



Ministry of Health

Human Resource Information System (HRIS) Strengthening Plan 2010/11- 2014/15

**Improving Information for Evidence Based
Decision Making**

January 2011

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FOREWORD

Over the past decade, the imperative of building strong national health systems has gained heightened global attention. In Uganda, the unprecedented resources have been made available by the Government of Uganda and her development partners to combat the major pandemics.

However, the capacity for ensuring that the right health care provider is in the right place with the right skills has remained weak over time. Reliable, timely and accurate information has hitherto been scanty to make the right health sector decisions. The sector requires current, accurate data on human resources for health (HRH). A strong human resources information system (HRIS) enables health care leaders to quickly answer the key policy and management questions affecting service delivery.

A well functioning health information system is one that ensures the production, analysis, dissemination and use of reliable and timely health information by decision-makers at different levels of the health system, both on a regular basis and in emergencies.

This Human Resource Information Systems (HRIS) strengthening plan is another dimension of providing solutions to supply health sector leaders with the information they need to assess HR problems, plan effective interventions and evaluate those interventions. The plan will enable managers make informed decisions with some of the essential nuts and bolts for strengthening the health system.

The best measure of a health system's performance is its impact on health outcomes. In order to improve performance of the health sector we all need information for decision making. Lack of information can stifle planning processes. System strengthening is a process which requires careful planning. The need for HRIS strengthening plan is therefore of paramount importance.

This HRIS strengthening plan moves the health sector in the right direction, on a course that must be given the highest priority. HRIS is a fundamental "building block" of a health system and a tool for policy-makers and planners in the health sector. I want to urge all HRH stake holders to embrace, support and jointly implement this HRIS strengthening plan.

Nathan Kenya Mugisha
Ag. Director General

Acronyms and Abbreviations

DBMS	:	Database Management System
DHO	:	District Health Officer
HDD	:	Hard Disk
HMIS	:	Health Management Information System
HRM	:	Human Resource Management
HSD	:	Health Sub-District
HSSP	:	Health Sector Strategic Plan
HU	:	Health Unit
ICT	:	Information and Communications Technology
IT	:	Information Technology
LAN	:	Local Area Network
M&E	:	Monitoring and Evaluation
MDG	:	Millennium Development Goal
MIS	:	Management Information System
MoH	:	Ministry of Health
Ms	:	Microsoft
OS	:	Operating System
PEAP	:	Poverty Eradication Action Plan
PEPFAR	:	US President's Emergency Plan for AIDS Relief
PPO	:	Principal Personal Officer
RC	:	Resource Centre
SQL	:	Structured Query Language
TNA	:	Training Needs Assessment
ToT	:	Training of Trainers
UCP	:	Uganda Capacity Program
USAID	:	United States Agency for International Development
LAN	:	Local Area Network
WAN	:	Wide Area Network
WHO	:	World Health Organization

1.1 BACKGROUND AND CONTEXT

World over, the demand for medical professionals is increasing while the supply is decreasing. To establish the trends as to whether there is an increase or decrease, the health system requires accurate and timely information. This information is required at all levels for decision making.

The Uganda Ministry of Health (MoH) provides leadership for the health sector: it takes a leading role and responsibility in the delivery of curative, preventive, promotive, palliative and rehabilitative services to the people of Uganda in accordance with the sector plans. The provision of health services in Uganda were decentralized with districts and health sub-districts (HSDs) playing a key role in the delivery and management of health services at district and health sub-district (HSD) levels, respectively. Unlike in many other countries, in Uganda there is no 'intermediate administrative level (province, region). The health services are structured into National Referral Hospitals (NRHs), Regional Referral Hospitals (RRHs), general hospitals, health centre IVs, HC III and HC IIs. The HC I has no physical structure but a team of people (the Village Health Team (VHT)) which works as a link between health facilities and the community.

The core functions of the MoH headquarters are:

- Policy analysis, formulation and dialogue;
- Strategic planning;
- Setting standards and quality assurance;
- Resource mobilization;
- Advising other ministries, departments and agencies on health-related matters;
- Capacity development and technical support supervision;
- Provision of nationally coordinated services including health emergency preparedness and response and epidemic prevention and control;
- Coordination of health research; and
- Monitoring and evaluation of the overall health sector performance.

Several functions have been delegated to national autonomous institutions. They include specialized clinical services (Uganda Cancer Institute, Uganda Heart institute), specialized clinical support services (Uganda Blood Transfusion Services (UBTS), Uganda Virus Research Institute, National Medical Stores and National Public Health Laboratories), regulatory authorities such as various professional councils and the National Drug Authority (NDA) and research institutions. The Uganda National Health Research Organisation (UNHRO) coordinates the national health research agenda, whilst research is conducted by several institutions, including the Uganda Natural Chemotherapeutic Research Laboratory. The Health Service Commission (HSC) is responsible for the recruitment, deployment, promotion and management of HRH on behalf of the MoH, including handling requirements for, and terms and conditions of service. In the districts, this function is carried out by the District Service Commissions. The Uganda AIDS Commission (UAC) coordinates the multispectral response to the HIV/AIDS pandemic.

The National Hospital Policy, adopted in 2005, spells out the role and functions of hospitals at different levels in the NHS and was operationalized during the implementation of the HSSP II.

Hospitals provide technical back up for referral and support functions to district health services. Hospital services are provided by the public, PHPs and PNFPs. The public hospitals are divided into three groups namely¹:

(i) **General Hospitals** provide preventive, promotive, curative maternity, in-patient health services, surgery, blood transfusion, laboratory and medical imaging services. They also provide in-service training, consultation and operational research in support of the community-based health care programmes.

(ii) **RRHs** offer specialist clinical services such as psychiatry, Ear, Nose and Throat (ENT), ophthalmology, higher level surgical and medical services, and clinical support services (laboratory, medical imaging and pathology). They are also involved in teaching and research. This is in addition to services provided by general hospitals.

(iii) **NRHs** provide comprehensive specialist services and are involved in health research and teaching in addition to providing services offered by general hospitals and RRHs.

NRHs provide care for a population of 30 million people², RRHs for 2 million people while general hospitals provide for 500,000 people. All hospitals are supposed to provide support supervision to lower levels and to maintain linkages with communities through Community Health Departments (CHDs). Currently, there are 56 public hospitals: 2 NRHs, 11 RRHs and 43 general hospitals. There are 42 PNFP and 4 PHP hospitals. The operations of the hospitals at different levels are limited by lack of funding. With decentralization, the public general hospitals are managed by the MoLG through district local governments. The RRHs, even though they have been granted self accounting status, are still managed by the MoH headquarters. The NRHs, namely Mulago and Butabika, are fully autonomous. All PNFP hospitals are self accounting as granted by their respective legal proprietors.

The district health system

The Uganda Constitution of 1995 and the 1997 Local Government Act mandate the District Local Government to plan, budget and implement health policies and health sector plans. The Local Governments have the responsibility for the delivery of health services, recruitment, deployment, development and management of human resource (HR) for district health services, development and passing of health related by-laws and monitoring of overall health sector performance. These Local Governments manage public general hospitals and health centers and also provide supervision and monitoring of all health activities (including those in the private sector) in their respective areas of responsibility. The public private partnership at district level is however still weak in terms of communication and linkages.

The HSDs is a lower level after the district in the hierarchy of district health services organization. The health Sub District is mandated with planning, organization, budgeting and management of the health services at this and lower health center levels. It carries an oversight function of overseeing all curative, preventive, promotive and rehabilitative health activities including those carried out by the PNFP, and PFP service providers in the health sub district;

HC IIIs provide basic preventive, promotive and curative care and provides support supervision of the community and HC II under its jurisdiction. There are provisions for laboratory services for diagnosis, maternity care and first referral cover for the sub-county. The HC IIs provide the first level of interaction between the formal health sector and the communities. HC IIs only provide

¹ Ministry of Health. (2005). *National Hospital Policy*. Kampala: Ministry of Health.

² Ministry of Health. (2009). Annual health sector performance report 2008/2009. Kampala: Ministry of Health.

out patient care and community outreach services. An enrolled comprehensive nurse is key to the provision of comprehensive services and linkages with the village health team (VHT).

A network of VHTs has been established in Uganda which is facilitating health promotion, service delivery, community participation and empowerment in access to and utilization of health services. The VHTs are responsible for:

- Identifying the community's health needs and taking appropriate measures;
- Mobilizing community resources and monitoring utilization of all resources for their health;
- Mobilizing communities for health interventions such as immunization, malaria control, sanitation and promoting health seeking behavior; Maintaining a register of members of households and their health status;
- Maintaining birth and death registration; and
- Serving as the first link between the community and formal health providers.
- Community based management of common childhood illnesses including malaria, diarrhoea, and pneumonia; as well as distribution of any health commodities availed from time to time

While VHTs are playing an important role in health care promotion and provision, coverage of VHTs is however still limited: VHTs have been established in 75% of the districts in Uganda but only 31% of the districts have trained VHTs in all the villages³. Attrition is quite high among VHTs mainly because of lack of emoluments.

The health service delivery in Uganda

The delivery of health services in Uganda is done by both the public and private sectors with GoU being the owner of most facilities. GoU owns 2242 health centres and 59 hospitals compared to 613 health facilities and 46 hospitals by PNFPs and 269 health centres and 8 hospitals by the PHPs⁴. Because of the limited resource envelope with which the health sector operates, a minimum package of health services has been developed for all levels of health care for both the private and the public sector and health services provision is based on this package. Over the period of implementing the HSSP III, structures will be put in place in order to ensure that all people in Uganda have equitable access to the basic package of health care.

HRH Status

The total number and skill mix of the health workforce are inadequate to effectively respond to the health needs in Uganda. The total estimated health workforce is about 46,000, serving a total projected population in Uganda of about 31 million. This means that there is one health worker for over 600 people, taking the entire health workforce together. According to WHO a country with less than 2.28 health workers (doctors, nurses and midwives only) per 1000 population is regarded to be in severe shortage of health workers to meet its health needs. For Uganda this ratio is about 0.55. The nationwide health staff audit in June 2010 found that only about 56% of the established positions are currently filled. The available health workforce is inequitably distributed. About 71% of the doctors and 41% of the nurses and midwives are located in urban areas where only 13% of the population lives, while 87% of the population is

³ Ministry of Health. (2009). *Annual health sector performance report 2008/09*. Kampala: Ministry of Health.

⁴ Ministry of Health. (2008). *National health accounts financial year 2006/07*. Kampala: Ministry of Health.

rural. The productivity of the health workforce is low, characterized by high rates of absenteeism estimated at an average of 40%. This is partly attributable to weak leadership and management, and unsatisfactory work environment characterized by shortage of supplies and basic equipment, lack of staff accommodation and other social amenities.

The institutional capacity for HRH policy and planning is weak. There is no capacity to develop, regularly monitor and review HRH policy and plans either at national or district level. Although significant steps have been taken in the development of HR Policy and HRH Strategic Plan, deployment and utilization the health workforce are still not rigorously directed in a sustainable manner. This results in a mismatch between service requirements and training, both in numbers and skills, and inequity in the distribution of the available human resources.

The main HRH issues in Uganda include:

- Losses of doctors and well qualified nurses
- Losses of nurses to non-health care employment
- Poor staff morale
- High absence rates
- Inequity of healthcare service provision, due to the many vacant posts in less favored Districts
- Staff shortages due to the increased demand for healthcare services, following the provision of free care
- The inability to quantify these issues and to monitor trends, due to the lack of computer based health workforce information

In order to address these issues, the health system requires accurate, relevant, adequate and timely information. The need for Human Resource Information System is greater now than ever before.

Against this background, a Health Workforce Advisory Board (HWAB) was formed to tackle HR issues related to HRIS. The HWAB produced a Capacity Project supported health worker satisfaction and retention study, which was published in 2006 (Ministry of Health 2006). Some of the findings showed that locally trained staff were more likely to stay in their home districts and those with higher qualifications, such as doctors, were keenest to migrate to better paid jobs in other countries. Good working conditions, such as having enough space and adequate equipment required to do a good job were considered as being important. The availability of housing for staff within easy reach of healthcare facilities was also rated as important.

The management of staff in clinics and district general hospitals is devolved to district level, which also includes staff from other ministries that were formerly managed centrally. The MoH is responsible for staff in regional referral and national referral hospitals in addition to MoH headquarter staff.

The Human Resource Information System (HRIS)

The human resource information system (HRIS) is a computerized integrated system for managing information used in decision making. The HRIS is supposed to link all human resource data from the time professionals enter pre-service training to when they leave the workforce. The system consists of electronic databases for storing the information, software for entering and updating data and reporting and analysis tools.

Ideally, a strong human resources information system (HRIS) enables health care leaders to quickly answer the key policy and management questions affecting health care service delivery. Uganda's previous, HRIS relied heavily or exclusively on paper forms and had several weaknesses. Notably, the information was fragmented in different departments, incomplete, out of date and not regularly shared. A new, electronic HRIS was developed by the Ministry of Health with financial and technical support from the United States Agency for International Development (USAID) through the Capacity Project. It was built on free, Open Source software distributed under the General Public License (GPL), to minimize maintenance costs and ensure sustainability. The assistance entailed strengthening the capacity of the existing institutions through provision and installation of equipment, software and training to ensure technology transfer.

The overall goal of the computerized HRIS is to contribute to availability of the right number of the health workforce with the right competencies, in the right place, doing the right job at the right time.

The objectives of the HRIS are to:

- Improve timely availability of accurate and up to date HRH data for policy, planning and management.
- Track the health workforce as they move through the health system
- Increase efficiency in the management and maintenance of Health Workforce data
- Quicken aggregation, analysis and use of data
- Quicken information flow and facilitate regular reporting on the health workforce

The Knowledge Management Portal was subsequently established at the Resource Centre of the Ministry of Health to facilitate online information sharing. It links with the different professional Council HR data systems to avail information from the Council databases to other users. The Knowledge Management Portal has proved to be a useful medium for sharing other information on health, not just HR information, and it is being used to disseminate important reports like the Health Sector Annual Performance Reports, Study Reports, and Health Policies and Plans.

The Knowledge Management Portal can be accessed at <http://library.health.go.ug/jla/>

Human Resources for Health Bi-annual Reports are also produced regularly to synthesize and integrate HRH information from the HRH databases and other HRH reports from both public and private sources to avail current HRH information in a form that can be accessed by individuals with no ready access to internet.

1.2 JUSTIFICATION FOR HRIS STRENGTHENING PLAN

To ensure that the right health care provider is in the right place with the right skills, Uganda requires current, accurate data on human resources for health (HRH). A strong human resources information system (HRIS) enables health care leaders to quickly answer the key policy and management questions affecting service delivery. The Capacity Project developed the human resources information system (iHRIS) software, an integrated suite of Open Source HRIS solutions to supply health sector leaders with the information they need to assess HR problems, plan effective interventions and evaluate those interventions.

. The IntraHealth-led Capacity Project is working to strengthen HRIS in nine countries: Botswana, Kenya, Lesotho, Namibia, Rwanda, Southern Sudan, Swaziland, Tanzania and Uganda.

HRIS has three parts

a) iHRIS Qualify: for professional councils

iHRIS Qualify can capture and aggregate data on a cadre of health workers from the time they enter pre-service training through registration and licensure. It can also track deployments, issue licenses for private practice clinics and record out-migration verification requests. Thus, it provides a complete country-level picture of that cadre of health workers, whether in training, or employed in the public or private sector.

The data captured by iHRIS Qualify can be used by policy-makers to determine:

- How many trained students pass the certification/accreditation exam?
- Of the students who pass the exam, how many register to practice?
- Are health professionals meeting their continuing education requirements?

iHRIS Qualify is typically managed by the licensing or certification authority for a health worker cadre, such as a nursing council. The council can use iHRIS Qualify to capture, update and report data that can help to:

- Enforce minimum qualifications for students entering training programs
- Administer national-level examinations that qualify a graduating student to practice within the country
- Verify that continuing medical education requirements have been completed before renewing licenses
- Issue private practice licenses to qualified health professionals

Verify qualifications of foreign-trained health workers applying to work within the country and internal health workers applying to work in foreign countries.

It is currently installed in the four health professional councils in Uganda i.e. Uganda Nurses and Midwives Council, Pharmacy Council, Uganda Medical and Dental Practitioners Council and the Allied Health Professionals Council.

b) iHRIS Manage: for the ministry and districts

Under this HRIS strengthening plan, iHRIS Manage is a human resources management tool that will enable an organization to form and manage a comprehensive human resources strategy. Using the system, the HR professional can create a hierarchy of positions for an organization based on standard titles, job classifications and job descriptions, even spread over diverse geographic locations, offices and facilities. The HR manager can then hire employees to fill each open position and maintain a searchable database of all employees, their skills and qualifications. The HR manager can track each employee's history with the organization, including their performance, training and salary history, and record the reason for departure when the employee leaves.

A decision maker within the organization can analyze this data to answer key policy questions, such as:

- Are employees deployed in posts that match their qualifications and training?
- Are employees optimally deployed in locations to meet priorities?
- How many workers need to be recruited to fulfill anticipated vacancies?
- Are pay rates equitable across similar jobs?
- Are employees requesting and receiving trainings?
- Are employees being promoted in alignment with updated skills?
- What is the retirement status of employees?
- What are the reasons for employee attrition?

The system is currently installed at the ministry of health, Mulago and Butabika national referral hospitals and in 27 districts.

c) iHRIS plan: for planning purposes

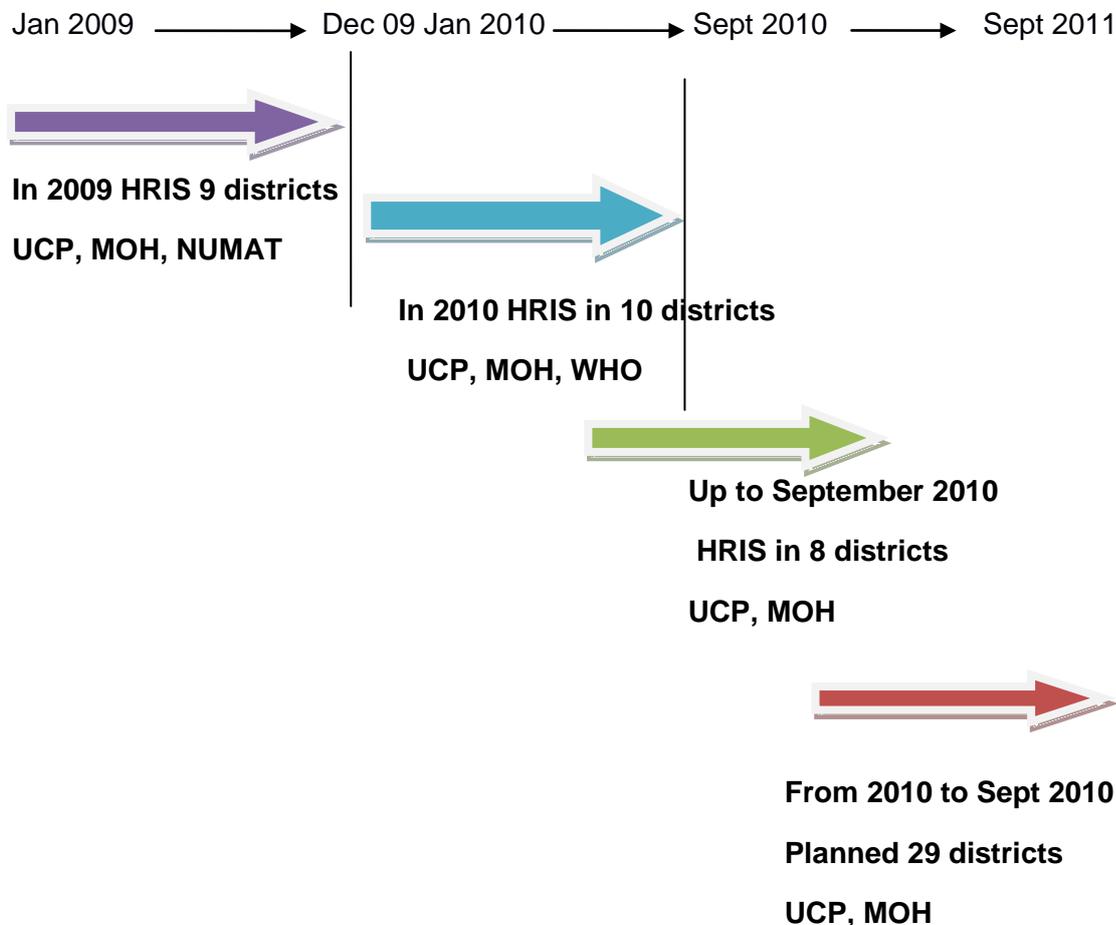
iHRIS Plan uses data from iHRIS Qualify and iHRIS Manage—the other two components of the iHRIS suite—as well as other sources of HR data to form a complete picture of the health workforce in the country, which can be analyzed by cadre. The software projects how that workforce will change in the future based on known influences such as attrition due to retirement, illness and out-migration and the number of trained health workers annually entering the workforce. This projection is compared to the anticipated health workforce needs over the same period, calculated from a targeted health worker-to-population ratio set by cadre. The software visually displays the gap between actual workers and needed workers over time to help planners quickly assess how to meet health workforce needs. To aid with decision-making, the user can estimate the costs of training and staffing plans. iHRIS Plan has not yet been deployed in Uganda.

SITUATION ANALYSIS

The HRIS strengthening plan started with conceptualization of what needed to be done to elicit information, package it and share it with relevant stakeholders for decision making. The information needs of the health sector were established at both national and sub-national levels. Subsequently, a conceptual framework was developed and is being implemented.

The strengthening of HRIS at the national and district levels has progressed significantly well over the last 3 years or so. In October 2009, there were only 9 districts with HRIS databases. The number of districts with HRIS databases has reached 27 in October 2010, surpassing the annual target of 19 districts set the MoH and her development partners. HRIS has also been extended to the national referral hospitals of Mulago and Butabika. These results are due to the efforts of the program team (i.e. MoH,UCP, and WHO) in sensitizing stakeholders on the importance of using a computerized HRIS databases to plan and manage the health workforce (See figure 1).

Figure 1: HRIS implementation at the Sub-national level



9 Districts in 2009 (Capacity Project, MoH, NUMAT)

Oyam, Lira, Amolatar, Kabarole, Mukono, Gulu, Pader, Kitgum, Wakiso

10 Districts in 2010 (Capacity Program, MoH, WHO)

Mbarara, Bushenyi, Ibanda, Busia, Tororo, Mbale, Mityana, Mubende, Kyenjojo, Hoima

8 Districts in 2010 (Capacity Program, MoH)

Jinja, Kisoro, Kabale, Luwero, Kumi, Soroti, Ntungamo, Rukungiri

Capacity Building of Data Managers and Users

Training of data managers and users was conducted during the first week of HRIS implementation in each district. Training topics include how to enter data, create screens, add and edit records, and view and generating reports. Training was followed up by technical support supervision to all the trained personnel. Supportive supervision is ongoing through follow up visits and responding to any questions as they arise from time to time from users, to ensure sustainability of the system. A diagrammatic representation of central and district data managers and users is shown in figure 2.

2.1 THE CURRENT HRIS STATUS

Since October 2009, HRIS has been established at the central MoH, selected districts, the 4 Health Professional Councils, and some selected hospitals. Table 2.1 provides details of the districts/HPCs/Hospitals/Ministries where HRIS has been established.

Table 2.1: Districts/HPCs/Hospitals/Ministries where HRIS databases have been established

No	District	Region	Period
1	Busia	Eastern	February 2010
2	Tororo	Eastern	February 2010
3	Mbale	Eastern	February 2010
4	Mbarara	Western	February 2010
5	Bushenyi	Western	February 2010
6	Ibanda	Western	February 2010
7	Kyenjojo	Western	February 2010
8	Hoima	Western	February 2010
9	Mityana	Central	February 2010
10	Mubende	Central	February 2010
11	Jinja	Eastern	June 2010
12	Kisoro	Western	August 2010
13	Kabale	Western	August 2010
14	Luwero	Central	August 2010
15	Ntungamo	Western	September 2010

16	Rukungiri	Western	September 2010
17	Kumi	Eastern	September 2010
18	Soroti	Eastern	September 2010
19	Oyam	Northern	Previous Capacity Project
20	Kitgum	Northern	Previous Capacity Project
21	Pader	Northern	Previous Capacity Project
22	Amolatar	Northern	Previous Capacity Project
23	Lira	Northern	Previous Capacity Project
24	Gulu	Northern	Previous Capacity Project
25	Kabarole	Western	Previous Capacity Project
26	Wakiso	Central	Previous Capacity Project
27	Mukono	Central	Previous Capacity Project
National Level HRIS Sites			
No	Ministry/HPC/Hospital	Location	Period of establishment
1	Ministry of Health	Kampala	Previous Capacity Project
2	Uganda Medical and Dental Practitioners Council	Kampala	Previous Capacity Project
3	Uganda Nurses and Midwives Council	Kampala	Previous Capacity Project
4	Allied Health Professionals Council	Kampala	Previous Capacity Project
5	Pharmacy Council	Kampala	Previous Capacity Project
6	Mulago National Referral Hospital	Kampala	July 2010
7	Butabika National referral Hospital	Kampala	July 2010

Currently, the majority of data bases are being populated and updated.

Monitoring reports indicate that the Uganda Nurses and Midwives Council and Allied Health Professional council have been able to verify of registration and licensure status of their members relying on the HRIS as the source of data.

HRH Information Strengthening efforts by all actors continue. Currently, discussions with the Ministry of Public Service (MOPS) are underway to link the MOH database with the Integrated Personnel and Payroll System (IPPS) at the MOPS. Assessment of the training database at the

MoES was conducted and the follow up discussions with MoES are underway to enhance data sharing between MoH and MoES.

Additional programming has started to link the databases at MOH, MOPS, MOES Professional Councils and districts as appropriate. The national HRIS database was set up and has been put online at <http://hris.health.go.ug>

The process of networking HRIS in 10 districts was initiated. UCP received quotations from three service providers namely Infocom, MTN and Orange to provide a networked HRIS in at least 5 selected districts of the country. However, the MoH is also changing the internet service provider to “Orange” and this delayed the actual connections. Since the process of updating the system to orange has been finalized the next step is to do the connections for the network.

2.2 KEY PLANNING ISSUES

The main challenges facing Human Resource information in Uganda emanate from fragmented massive paper based records accumulated over many years. The users of these records are scattered all over the place in all health facilities both at national and sub-national levels throughout the country. Information collected has not been aggregated and shared meaningfully with the key HRH stakeholders.

The second challenge results from Inadequate structure and staff at the Health Professional Councils and MoH to implement and maintain the computer based databases. There is lack of full time Information Technology (IT) experts to provide ongoing support for data management and sharing. Data is not regularly entered, cleaned, *updated* and shared in form of reports with managers. There is also inadequate capacity for system maintenance and keeping the data bases up to date.

The third main issue of HRIS results from inadequate internal capacity to analyze data and *produce processed information for decision making*.

These and other challenges are detailed out in the sub-sections here below.

2.2.1 DATA MANAGEMENT PROBLEMS

The system of collecting, compiling, analyzing and reporting on HR has hitherto been manual and paper based. The paper files themselves are hard to locate and often misplaced.

Another critical HRIS problem is data loss due to a manual system of recording and storage. Many times, data have a lot of errors resulting in difficulties in the management of payroll. It can take a minimum of 3 to 5 months before newly recruited staff get paid. For example, no one in a group of new employees recruited in November 2007 were added to the payroll until March 2008. Many of these employees had still not been paid their salaries over a year later,. “Five or so have not accessed the payroll more than a year after they’re recruited.” Said one of the senior level managers in one of the districts in Northern Uganda. This problem is largely because the result of missing information misspelled data on the form. This delay in salary payment causes stress to the new employees who may need to borrow money from relatives

and friends to support their families. This is because workers will not stay when they are not being paid..

2.2.2 DATA ACCURACY PROBLEMS

Ensuring data accuracy is challenging for a number of reasons. First, with the previous manual system, updating is difficult so it is not done regularly enough to keep data up-to-dated.

Secondly there is some double-counting of the health workers. Double-counting occurs because there is no efficient way of updating and changing their records in the registry book. There is evidence to the fact that many errors occur with the manual system of recording. What some people do is to report on what they have seen as indicated by the last serial number in the register book. They look at the last number entered, and say, ‘we have for instance 10,000,’ health workers. Since recording is continuous, one would not know which staff left soon after they registered even if the staff informed the relevant authorities. With electronic system this error can be adjusted immediately.

2.2.3 PROBLEMS WITH DATA ACCESSIBILITY

Accessing data manually has proved very difficult given that it is not easy to retrieve hard copy personnel files all the time and in all places when required. For instance, one senior official described the frustration of attempting to access information at one of the health professional councils. It was reported that “Initially the council had a container full of personnel files. So it was quite difficult to make anything out of them.” One of the Registrars also recounted the laborious process of manually accessing data from the paper files, “If you needed something that was contained in the files, we had to go through all the files one by one.” This burden, of course, was greater for some HPC than for others, depending on the number of health workers they were regulating. The Registrar went on to say, “But for some of their colleagues, it was a nightmare trying to retrieve information in one of the personnel files”.

One informant at the MoH explained that it was a problem retrieving information for immediate use such as data needed/required for Parliamentary purposes. Identifying and aggregating basic data at the country-level about health care workers was possible only at a slow rate.

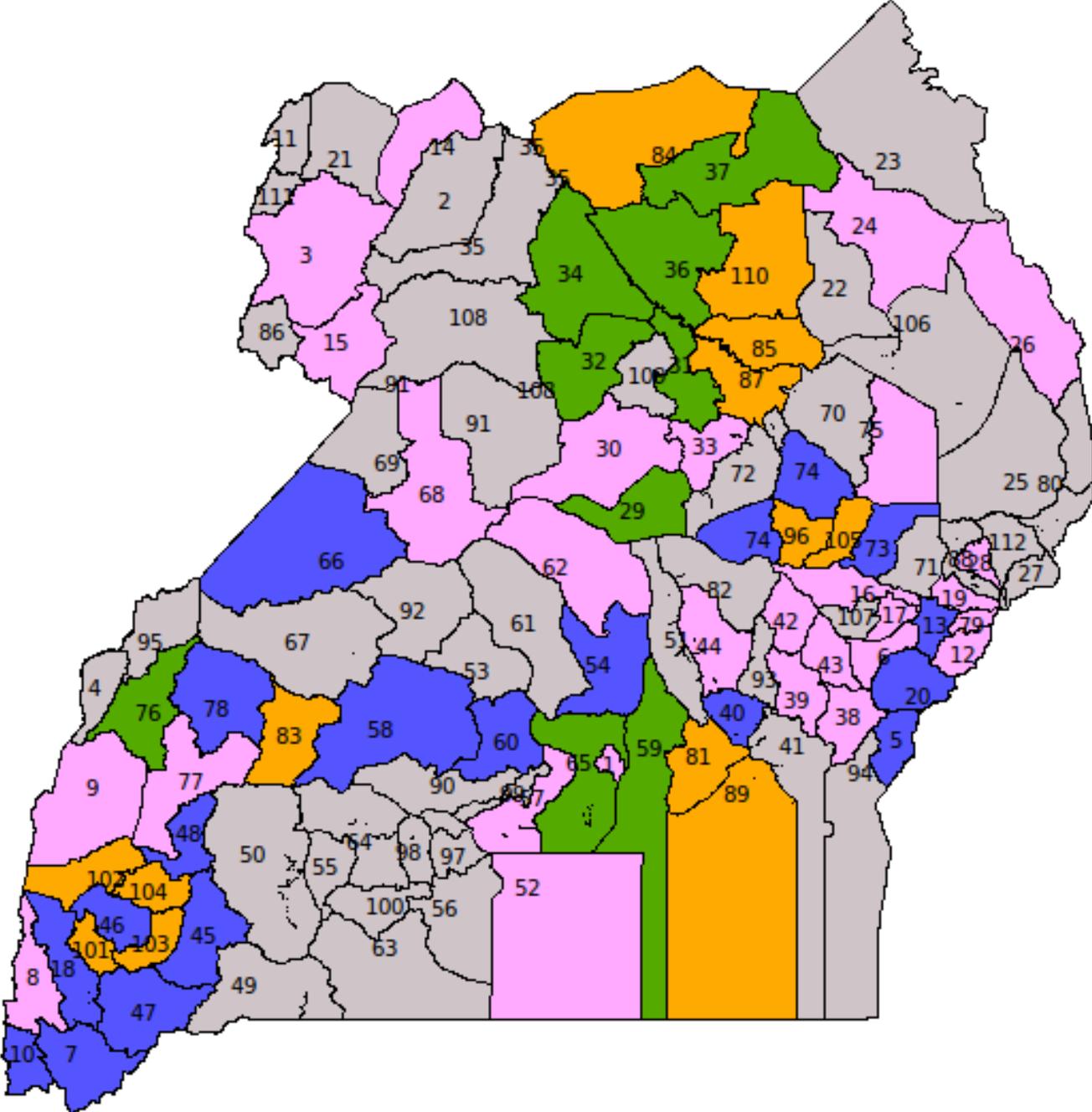
2.2.4 LACK OF DATA LINKAGES

Different development partners, agencies and organizations created sub-systems of HR but these subsystems were not linked to each other in any way. For example, clinical service department has a system of knowing how many doctors are in the regional referral hospitals, the nursing council has another system of calculating the nursing staff in the country, while the Uganda Pharmaceutical Association has a system of knowing how many paharmacists are practicing. Since the sub-systems were not talking to each other, they later became a nightmare aggregate in order to broadly determine what was happening in the country with regard to data generation, analysis and use.

2.2.5 LIMITED KNOWLEDGE OF DATA ANALYSIS

The other problem was related to the limited knowledge of data analysis, storage and retrieval. It is generally believed that the utility of HRH information has to first be appreciated by data managers themselves before other people such as the users can appreciate. There were no deliberately planned efforts to make the data managers (those who manage data) and users know the importance of HRIS information in decision making processes. Only a few people could actually make sense out of the large amounts of data being collected on individual health worker that appears on the pay roll. Most people such the records officers/assistants, personnel officers, and others were just keeping lots of data in individual files, some of which were not adequately processed.

Figure 2: District HRIS Status as at September 30, 2010



-  Break Away Districts
-  Covered 2009
-  Covered 2010
-  No HRIS
-  No_Planned_2011

The District Names and Corresponding Numbers as shown on the above map

1	KAMPALA	29	AMOLATAR	57	MPIGI	85	OTUKE
2	ADJUMANI	30	APAC	58	MUBENDE	86	ZOMBO
3	ARUA	31	LIRA	59	MUKONO	87	ALEBTONG
4	BUNDIBUGYO	32	OYAM	60	MITYANA	88	BULAMBULI
5	BUSIA	33	DOKOLO	61	NAKASEKE	89	BUVUMA
6	BUTALEJA	34	GULU	62	NAKASONGOLA	90	GOMBA
7	KABALE	35	AMURU	63	RAKAI	91	KIRYANDONGO
8	KANUNGU	36	PADER	64	SSEMBABULE	92	KYANKWANZI
9	KASESE	37	KITGUM	65	WAKISO	93	LUUKA
10	KISORO	38	BUGIRI	66	HOIMA	94	NAMAYINGO
11	KOBOKO	39	IGANGA	67	KIBAALE	95	NTOROKO
12	MANAFWA	40	JINJA	68	MASINDI	96	SERERE
13	MBALE	41	MAYUGE	69	BULIISA	97	KALUNGU
14	MOYO	42	KALIRO	70	AMURIA	98	BUKOMANSIMBI
15	NEBBI	43	NAMUTUMBA	71	BUKEDEA	99	BUTAMBALA
16	PALLISA	44	KAMULI	72	KABERAMAIDO	100	LWENGO
17	BUDAKA	45	MBARARA	73	KUMI	101	MITOOMA
18	RUKUNGIRI	46	BUSHENYI	74	SOROTI	102	RUBIRIZI
19	SIRONKO	47	NTUNGAMO	75	KATAKWI	103	SHEEMA
20	TORORO	48	IBANDA	76	KABAROLE	104	BUHWEJU
21	YUMBE	49	ISINGIRO	77	KAMWENGE	105	NGORA
22	ABIM	50	KIRUHURA	78	KYENJOJO	106	NAPAK
23	KAABONG	51	KAYUNGA	79	BUDUDA	107	KIBUKU
24	KOTIDO	52	KALANGALA	80	AMUDAT	108	NWOYA
25	NAKAPIRIPIT	53	KIBOGA	81	BUIKWE	109	KOLE
26	MOROTO	54	LUWERO	82	BUYENDE	110	AGAGO
27	BUKWA	55	LYANTONDE	83	KYEGEGWA	111	MARACHA
28	KAPCHORWA	56	MASAKA	84	LAMWO	112	KWEEN

The map shows that the HRIS has been established in 27 districts of Uganda. However, it has been noted that the districts operate at different levels in terms of availability of HR information and use. Some districts have up to date information while others are still entering data. In some cases data from staff lists in excel have been imported into the system. Tasks that remain include editing and cleaning the entered data. The phases of implementation were as follows:

Figure 3: Health Service Delivery System in Uganda

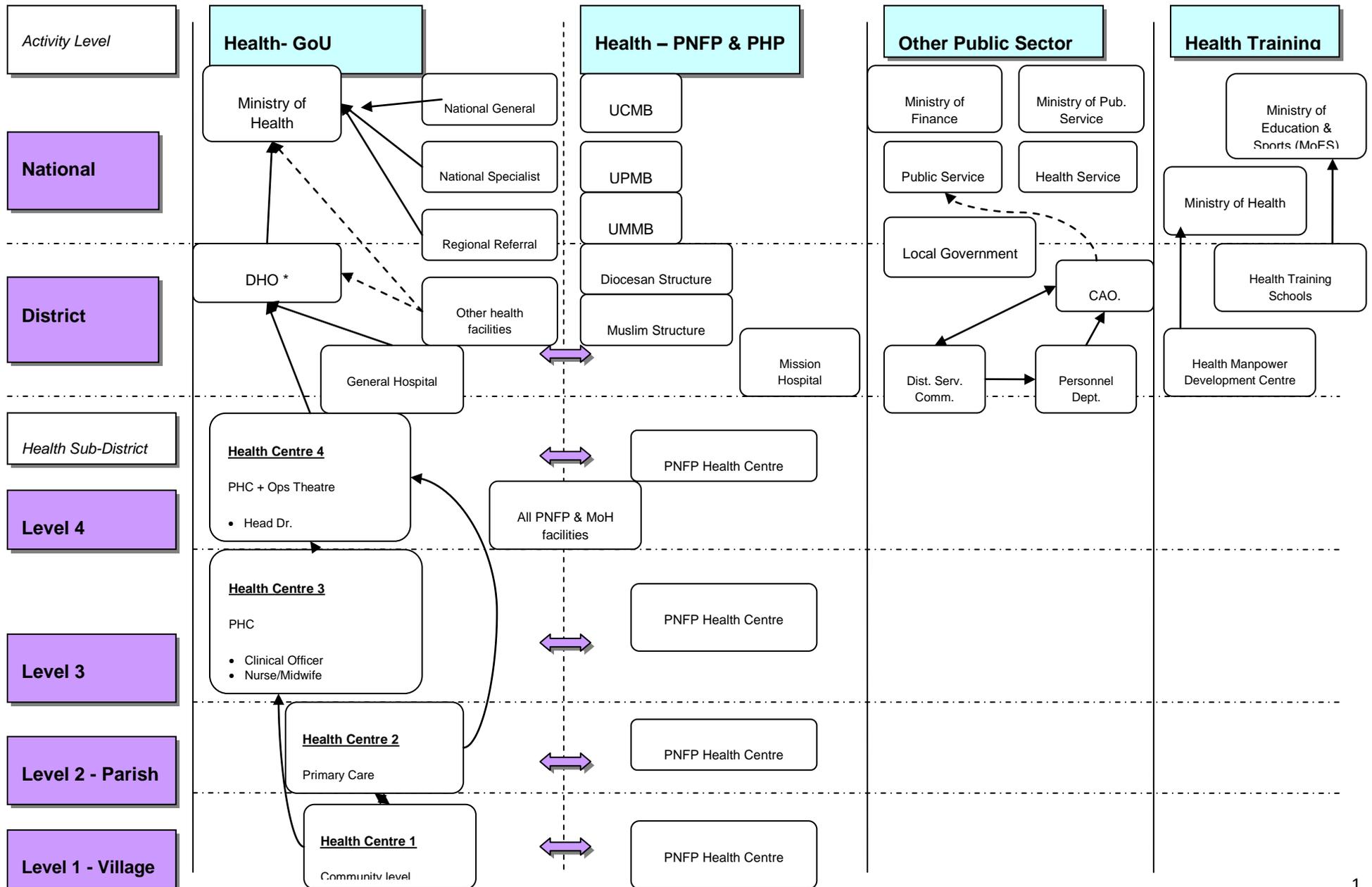
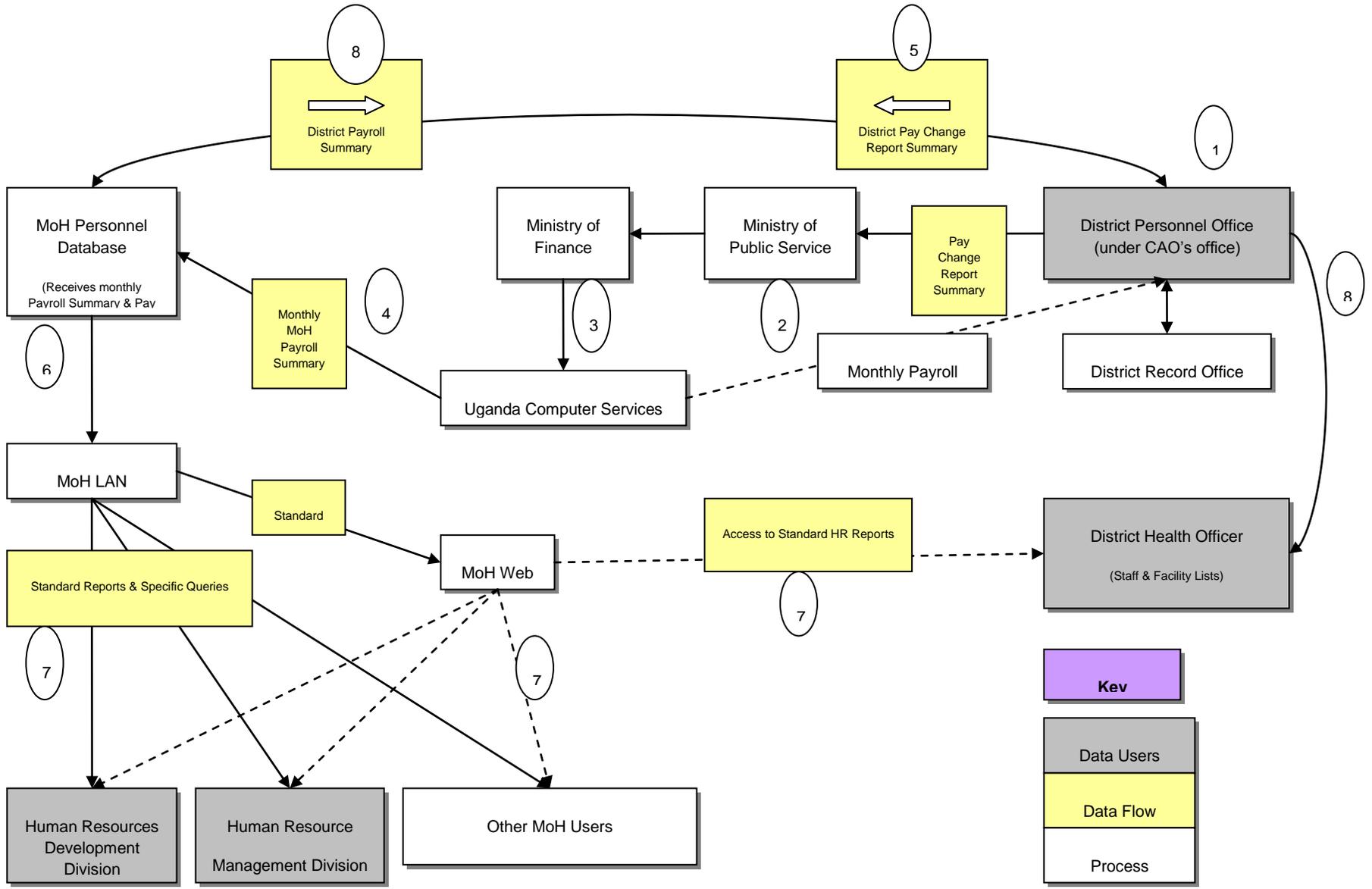


Figure 3 shows the service levels that require HRIS to enhance their decision-making functions. Much of HR processes fit within the established structures of government. The health system fits into these structures for instance, HC II, HC III, HC IV, general hospitals, regional referral hospitals and the national referral hospitals. There is also an established level of governance at both national and sub-national levels.

Under decentralized management of health services, there should be information sharing between the MoH, MoPS, MoES, MoLG and MoFPED at the national level. At the district level there is supposed to be information sharing between various offices such as the office of DHO vis-a-vis the offices of PPO and CAO. HRH actions at the district level mainly take place at the PPOs office under CAOs office. This office should act as a hub for information sharing with other users and stakeholders in local governments. Examples of these actions (processes and sub-processes) are indicated in figure 3 and they include the following:

1. Pay Change Report (PCR) is raised by the District Personnel Officer (CAOs Office). PCRs are forwarded in batches, together with a summary of the PCRs in the batch, on a monthly basis to the Ministry of Public Service (MoPS) for inclusion in the next month's payroll.
2. PCR batches are received and processed by MoPS. Rejected batches are returned to the District CAO for re-submission.
3. Accepted batches of PCRs are processed on payroll.
4. Monthly Ministry of Health (MoH) payroll extract is transferred to MoH Personnel database.
5. Summary of health related PCRs are transferred to the MoH Personnel Database by the District Personnel Office (generated by the District personnel Office PCR Database).
6. Monthly payroll and PCR summary data made available on the Personnel Department database.
7. Data available in various formats and with specified access levels on the Personnel database, which is situated on the MoH Local Area Network (LAN). Standard reports will be available from the server and the MoH website and will be forwarded to users (i.e. District Director Health Services (DDHS), Personnel Office, Human Resources Department (HRD) & other users.
8. Summary reports on health personnel drawn from monthly payroll and in comparison with PCR summary, are sent to the District Personnel Office (Figures 3 and 4).

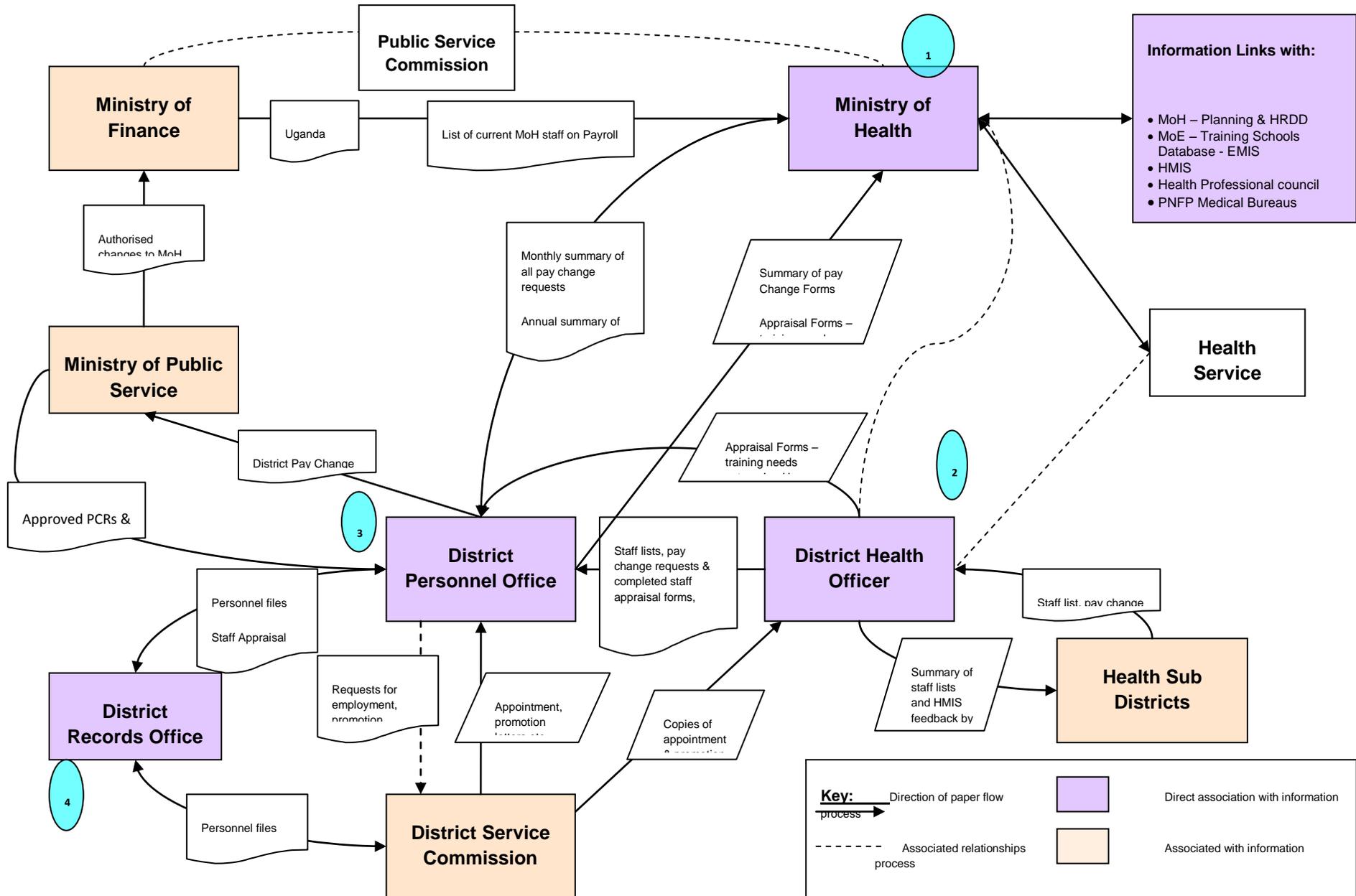
Figure 4: HR Payroll Process and Data Flow



Notes on Payroll Management Process:

1. Pay Change Report (PCR) is raised by the District Personnel Officer (under CAOs Office). Pay Change Reports (PCRs) are forwarded in batches, together with a summary of the PCRs in the batch, on a monthly basis to the Ministry of Public Service (MoPS) for inclusion in the next month's payroll.
2. PCR summary batches are received and processed by MoPS. Rejected batches are returned to the District Personnel Officer (under CAOs Office) for re-submission.
3. Accepted batches of PCRs are processed on payroll.
4. Monthly Ministry of Health (MoH) payroll extract is transferred to MoH Personnel database
5. Summary of health related PCRs are transferred to the MoH Personnel Database by the District Personnel Office (generated by the District personnel Office PCR Database).
6. Monthly payroll and PCR summary data made available on the Personnel Department database.
7. Data available in various formats and with specified access levels on the Personnel database, which is situated on the MoH Local Area Network (LAN). Standard reports will be available from the server and the MoH website and will be forwarded to users (i.e. District Health Officer (DHO), Personnel Office, Human Resources Department (HRD) & other users.
8. Summary reports on health personnel drawn from monthly payroll and in comparison with PCR summary, are sent to the District Personnel Office.

Figure 3: Human Resource Management Processes and Data flow at District & Central Levels



Notes on priority interventions to support HRIS development for Human Resources Management at Central ministries and districts

Aim

To define and clarify the movement of HR information, within the districts and between the districts and the MoH Personnel HR Division specifically in relation to the following HR fields:

- Pay Change Records
- MoH Monthly Payroll Staff Lists
- Health Staff Lists by District & Facility (HMIS Form 103)
- Annual Staff Appraisal summary
- Staff Education Levels (As listed on HMIS Form 103 & Appraisal Forms) summary
- Staff Training Needs (Identified through the Staff Appraisal Forms) summary
- Organised procedures for Personnel information management at District Level Registry through effective records management

Process

Item 1. Ministry of Health – HR Division

Objective:

To increase the capacity and ability within the Division to receive and analyse HR & Personnel data and produce reports on HR issues for dissemination to stakeholders. Specifically, the initial emphasis will be on collecting monthly data relating to MoH staff on the GoU Payroll, collating summary information from the Pay Change Forms originating from the Districts and providing staffing analysis for the DHO, health facilities and other users on a monthly and annual basis.

Hardware, Software & Support Component:

- 2 x Desktop PCs, UPS, Printers & Consumables packs

The provision of computer hardware, software development and provision of internet connectivity support the ability of the Division to receive data, collate information and produce reports. Computer hardware and consumables allow for data entry, data processing capability, sharing of information electronically and in the production and printing of reports.

Software development (Database) to:

- Receive through electronic transfer MoH Payroll Data from MoF Payroll Dept. on a monthly basis
- Receive through electronic transfer monthly Pay Change Report data from the District Personnel Office via the DHO
- Compare the data and produce monthly staff listings for each health facility
- Produce monthly staff lists, by District & Facility
- Develop field for entry of training needs as identified on the annual staff appraisal forms
- Develop reports summarising training needs and education levels of all health staff

Provision of a pack of consumables to help facilitate the production of reports, sharing of information etc...

(Staff Audit report, Bi-annual report, data transfer devices, printing support)

Item 2. District Health Office

Objective:

To enable the DHO office to share and transfer information with the MoH HR Department, the District Personnel Department at the CAOs office, utilise and analyse information collected from the HMIS and other sources and produce management reports for planning in the district and accurate and up to date staff lists for health facilities in the district.

Hardware, Software & Support Component:

- 1 x Desktop PC, UPS, Printer & Consumables pack

The provision of computer hardware, software development and provision of internet connectivity support the ability of the DHO to receive data, collate information and produce reports. Computer hardware and consumables allow for data entry, data processing capability, sharing of information electronically and in the production and printing of reports.

DHO database to:

- Receive through electronic transfer from the District Personnel Dept. a monthly summary of district staff by facility, drawn from the health payroll
- Extract from the HMIS the facility staff lists provided on HMIS Form 103
- Include extra data sets (to be clarified) to enhance the range of information available in addition to Form 103, specifically in relation to education levels and staff training needs
- Compare the data and produce monthly staff listings for each health facility
- Produce monthly staff lists, for the District & by Facility

Provision of a pack of consumables to help facilitate the production of reports, sharing of information etc...

Item 3. District Personnel Office (under CAO's office)

Objective:

To enable the District Personnel Office to collate and record information relating to the submission and processing of pay Change Forms, MoH Staff Appraisal Forms – specifically the staff education and training needs information - and the management of District Personnel files. To develop the capacity to share and transfer information with the DHO and other users.

Hardware, Software & Support Component:

- 1 x Desktop PC, UPS, Printer & Consumables pack

The provision of computer hardware, and software development, support the ability of the District Personnel Department to record information and produce reports.

Computer hardware and consumables allow for data entry, data processing capability, sharing of information in the production and printing of reports.

PPO Database to:

- Receive monthly summary of the Payroll from the HR Dept. at the MoH
- Receive and collate all data relating to Pay Change Form requests generated for health personnel in the district on a monthly basis. This to be summarised for Personnel dept use and for transfer by electronic media (RW-CD or USB) to the DHO.
- Extract from the annual staff appraisal forms the stated education levels and identified training needs for health staff and compile into a summary for transfer to the DHO

Provision of a pack of consumables to help facilitate the production of reports, sharing of information etc...

Item 4. District Records Office (under CAO's office)

Objective:

To establish standard records management procedures within the District Records Office – to develop standard personnel information formats, increase accuracy, security and control of personnel file records.

Hardware, Software & Support Component:

- 1 x Desktop PC, UPS, Printer & Consumables pack

Provision of computer hardware and some limited software (protected formats) development to ensure the records management is standardised and control is maintained on personnel information and the tracking and control of files within the district management system.

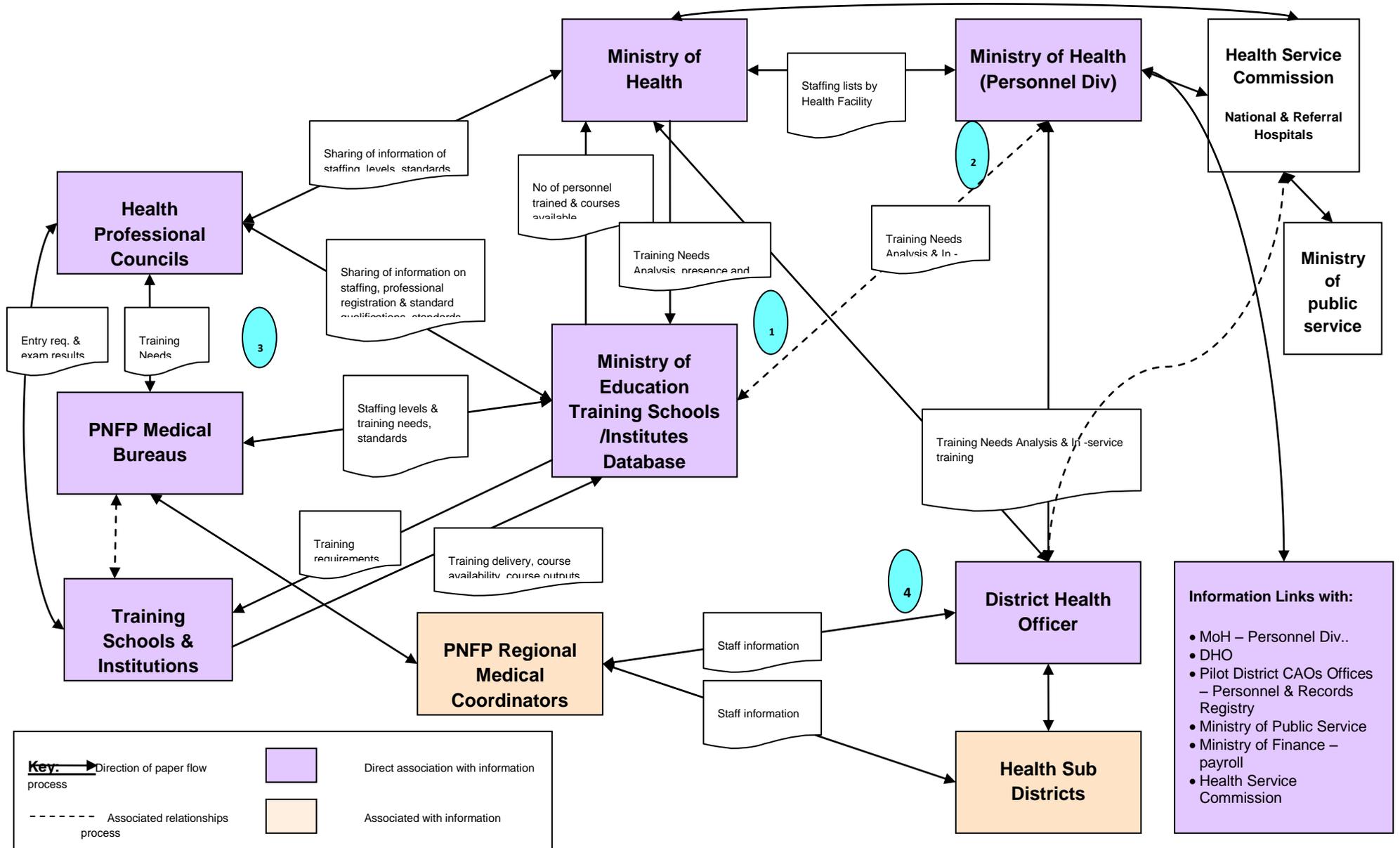
This allows for the printing of file control forms, logging of basic personnel data and tracking the issue and flow of personnel files.

Excel Spreadsheet or simple Database to:

- Replicate front-piece bio-data forms for all files and facility to record and hold that data in a standard format
- Develop file routing/flow chart to control and manage files issued from registry

Provision of a pack of consumables to help facilitate the production of forms, bio-data forms and control records etc.

Figure 4: Human Resource Development and Data Flow at District and Central



Notes on priority interventions to support HRIS development for HRD at central ministries and districts

Aim: To show linkages relating to human resource activities and training for health services.

The relationships on this sheet link into the Ministry of Health, HR Department. The relationships shown relate to the use and transfer of human resources information and include organisation like the medical bureaus and the health professions councils. Direct support from the DHRH project to these organisations is limited to the provision of computers to assist the PNFP, Medical Councils and professional Councils with the collation and sharing of information relating to staffing, coding of staff and the professional registration of health staff.

Process:

1. Ministry of Education and Sports & EMIS – Training Schools Database

The database holds information on the training activities of the health training schools registered with the Ministry of Education and forms an integral part of the information process relating to the standard of training for the health sector, management of resources for training and the sharing of this information with planners and managers.

2. Ministry of Health – HR Management Division

The Personnel Department (for the purpose of this diagram) provides the linkage to the district activities as outlined in figure 3.

3. Ministry of Health – HR Development Division

The HRD Division database provides information on training institutions – courses offered, entry requirements, courses duration, enrollment capacity, annual outputs, staffing situation; Health work force situation, staffing standards, population per health worker ratio by cadre, projected staffing requirements by cadre, staffing situation by level of care by cadre, HR development plans and projections, training experiences of individual health workers and in-service training needs; inventory of training providers and training opportunities; scholarships, health workforce inflows and outflows per year; cost of training by course, budgets and financing mechanisms.

1 2 x Desktop PC, 2 UPS, Printer

4. Health Professional Associations, Councils, Bureaus, Commissions, etc

To assist in the collation and availability of information relating to the activities of the health professional councils, associates and the PNFP sector – specifically the medical bureaus.

- 1 x Desktop PC, UPS, Printer provided for each of the following:

1. Uganda Catholic Medical Bureau
2. Uganda Muslim Medical Bureau
3. Uganda Protestant Medical Bureau
4. Allied Health Professional Council
5. Nurses' & Midwives Council
6. Medical & Dental Practitioners Council
7. Pharmacists Council
8. Private Not for Profit Partnership
9. Health Service Commission
10. Strategic Planning Task Force, MoH

5. District Health Offices and Facilities: As detailed in the notes attached to figure 3.

Figure 3: Human Resource Payroll Process and Data Flow

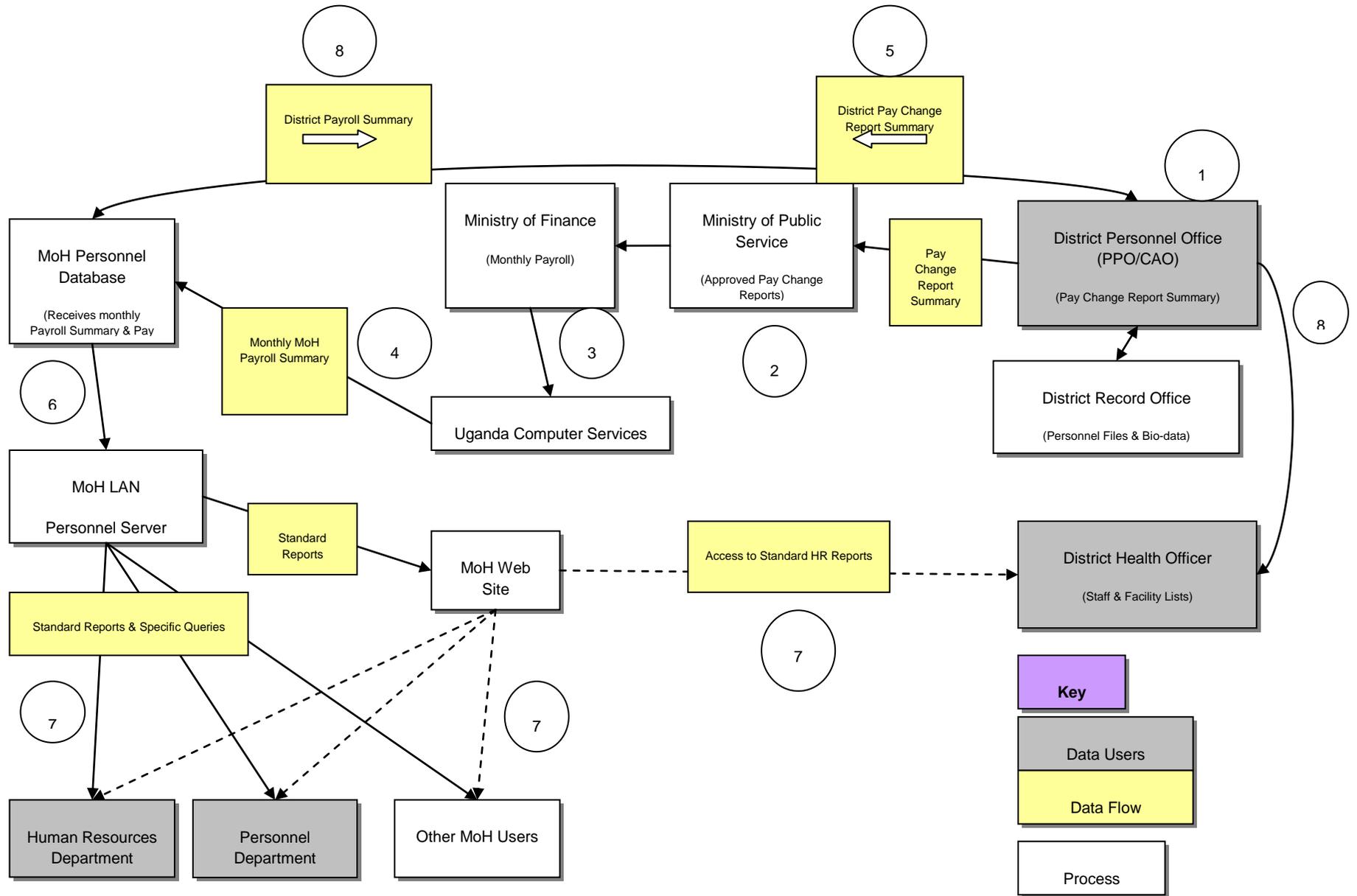


Figure 3 shows the payroll process and data flow. In the context of the HRIS strengthening plan, it is proposed that these processes will be made visible both at the national and sub-national level. The plan will enhance this visibility through sensitization seminars, purposeful training of data managers and users and also formalization of correspondences where it has been weak or not existing. Some of these actions have been highlighted in the figure

National and Sub-national HRH Data systems

The aim of this section is to define and clarify what the plan intends to achieve with regard to the movement of HR information at the MoH Personnel Division, HRD division and other ministries (MoH, MoES, MoPS) and the one hand, and within the districts and between the district on the other, specifically in relation to the following HR fields:

- Pay Change Records (Reports)
- MoH Monthly Payroll Staff Lists and updates
- MoH Staff Lists by District & Facility (HMIS Form 103)
- Annual Staff Appraisal Forms (Performance Management System)
- Staff Education Levels (As listed on HMIS Form 103 & Appraisal Forms)
- Staff Training Needs (Identified through the Staff Appraisal Forms)
- Organisation and re-instating the correct procedures for Personnel Files at District Level Registry through effective records management

There will be a deliberate assessment of HRIS needs at the national level particularly MoH, including equipment needs, and establishment of links to various departments and divisions of the MoH. The useful links will be established for instance between databases of MoH and Integrated Personnel Pay Management System (IPPMS) of MoPS on one hand, and MoH and MoES on the other. Mulago and Butabika hospitals will be linked to the MoH data bases so that a comprehensive picture of HRH in the country can be seen from the information available in the data bases at the central level (figure 4).

3. POLICY FOR IHRIS MANAGE ROLLOUT

Uganda is currently implementing iHRIS Manage system in 32 districts and two national referral hospitals Mulago and Butabika. The MoH together with the UCP and other health development partners will eventually roll the system out to all of the 112 districts and religious medical bureaus. Expanding an information system requires careful planning and preparation and there are many details to consider. This HRIS strengthening plan details the process which will be followed, the requirements at different levels, the roles of different stakeholders, and how the process can be replicated.

3.1 PERMISSION TO EDIT DATA

The iHRIS Manage data model for district deployment designates that data will be edited at the district offices or at regional offices for religious medical bureaus. Data will not be edited at

national office, but the national office using Ministry of Public Services lists will provide the staffing norms.

Data edited at the districts offices will be aggregated at the central office and will be read only at the central office. The reason for choosing to edit data at the district is that the districts maintain records. For example, if a district manager wants to add a new employee to the list, he or she can do so directly instead of having to wait for the central office.

3.2 STANDARDIZING LISTS

A list of Cadres, Job classifications, Jobs, Positions, Position types, and staffing norms will be created centrally and preloaded in all the iHRIS manage system in the districts to ensure consistency of database lists and standardization. This standardization helps in data integration in the national database, as it provides dropdown menus across the districts offices, which are crucial for aggregating data and producing meaningful reports.

Standardization of lists will be done by cost centre. Enforcing standardization of database lists is also important for job codes and job classifications. For example, by editing the list of jobs established at the district health office, say in Pader district the Medical Officer will be at the same level as a Medical Officer in Butaleja district and other districts. Without standardization of cadres you may find that position titles are similar across districts. In For example, there may be no Medical Officer in the Pader's cadre list at all; rather, this position may be known as a "Doctor." The software is unable to determine that the postion "Doctor" in Pader district is equivalent to "Medical Officer" in Butaeja district, which would cause problems when running a report on how many 'Medical Officers' are employed nationally and in each district.

The responsibility to edit HR information will remain with individual districts. With Cadres, Job classifications, Jobs, Positions, and staffing norms lists inside; personnel data (names, positions held, demographic information, contacts, educational history, departments, identification types, etc) will be edited at the district offices (at the Principal Personnel Office). This is because the district offices will have accurate data as they are involved in the day to day management of the personnel. Also, any lists that are not about comparing data at the central level should be safely edited at the district level.

LISTS EDITED AT CENTRAL LEVEL

At the central MoH level, the lists that shall be edited include the following: Country, Region, District, Currency, Facility Type, Registration Councils, Cadres, Job Classifications, Salary Scales, Job Groups, Position Types, Confirmation Types, Education/Level Type, Marital Status, Reasons for Departure, Establishment Type, Establishment Period, Establishments, Department, Salary Sources, Qualification, Language, Competency Type, Competency, Identification Type, Benefit/Allowance Type, Accident Type, Disciplinary Action Type, and Category of a Training Course

LISTS EDITED AT DISTRICT LEVEL

At the district level, the system will allow the following lists to be edited. Sub-County, Office/Facility Name, Positions by Facility, Positions by Status, Competency, Competency Evaluation, Identification Type, Training Courses, Scheduled Training Courses, Status of a

Training Course, Requestors of a Training Course, Evaluation of a Training Course, Training Institution, Training Funder, Continuing Education Course, and Personnel data (names, positions held, demographic information, contacts, educational history, job location, identifications, etc).

3.3 DECENTRALIZED IHRIS DATA POLICY

This section answers a decentralized implementation of iHRIS Manage in Uganda. We are using two tier implementation of the system namely, the national and district.

Our decentralized data module is "vertical" in that it allows data to flow from the district to the national level. It also allows that the data flow in the reverse direction. The system does not allow data to flow "horizontally." In other words, we do not have a mechanism for the data on a person in district A to be given to district B.

- There is need to develop a small hand book which can be used by HRIS managers which contains details on dos and don'ts and the good practices for HRIS usage.
- The HRIS system should be customized centrally and populated with the suggested details before taking it to all districts.
- HRIS managers in districts and at central level should be given all position codes from ministry of public service for use in their system. For new rollout, these should be preloaded into the system

4. HRIS SETUP IN DISTRICTS

4.1 EQUIPMENT

The following basic equipment should be provided to each district.

- Computer set (CPU, Monitor, UPS)
- Flash disk

4.2 HRIS INITIAL SET-UP

The following are the issues to put into consideration during the initial setup of HRIs in any district

- First one needs to know that there is what is called the " excel data import script". Most offices in Uganda use excel for processing data of any type. The excel data import script takes the stored staff list and imports that data into the HRIS system.
- For the districts with staff lists in excel format, the lists should directly be imported into the system. This will quicken the update of the HRIS system, as districts can start away to use the system for report generation and day to day running.
- The excel data import script should be used at once during the initial setup of the database as when used with existing populated databases it can interfere with the existing records and sometimes erase the existing and create duplicates.

4.3 TRAINING

Trainings in the district target the Principal Personnel Officers (PPO), Personnel Officers (PO), District Health Officers (DHO), Biostatisticians, HMIS Focal Persons, and Records Officers. The training is first conducted using the practical approach of on-job training where participants are taken through exercises of setting up the system, entering data, data editing, analysis of data, recovery of data and generation of reports. After one to three months, participants are trained in regional workshops where they share ideas and agree on the reporting and maintenance approach to be used.

4.4 HRIS DATA SHARING BETWEEN DIFFERENT DISTRICT OFFICES

In each district one computer running Linux Ubuntu is installed with iHRIS manage and placed in the office of the Principal Personnel Officer. This computer serves as server and other computers links to it. Due to lack of proper LAN in districts, the direct linkage most of time is difficult to ensure so two databases will be installed in the DHO and CAO's office. On a monthly basis the database in PPO's office will be duplicated and used to update the DHO and CAO databases, so thaty they can generate updated reports. Only the PPO's office can create and update records.

3. THE FUTURE DIRECTION

5.1 VISION, MISSION, AND GOALS OF HRIS STRENGTHENING PLAN

Vision

A country with HRH policies and plans based on accurate and readily available evidence

Mission

To strengthen capacity of HRH policy and planning at national and sub-national levels by establishing a computerized HRH information system at national and sub-national levels and training users of HRH information in public and private sub-sectors, and linking data systems online with data bases at the MOH headquarters, HPC, and PNFP and other relevant ministries to ensure easy and fast HRH information flow, and timely updating of the HRH data at all levels.

Goal

To establish, maintain and use a strong knowledge and information base for evidence based HRH functions and decisions.

Strategic Objectives

The strategic objectives of HRIS strengthening plan are to:

- Avail timely, complete and reliable HRH information for policy, planning and management decisions;
- Establish capacity to collect, store, analyze, share and update HRH data sustainably;
- Strengthen and institutionalize data-driven HRH management process

The MOH working with development partners plans to establish computerized HRH information system in all the districts in the country, and to link them online with the MOH headquarters to ensure easy and fast HRH information flow, and timely updating of the HRH data at all levels. All HRH information will be integrated at the Resource Centre of the MOH to ensure that complete information on HRH is available for effective planning and management. The main strategic actions include identification and harmonization of all HRH related systems; creating facilities for exchanging information; developing and maintaining capacities for managing and using HRH knowledge; and using generated information for monitoring and evaluation of HRH activities.

5.2 Key Outputs

The following are the key outputs under each strategic objective of HRIS strengthening plan.

- 3.2.1 Avail timely, complete and reliable HRH information for policy, planning and management decisions;

Outputs

- National and district data systems for evidence generation developed
- HRIS sub-systems established and maintained
- Mechanisms for informational sharing including HRIS bi-annual reports developed and maintained;

5.2.2 Build capacity to collect, store, analyze, share and update HRH data sustainably;

Outputs

- HRIS at the MoH that will track CPD of health workers established
- Structure and staffing at the MoH and HPCs streamlined to implement and maintain computer based databases

5.2.3 Strengthen and institutionalize data-driven HRH management processes

Outputs

- Maintenance of hardware integrated into the medical equipment maintenance system of the MoH.
- Internal capacity to analyze data and produce processed information for decision making strengthened;
- Mechanisms for continuous cleaning and updating of data developed and maintained to achieve full coverage

6. STRATEGIC INTERVENTIONS FOR EACH OBJECTIVE

Interventions under each output will focus on consolidating and scaling up of the HRIS strengthening initiated by the MoH and her development partners over the years. The idea to maintain good generation of HRH data for the following:

SOB 1: To avail timely, complete and reliable HRH information for policy, planning and management decisions;

Output: 6.1.1 National and district data systems for evidence generation developed

The human resource information system (HRIS) was rolled out to provide reliable information for effective HR planning and management. The plan for the first year was to cover 10 new districts but in collaboration with WHO a total of 12 new districts have already been covered, while work is going on in other 9, and a total of 21 districts had been planned to be covered by the end of November 2010, making a cumulative total of 30 districts with functional computerized HRH databases. Since then, HRIS has been established in 32 districts and 2 national referral hospitals as at January 2011.

Some of these districts have infrastructure constraints hindering full implementation of the electronic system such as poor electricity supply, hardware availability, and unstable Internet connectivity. District data entry will reduce the flow of forms to the Ministry of Health and its data-entry burden. Some district staff are slow at inputting data due to lack of basic computer knowledge and insufficient typing and keying skills. Too few central level and district staff have been trained to accommodate sickness and other absences, which affects the continuity of data entry and sustainability of the system. The Ministry of Health will work with UCP and other partners together with the district leadership to ensure that training of data managers and users is done to strengthen the system. People to be trained include those who gather and process data and generate reports on HR status. These include district biostatisticians, records officers, and HMIS assistants. Others to be trained include the information users at the district level including the Chief Administrative Officers, DHOs, PPOs and Town clerks. This will further be consolidated by incorporating a module on HRIS in the leadership and management course.

Output: 6.1.2 HRIS sub-systems established and maintained

The Ministry of Health will collaborate with the key stakeholders such as UCP, WHO and WB to establish data systems for instance at the MoH, the systems will include HRD, RC, and HRM. This will entail undertaking a needs assessment of the requirements necessary to strengthen health systems performance at the central MoH as a whole. This assessment will identify both equipment and staff requirements. The HRIS strengthening program will strengthen mechanisms for regular information exchange including establishing LAN within the central ministries (MoH, MoPS, MoES) and within the districts, connecting district data bases to the central database, and at the same time connecting Health Professional Council databases to the MoH and to the district data bases, linking databases at the MoH to MoPS and MES on line, and regular dissemination of selected HRH reports. Appropriate access passwords will be developed to ensure that confidentiality is upheld as appropriate.

The MoH will continue working with HDPs to consolidate and strengthen the national and sub-national databases to enable stakeholders to access relevant data for policy formulation and implementation. The system is currently established at the 4 Health Professional Councils, the MOH headquarters and in 30 districts. Efforts will put to ensure that these 30 districts have functional HRIS that meets the criteria of functionality definition. HRIS monitoring tool will be developed and used for monitoring functionality of the system in all central sub-systems and the districts. The tool will monitor existence of sound databases that are able to provide timely, accurate and complete data for decision making. The tool will be administered by Ministry of Health staff at different HRIS sites. Currently there is no direct link between the central level institutions and the district data bases which makes information sharing challenging. The MoH and UCP will provide links between databases of MoH and Integrated Personnel Management Systems of MOPS on the one hand, and MOH and MOES on the other. The MoH and UCP will establish computerized databases in 29 new districts while providing maintenance support to the 30 districts. The establishment of databases will entail procuring and installing hardware and software, populating the databases and training the users (Personnel Officers, Biostatisticians, records assistants, District Health Officers, and Assistant Chief Administrative Officers in charge of health).

Deliberate efforts will put on the maintenance of the established data sub-systems both at the ministry of health and districts. The data entered into the system will be updated routinely while adding new entries to update information. The MoH will work with partners to periodically service the computers and upgrading the system to an appropriate level. The servers at the MoH and HPCs will be upgraded continuously and some of them changed to appropriately handle large data sets.

SOB 2: To establish capacity to collect, store, analyze, share and update HRH data sustainably;

Output: 6.2.1 An-up-to date HRIS at the MoH that will track continuing professional development of health workers established

At the central level a partnership with MOPS was initiated to link the MOH HRH database to the Integrated Personnel and Pay System (IPPS) now under development by the MOPS to improve payroll data. The information generated from the HRIS was an essential input into the Annual Health Sector Review Report 2008/09, new National Health Policy and the Health Sector Strategic Plan III (HSSP III). The databases at the MOH and the 4 Professional Councils were maintained and data analysis done to feed into HRH Bi-annual Reports. Demand for HRH information has been increased and there is absolute necessity for rapid scale up HRIS in districts. The update of the health staff audit is continuously done and data analysis and report writing is done twice a year. Data analysis for the second part of the year demonstrated a general increase in the proportion of approved positions filled from 53% in FY 2008/09 to 56% in FY 2009/2010.

The MoH together with UCP will continue supporting the Human Resources Working Group (HRTWG) to track information on continuing professional development of health staff. Some of this information will feed into HRH Observatory and HRH Bi-annual reports. Writing of the Bi-annual reports will be integrated into the work of HRD division at the MoH for sustainability.

A structure which will continue developing and modifying the work of HRIS including information and use will be created at the central ministry of health. The divisions of HRM,

HRD and RC will be engaged into a working relationship to ensure sustainability of HRIS. A secretariat will be created out of these MoH divisions to harmonize the input of all the health development partners including UCP, WB, WHO and DANIDA that have interest in the HRIS strengthening.

Output: 6.2.2 Structure and staffing at the MoH and HPCs streamlined to implement and maintain computer based databases

The ministry of health will streamline the structure at the MoH including organizing divisions of HRD, HRM and RC to create necessary positions for IT specialists who will continue assisting the sector in strengthening health system performance. The IT specialists will have permanent posts so that they are motivated to work and are also within reach whenever they are required. The IT positions will be filled by qualified personnel attracted and recruited for this purpose.

A help desk for strengthening the communication strategy will be established at the Ministry of Health HRM division to answer any operational queries resulting from use of HRIS both at the national and sub-national levels. A number of IT personnel will be appointed to support the functioning of the help desk.

In order to create national capacity for sustaining the HRIS, MoH, will collaborate with the Faculty of Computing and IT at Makerere University to popularize Open Source Technology and provide technical assistance needed to introduce training in Open Source Technology in Uganda.

SOB 3: To strengthen and institutionalize data-driven HRH management processes

Output: 6.3.1 Maintenance of hardware integrated into the medical equipment maintenance system of the MoH and train data managers

The ministry of health together with UCP will work through the engineering department to integrate IT maintenance into medical equipment maintenance system of the MoH. A training program for 6-10 MoH staff and IT interns will be developed. Training of these people will be undertaken in the maintenance of IT equipment. The effect of this is twofold. Firstly, it will help in generation of a body of experts on IT maintenance. Secondly, it will have encourage sustainability in equipment repair and maintenance at the MoH, thereby strengthening the HRIS

The number of IT interns and data entry staff in the health professional councils, the HRM Division, and the two IT specialists is not sufficient to continue efficient data entry and system maintenance in the event of staff losses due to long-term sickness, staff leaving and annual leave. The MoH and her development partners will continue to support HRM and HRD divisions of MoH which require a permanent HRIS support position. In order for the iHRIS Manage and iHRIS Qualify systems to be fully operational and meet their full potential, additional equipment, such as computers and printers, will be procured. The MoH will develop 6-10 people to strengthen the capability of the health sector to resolve computer virus problems. The MoH HRD division will also put aside a budget for developing these skills in-house. The MoH with UCP will work through HRM to establish a help desk at the MoH to resolve most of the operational problems and will utilize interns to help data

management in the health professional councils and other health sub-systems. We will also work with the office of the Permanent secretary MoH to identify key equipment needs and where applicable purchase new equipment such as computers and printers to strengthen the system at the MoH.

Output: 6.3.2. Internal capacity to analyze data and produce processed information for decision making strengthened;

The ministry of health will continue working with the HDPs in building the internal capacity to analyze data and produce processed information for decision making. The health sector will continue using information collected from various researches done on HRH, and updating audit data and also writing a bi-annual report. The consolidated HRH bi-annual report will continue being circulated to key HRH stakeholders including central ministries, HDPs, districts and community organizations for decision making and use.

7. PROGRAM FIVE YEAR LOGIC MATRIX

SOB 1: AVAIL TIMELY, COMPLETE AND RELIABLE HRH INFORMATION FOR POLICY, PLANNING AND MANAGEMENT DECISIONS

Output 1.1. National and district data systems for evidence generation developed

Output Indicator: 1.1.1 Existence of HRH databases that enable stakeholders to access relevant data for policy and planning disaggregated by level

Act. No	Activity	Activity Indicator	5-Year Targets	FY 2010/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15
1.1	Establish HRIS data bases in Public and PNFP sub-sector National Institutions.	Number of departments, divisions and programs with functional data system (both Public and PNFP)	(National and RRH, HPC, MoH, Health service, NRH, Religious medical bureaus) MoES, MoPS	x	x	x	x	x
1.2	Establish HRIS in 112 districts and 80 general hospitals	Number of districts with functional data systems Number of general hospitals with functional data systems	112 districts 80 hospitals	20	40 40	40 20	12 10	 10
1.3	Establish mechanisms for reporting Human Resource changes in the sector.	Number of reports received by the MoH annually	One report per quarter	x	x	x	x	x

SOB 2: BUILD CAPACITY TO COLLECT, STORE, ANALYZE, SHARE AND UPDATE HRH DATA SUSTAINABLY

Output 2.1: Structure and Staffing at the MoH, districts and HPC streamlined to implement and maintain computer databases

Output Indicator: 2.1.1 Number of approved IT positions in the MoH structure filled

Act. No	Activity	Activity Indicator	5-Year Targets	FY 2010/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15
2.1	Advocate for approval of staffing structure to accommodate engineering technicians at the MoH		HRM, HRD, HPC, QA, ADm 4	x	x	x		
2.3	Recruit engineering technicians to operate HRIS	Number of staff recruited	30 Staff	x	x			
2.4	Train engineering staff to maintain the databases at the MOH and the 4 Health Professional Councils in tracking CPD.	Number of people trained	30 IT Staff		x	x		
2.5	Work with HRM, HRD and RC to sustain HRIS in the health sector.	Number of divisions participating in close collaboration to strengthen HRIS	3 Divisions	x	x	x	x	x
2.6	Establish mechanisms for central level and district level data flow to enhance pay change report processes		MoH personnel data base, MoH LAN personnel server, MoF, MoPS, Districts	x	x	x		

SOB 3: TO STRENGTHEN AND INSTITUTIONALIZE DATA-DRIVEN HRH MANAGEMENT PROCESSES

Output 3.1: Internal Capacity Strengthened to analyze data and produce processed information for decision making

Output Indicator: 3.1.1 Number of HRH plans/documents/reports informed by HRIS produced disaggregated by type, periodicity and level.

Act. No	Activity	Activity Indicator	5-Year Targets	FY 2010/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15
3.1	Assess the capacity of regional workshops to adequately address HRIS needs.	Number of regional workshops with capacity	4 Regional workshops	x				
3.2	Support Regional workshops to maintain HRIS equipment and data bases	Number of regional workshops	4 regional workshops	x	x	x		
3.3	Train 10 workshop technicians to keep HRIS maintained all the time.	Number of technicians trained	10 technicians		x	x	x	x
3.4	Train national and district level data managers and users in data analysis and use.	Number of people trained		x	x	x	x	x
3.5	Update all data bases periodically as and when changes occur preferably monthly.	Number of data bases updated periodically for the most recent changes preferably one month.	MoH, MoES, MoPS, HPC, Butabika and Muago hospitals; and Districts	x	x	x	x	x

3.6	Train managers and users of information (MoH staff, District staff including CAO, PPO, Secretary DSC, in accessing information for decision making in each of the districts	Number of Senior Officers trained in information for decision making	460 Senior district officials in 112 districts of the country	80	80	100	100	100
3.7	Conduct routine data quality assessment at different HRH sites	Number of sites assessed for data quality.		x	x	x	x	x
3.8	Continuously support HRH users	Number of users able to log into HRIS, enter data into all the required fields and able to generate reports.		x	x	x	x	x



COSTING OF THE HRIS STRENGTHENING PLAN

INDICATIVE FIGURES FOR FIVE YEARS OF HRIS IMPLEMENTATION

No	ITEM	2010/11	2011/12	2012/13	2013/14	2014/16
1.1	Establish HRIS data bases in Public and PNFP sub-sector National Institutions.	70,000,000	77,000,000	-	-	-
	Establish HRIS in 112 districts and 80 general hospitals	1,400,000,000	1,540,000,000	-	-	-
	Establish mechanisms for reporting Human Resource changes in the sector.	60,000,000	66,000,000	72,600,000	72,600,000	72,600,000
	Advocate for approval of staffing structure to accommodate engineering technicians at the MoH	54,000,000	59,400,000	65,340,000	-	-
	Recruit and engage engineering technicians to operate HRIS	-	72,000,000	79,200,000	79,200,000	79,200,000
	Train engineering staff to maintain the databases at the MOH and the 4 Health Professional Councils in tracking CPD.	-	22,500,000	24,750,000	-	-
	Work with HRM, HRD and RC to develop tools for sustaining HRIS in the health sector.	42,000,000	46,200,000	50,820,000	24,000,000	24,000,000
	Establish mechanisms for central level and district level data flow to enhance pay change report processes	28,000,000	30,800,000	33,880,000	24,000,000	24,000,000
	Assess the capacity of regional workshops to adequately address HRIS needs.	10,000,000	11,000,000	-	-	-
	Support Regional workshops to maintain HRIS equipment and data bases	56,000,000	61,600,000	67,760,000	67,760,000	67,760,000
	Train 10 workshop technicians to keep HRIS maintained all the time.	32,000,000	35,200,000	38,720,000	-	-
	Train national and district level data managers and users in data analysis and use.	540,000,000	594,000,000	653,400,000	75,000,000	75,000,000
	Update all data bases periodically as and when changes happen preferably a month after changes have occurred.	60,000,000	66,000,000	72,600,000	10,000,000	10,000,000
	Train managers and users of information (MoH staff, District staff including CAO, PPO, Secretary DSC, in accessing information for decision making in each of the districts	540,000,000	594,000,000	653,400,000	75,000,000	75,000,000
	Total cost in Ug Shillings	2,892,000,000	3,275,700,000	1,812,470,000	348,360,000	427,560,000
	Cost in US \$	\$1,314,545.5	1,488,954.5	823,850.0	158,345.5	194,345.5

STAFF LISTING



Date: District Name: (Code:) Data Collected by Signature:

Facility Name/Level:

	Employee 1	Employee 2	Employee 3
Name			
Sex			
Date of Birth			
Qualification			
Cadre			
Salary Scale			
File number			
Computer No.			
Registration & License No.			
Post/Current assignment			
Status of employment			
Date of first appointment			
Date of present appointment			
Contact (Office & Home)			

HRIS Function Checklist

Date..... District/Ministry/ HPC.....

Names of Interviewers..... Tel.....

Section A: System assessment

No	Question/Indicator	Response	Additional notes
A1	Information Sharing with other HRIS		
A1.1	Does the system allow for data sharing with other HRIS? <i>If no skip to A2</i>	Yes <input type="checkbox"/> No <input type="checkbox"/>	
A1.2	If yes, which HRIS does the system share information with?	Select the method of information sharing below	
A1.2(a)	Ministry of Health	1. Automatic linkage 2. Export/Import Method 3. Web-based Access	
A1.2(b)	Ministry of Public Service	1. Automatic linkage 2. Export/Import Method 3. Web-based Access	
A1.2(c)	Ministry of Education	1. Automatic linkage 2. Export/Import Method 3. Web-based Access	
A1.2(d)	Uganda Nurses and Midwives Council	1. Automatic linkage 2. Export/Import Method 3. Web-based Access	
A1.2(e)	Uganda Medical and Dental practitioners council	1. Automatic linkage 2. Export/Import Method 3. Web-based Access	
A1.2(f)	Pharmacy council	1. Automatic linkage	

		2. Export/Import Method 3. Web-based Access	
A1.2(g)	Allied Health Practitioners council	1. Automatic linkage 2. Export/Import Method 3. Web-based Access	
A2 System Uptime (Running time)			
A2.1	Has the system been running consistently for the past 14 days? Log into the system to verify	Yes <input type="checkbox"/> No <input type="checkbox"/>	
A3 Information Backup			
A3.1	Is the HRIS data fully backed up? Compare data in the HRIS with the data in the back up	Yes <input type="checkbox"/> No <input type="checkbox"/>	

Section B: Data assessment

No	Question/Indicator	Response	Additional notes
B1	Percentage of Health workers (Doctors, Nurses, Midwives and Clinical Officers) represented in the database. Compare with the numbers in the Personnel Officer/DHO records		
B2	Percentage of data entered accurately into the HRIS. Sample at least 30% health workers in the HRIS and compare with their hard copy files in the Personnel Officer/DHO files		
B3	Is there a trained person responsible for the day to day maintenance of the HRIS?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
B4	If yes, who is responsible for the day to day maintenance of the HRIS?		

Section C: Data Use

No	Question/Indicator	Response	Additional notes
C1	Number of people at the Central level that have logged into the HRIS database. Log into the database to verify		
C2	Number of people at the District level that have logged into the HRIS database. Log into the database to verify		

C3	Are there any reports that have been generated from the HRIS system? <i>Verify for any reports sent through email or reports kept on file</i>	Yes <input type="checkbox"/> No <input type="checkbox"/>	
C4	If yes in C3, which people have these reports been shared with?		
C5	Are there any district/Ministry/HPC plans that have been informed by HRIS data? <i>Verify with plans at district/Ministry/HPC</i>	Yes <input type="checkbox"/> No <input type="checkbox"/>	
C6	If yes, in C5, give examples of these plans that have been informed by HRIS data.		