002–2010, running on MS SQL Server 2000 databases, hosted on servers operating Windows Server 2003, and accessed within a Local Area Network (LAN) for each board.[1] Provincial coordinators have access to the system using a CITRIX connection.

Key features of the KHWIS are components for capturing data on pre-service education, training, registration and relicensing, in-service specialties and upgrades, continuing professional development (CPD), human resources management, nursing deployment, and the ability to link nursing regulation data with nursing deployment data. The aim is to facilitate deployment of the right health workers (qualifications, skills mix) in the right place (deployment location) at the right time (availability) [18]. In 2011, KHWIS received an Award for Excellence from the WHO for its impact on human resources planning, health management, and the provision of workforce information resulting in positive policy changes [19].

2. Methods

Semi-structured interviews were conducted with a total of nine senior Kenyan officials from the MOMS, the Ministry of Public Health and Sanitation (MOPHS), and the four health professional regulatory bodies: NCK, KMPDB, COC, and KMLTTB. The purposive sample included senior management officials responsible for high level human resources (HR) decisions and policy making, and individuals at operational level in database management. Interviewees were asked to describe the impact KHWIS data had had on policy decisions and practice at their respective organizations. Impacts identified by the interviewees were explored further during the interviews using more probing questions. Key domains of inquiry

[1] Development has begun toward an open-source web-based application, known as the regulatory HRIS (rHRIS), which is to be accessible to users at county and district levels, provide an interface to other boards' databases using web services and application programming interfaces (APIs), and integrate with other systems such as Kenya's Master Facility List (MFL), enhancing data security and accessibility, reducing maintenance costs and increasing sustainability and scalability. This manuscript retains the terminology KHWIS to describe all the databases, regulatory and deployment, that was in use at the time of interviews.