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Examining Challenges Affecting Management of Health Workers' Information in Uganda

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Background: To effectively plan for human resources for health, health managers need to keep track of the size and composition of their human resources and to anticipate their future needs. Effective strategic planning is however informed by quality and reliable workforce information. However, in Uganda, existence and access to adequate information on human resources for health still remains a challenge. This limits the capacity of health managers to effectively monitor and make policies. To this end, this study set out to examine the challenges that affect the management of health human resources information in Uganda; with an aim to recommend a single authoritative source of health workforce information that can provide an accurate count of all health work-force in Uganda's health system.

Methods: We used qualitative methods to examine the challenges that are affecting the management of health workers information in Uganda. Key informant interviews were conducted with purposively selected health-related organizations with a stake in human resources for health information management.

Results: The study reports various systems used for health workforce information management, the common one being the integrated Human Resources Information System (iHRIS). The study also provides various challenges affecting these systems including fragmentation and uncoordinated human-resource systems, which results to duplication of health workers records, incomplete or missing data elements, and inaccurate health workforce accountability.

Conclusion: Given the nature of the challenges, the study denotes the need for a single authoritative source of health workforce information that can provide an accurate count of all health workforces in Uganda's health system commonly known as a National Health Worker Registry. The registry can be used to aggregate the key attributes for all health workers in the country. Thus, our future study will focus on defining country-specific features and requirements that NHWR should poses.

Keywords: Human Resource Information System, Healthcare Workers, Integrated Healthcare Systems

1 Introduction

Health systems depend critically on the size, skill mix and distribution of the health workforce for improving the health outcomes of population (1). Therefore for Uganda to progress towards universal health coverage it will need a health workforce that is aligned with the population and community health needs and which is capable of adjusting to the health sector reforms set out in the national and health sector plans (2). In order for health managers to effectively plan for human resources for health, they need to keep track of the size and composition of their human resources for health and to anticipate their future

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needs(3). This should be informed by good quality and reliable workforce data; without these data, decision-makers are unable to plan strategically or anticipate future needs(4). However in many countries including Uganda, relevant information on human resources for health (HRH) remain far from adequate; limiting the capacity of health managers to monitor policies on their human resources(5). The insufficient health worker information has led to chronic health workforce shortages, skill-mix imbalances, maldistribution, barriers to inter-professional collaboration, inefficient use of resources, poor working conditions, a skewed gender distribution and an ageing workforce further complicating the picture in many cases (2). Furthermore, reviewing past efforts in implementing national, regional and global strategies and frameworks on human resources for health, the key challenge is how to provide concrete evidence to mobilize the political will and financial resources to improve the status of health workers in the country(6).

A timely, reliable and relevant health worker information system is essential to support the formulation, and monitoring and evaluation of health workforce plans, strategies and policies at the sub-national, national and international levels (7). Unfortunately, for most countries, there remains a significant lag between the demand for data and the availability and usefulness of the information required to support decision-making (8). In a survey by WHO conducted in 2012, 81% of the countries in Africa had Human Resources for Health Information Systems (HRHIS) in place in respective Ministries of Health and 19% did not have (9). Furthermore, only five of the 16 countries investigated, had their HRHIS linked to the Health Management Information Systems (HMIS), while for 11 countries the systems were not linked; in other words the systems are currently stand-alone (9). Unlinked systems may also cause some duplication in human resources information seated in various databases in different departments, e.g. cadre-specific data seating in different programs, yet this data if not linked, the overall picture is not clear (10). Precisely, defining and classifying the health workforce remains an important challenge in comparing information across sources which makes it difficult to use the data for decision making and developing evidence-based policy options (4). WHA Resolution WHA69.19 in 2016 urges Member States to implement policy options towards: consolidating a core set of human worker data with annual reporting to the Global Health Observatory, as well as progressive implementation of national health workforce accounts (11). Furthermore, during Dublin Declaration on HRH in 2017 included the establishment of health workforce information systems for progressive implementation of National Health Workforce Accounts to support evidence-based policies and planning for labour market transformation and employment for health (5). However, having functional HRH information systems to obtain reliable information for evidence-based HRH planning, development and management remains a major challenge in low-income countries. To this end the study set out to examine the challenges affecting management of health worker information in Uganda with an aim to devise a single authoritative source of information for all health worker information.

2 Research approach

The study employed qualitative approaches to inquiry. This method was chosen due to its ability to provide complex textual descriptions of how people experience a given research issue (12). We purposively selected the study respondents on the basis of their knowledge, relationship to the subject matter and expertise; in this case health worker registry and health information exchange. Additionally, the snowball strategy was used where interviewed respondents would refer their acquaintances to participate in the study. A total of 28 key informant interviews were conducted. The informants were selected at all levels of Uganda's health system, i.e. national level, sub national level and health facility level. At national level subject matter respondents were selected from the Ministry of Health (human resources division, information technology unit, division of health information, clinical services department), two respondents from the professional councils, all the five medical bureaus, two from the academic institutions, and one respondent from a health professional association. At subnational level, respondents were selected from the four major regions of the country (Eastern, Northern, Central and Western region), and at health facility level, the respondents included health workers from regional referrals, private for-profit health facilities and lower level health centers. Key cadres such as Medical doctors, nurses, midwives, lab technicians among others were selected purposively to make sure a representation of cadres in the service delivery is ensured. In all interviews, written or verbal consent was

sought before the interview. Data collection was completed over a period of 6 months and ended upon saturation, that is, when no further themes or new information emerged to add to the understanding of the phenomenon. Manual content analysis was used to analyze the data analysis; related codes identified from the data were grouped together to form categories and later merged into themes as discussed in the results section.

3 Results

Respondents' distribution by organization – the selection of respondents is described in the preceding section and visualized in Figure 1.

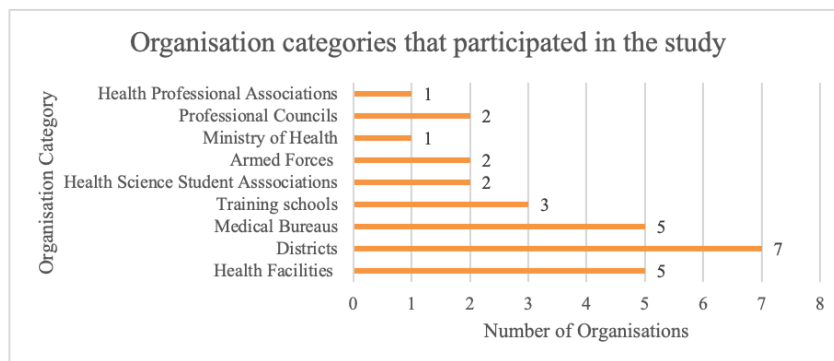


Figure 1. Respondents' distribution by organization

3.1 Systems used for Health Human Resources Information Management in Uganda's Health System

In Uganda, various systems are being used to manage data on the health workforce (see figure 2), the common system being iHRIS (63%). The iHRIS is a suite of applications used by different institutions at national through sub national to health facility levels. Also health facilities use a paper based system (17%), which is largely paper-based. Another system commonly used is the Ms Excel application (10%) that stores health workers' information in institutions such as academic institutions, health facilities and some districts; and finally a web portal system (7%), where health workers register their information is used by health professional councils and associations.

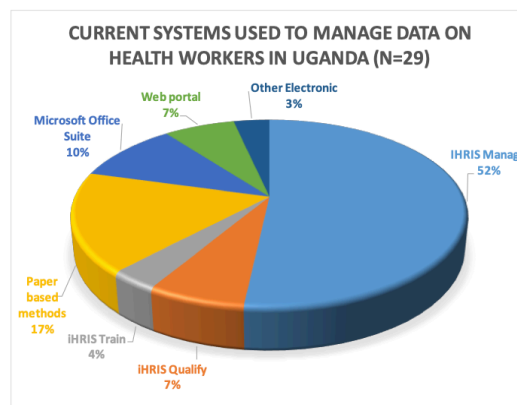


Figure 2. Current systems for HRH information management

3.2 Characteristics of the HRH Information Management systems

Integrated Human Resources Information System (iHRIS) – the iHRIS has four modules including iHRIS Manage, iHRIS Qualify, iHRIS Plan and iHRIS Train. iHRIS Manage is used for tracking detailed information about health workers throughout their employment i.e. where they are deployed, salary history, promotions and transfers, qualifications, in-service training courses, and reasons for attrition; tracking open positions and applicants. It is used mainly at Ministry of Health, Districts, Medical Bureaus and large health facilities (regional and national referral hospitals). iHRIS Qualify is used professional councils to register and license all health professionals. iHRIS Train is used to track and manage health worker training activities, including preservice education and in-service continuing education; and mainly used at health-related educational institutions. iHRIS Plan is a module that is used to model long-term health workforce needs and is useful for forecasting.

HRH paper-based system – involves keeping records of HRH in paper files in file folders and stored on shelves. The system is used to register health workers in training institutions, health facilities and some districts.

Microsoft Office suite (MS Excel) – this involves use of Microsoft office suite applications like Excel to manage data for in-service or pre-service health workers. Particularly data on the general and payroll for students and health workers in health training institutions, some sub-national institutions and health facilities is captured.

Web Portal– this is a web page linked to a database used to register health workers as part of being members of an association; it is mainly used by health professional associations to register health workers for membership.

In-house HRH information systems – lastly, there are small in-house developed HRH data management systems used in specific institutions that have health workers such as the Armed forces.

3.3 Challenges affecting HRH Information Management

Several challenges were reported to affect effective HRH data management systems in Uganda. These challenges are categorized as organizational, technology and data use challenges.

Organizational challenges – Fragmented systems are used to manage data on human resources for health in Uganda, that is, each of these instances is stand-alone system. Each regional referral hospital can manage their staff using the instance that they have at the facility. No agreed upon means of uniquely identifying health workers in the entire health system in Uganda (different systems use different IDs), for example the iHRIS has health worker unique identification numbers known as health worker numbers. However on resignation or leaving of any health worker from the ministry, this number will be assigned to the new staff that replaces the previous health worker. Ministry of Health cannot be able to update iHRIS instances at health facility level even when they commission transfers of health workers. Resource constraints in terms of logistics and time to collect the paper based forms from lower level health facilities to update the electronic system at the district. Human resources managers being in the back seat (IT managing the system) hinders full use of the system.

Technology and data related challenges -Unstable internet, hardware issues, standalone nature of the applications, software limitations were among the major technology challenges. The national HRH information system is challenged with several data quality issues since many instances are not up to date (missing and incomplete information). The study found out that the process of updating the system is very cumbersome. For the national iHRIS instance, the system managers have to collect the data from the health facilities and districts. The same process is also constrained by staff attrition; this affects data updates to be made in the system (data may take long to be updated) especially in health facilities, which manage their own system instances. The current national system also lacks the numbers of the health workforce in the private sector.

Data use challenges – there are several data use challenges affecting HRH data management systems. For instance, a comprehensive report on all health workers in the country takes long to be generated since

data has to be collated from various sources. There is also a knowledge gap on the side of system managers to carry out analysis of the data. Inability to generate performance reports such as patient-clinician ratios other than just attendance due to lack of health information exchange with other systems like the medical records systems. Data needed to plan health worker inflows and outflows is missing in the systems. For instance, the web portal at the professional councils does not capture numbers of health workers who have been trained, as such it is difficult to easily calculate the proportion of health workers who have been licensed out of all graduates in the country. No reminders for expiry of licenses or transfers of health workers. There is delayed data synchronization in the system (iHRIS) once a change on a local site like a health facility is made. This leads to generation of wrong reports in case the system has not been updated with the most recent information. Incompatible data formats in the various systems. Naming of health workers cadres (positions) varies from system to system.

4 Discussion

Study findings indicate that different organizations run silo systems for managing data on health workers. In addition, some of the installations are fully functional while others are not. This makes it very hard to get a snap shot of all the health workers nationwide very quickly. A paper on monitoring and evaluation of human resources for health also noted that the two major challenges for HRH data compilation at the international level are to identify appropriate sources of HRH data at country level for timely analysis (13). It goes further to note that in many countries, information on the health workforce is fragmented, and the statistics generated by these various sources have received limited public dissemination and generally been underused (14).

This is common in many countries as data on health workers is collected partly due to lack of understanding of the full spectrum of the health worker force information which stems from training to inflows and outflows into the labor market. This is also because there are different bodies which manage sections of such data, that is, Ministry of Education managing health worker training information, Ministry of Health managing employment. This makes it hard to get data in one place. The study findings are consistent with previous reports and literature (15).

The Ministry of Health report (16) mentions a varied functionality of the iHRIS due to lack of updates. A recent study notes that even in countries where updated data are available, it may be difficult to establish the size and composition of the health workforce because data is not standardized to compare the data across systems and across countries (17).

5 Conclusion

This study examined multiple systems and challenges facing management of information on human resources for health in Uganda. Based on the study findings, the current HRH information management systems need to be strengthened if Uganda is to implement the Global strategy on human resources for health workforce 2030 in a bid to strengthen the health workforce to move the country towards achieving universal health coverage. Thus far, the study identifies the need for a single authoritative source of health workforce information that can provide an accurate count of all healthcare personnel that either have worked or are currently working at national or sub-national levels, including in the private sector. The single authoritative source is what we refer to as the National Health Worker Registry (NHWR). Consequently, further studies are needed on examining country-specific features and requirements/services for a National Health Worker Registry.

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