



# HEALTH SECTOR DIGITIZATION REPORT

OCTOBER 2023

## Introduction

The Ministry of Health is in the process of digitizing health service delivery in line with her Health Information and Digital Health Strategic Plan 2020/21 – 2024/25 as aligned with the MoH strategic plan 2020/21. This was in response to the NDP III and following a Presidential Directive to leverage information technology as a vehicle for improving medical supplies accountability and the quality of health care as well as continuity of care based on a transferable medical record.

## National Systems

MOH has started deployment of electronic hospital management information systems in all health facilities, ie Electronic Medical System (EMR) powered by eAFYA and Clinic Master and an Electronic Community Health Information System (eCHIS) powered by the Community Health Toolkit and Open Smart Register for all village health teams (VHTs) as a way of improving healthcare and information access to boost productivity of its staff and performance.



**The Permanent Secretary of Ministry of Health, Dr. Diana Atwine on Digitization of the Health Sector**



**If we go digital, we will have efficiency because the information will be accessible anywhere and in real-time to facilitate decision-making."**

She also noted how the active implementation of the electronic medical record system was ongoing and specified the need to first pioneer it in greater Kampala (where health needs, she observed, were urgent) before it's rolled out nationally. She termed this a "mission to leverage district health systems" during the launch of the Health Information Digital Health Strategic Plan.

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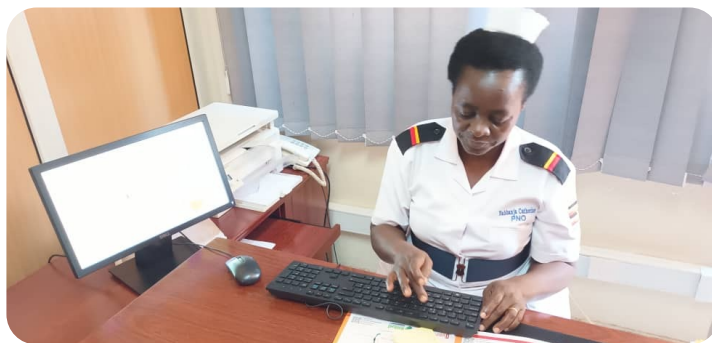
## What is hot in the Ministry of Health Digital Space?

Digital technologies have become essential for global health and health service delivery. Innovation, particularly in the digital sphere, is happening at an unprecedented scale. Even so, its application to improve the health of populations remains largely untapped, and there is immense scope for the use of digital health solutions in service delivery.

The Ministry of Health is planning on hosting the 1st edition of the Uganda National Digital Health Conference scheduled for 13<sup>th</sup> and 14<sup>th</sup> November 2023. This will bring together thought leaders, policymakers, researchers, innovators, practitioners, private sector, digital health vendors, consumers and donors to discuss Uganda's progress in implementing digital health initiatives.



## Digital Health Care and the Human touch



Digitalization is known to lead to changes in routine tasks of professionals, tools and work organization. As such it is important to understand the perspective of the people interacting with the digital innovations in the healthcare space.



**We have the biggest team and workload at Kawempe National Referral Hospital, we have been eagerly waiting to see how the system will reduce the paper workload we currently have. I feel work will be somehow easy, especially on the accuracy of documentation, sometimes we miss out some details while using the paper system, we hope the digital system will capture the information in a better way."**

**Nabbanja Catherine Mugoya**, a principle nursing officer at Kawempe National Referral Hospital on her expectations of using the EMR.

## The Ministry of Health Digitization Project

The digitization project implementation is guided by a technical team led by;



**Hon. Dr. Jane Ruth Aceng Ocerro (MP),**  
Minister for Health



**Dr Diana Atwine,**  
Permanent Secretary,  
MoH



**Dr Henry Mwebesa,**  
Director General, MoH



**Dr. Sarah Byakika,**  
Comissioner Planning,  
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**Mr. Paul Mbaka,**  
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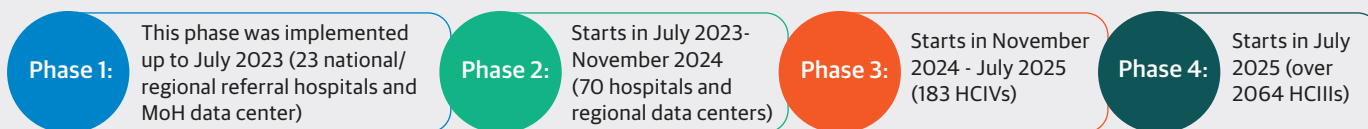


**Mr. Martin Lukwago,**  
Digitization  
Coordinator, MoH

# Deployment of Health facility and Community based systems

## Facility based systems (EMRs)

Due to the broad nature of the digitization process, deployment of EMRs will be implemented in 4 phases through different working groups as per below;



### Status Update

	Infrastructure	Power Availability	System in use	Deployment	Usage		Staff Attitude
					OPD	IPD	
Mulago NRH	LAN - 10%, 15% computers available	Yes	Yes	Yes	15%	0	System still has gaps
Mulago NSWN Hospital	LAN - 99%, 80% computers available	Yes	Yes	Yes	90%	60%	Poor for consultants and doctors
Kiruddu NRH	99% - LAN, 90% computers available	Yes	Yes	Yes	90%	90%	Improving
Kawempe NRH	LAN - 65%, 80% computers available	Yes	Yes	Yes	90%	40%	Improving
Naguru China Friendship	LAN - 95%, 80% computers available	Yes	Yes	Yes	90%	70%	Poor for doctors
Butabika NRH	LAN - 75%, 80% computers available	Yes	Yes	Yes	60%	0%	Still poor
Masaka RRH	LAN - 95%, 80% computers available	Yes	Yes	Yes	90%	60%	Improving
Jinja RRH	LAN - 65%, 70% computers available	Yes	Yes	Yes	90%	60%	Improving
Lira RRH	LAN - 95%, 80% computers available	Yes	Yes	Yes	90%	0%	Improving
Kayunga RRH	LAN - 100%, 80% computers available	Yes	Yes	Yes	90%	80%	Improving
Mubende RRH	LAN - 80%, 80% computers available	50% availability	Yes	Yes	90%	60%	Improving
Kawolo GH	LAN - 100%, 80% computers available	Yes	Yes	Yes	90%	60%	Improving
Mukono GH	LAN - 100%, 90% computers available	Yes	Yes	Yes	50%	0%	Improving

### ICT Infrastructure status

Status	NRH	RRH	GH	HCIVs	HCIIIs
Facilities with computers and complete LAN	2	7	35		
Facilities with computers and INCOMPLETE LAN	3	9	13*		
Facilities with computers but LAN pending				100	
Facilities with no LAN & Computers			4	83	1076
<b>Total</b>	<b>5</b>	<b>16</b>	<b>52</b>	<b>183</b>	<b>1076</b>

\*13GH have incomplete LAN but also have adequate computers

## Progress of Digitization Working Groups:



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### Infrastructure and Equipment Working Group

A comprehensive assessment as a major Phase 1 activity is being carried out by the MoH with support from partners like WFP, UNICEF and DOD.

1542

out of 2737 health facilities have been assessed in 118 districts

These include:

82

General hospitals

18

Regional Referral Hospitals

6

National Referral Hospitals.



On the next page, are details of the funding and some of the facilities that have been assessed so far.







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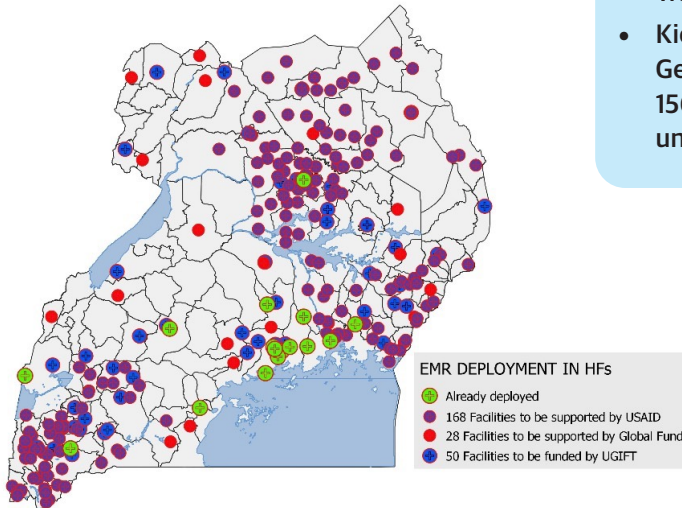


## EMR Deployment Working Group

Below is the progress of EMR deployment so far:

- ✓ EMRs have been deployed in 15 hospitals (5 NRHs, 6 RRHs and 4 GHs).
- ✓ EMR support team was set up and has been supporting users where the system has been deployed.
- ✓ Active resource mobilization for rollout in more hospitals.
- ✓ Support to hospitals to add on more units/service areas as we move towards 100% end to end EMR use in hospitals.
- ✓ Support to collect, resolve user challenges and requirements in collaboration with technology partners.
- ✓ Conduct support supervision to the implementing hospitals.

### Coverage of EMR deployment



### Challenges

- Lack of adequate infrastructure to rollout the EMRs end to end in health facilities
- Low resources for EMR rollout across Uganda (training, system installation, onsite mentorship among other rollout activities)

### Recommendations

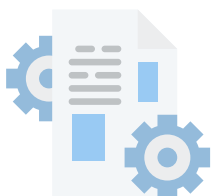
- Mobilise resources for deployment of the EMR all over the country.

### ▶▶ NEXT STEPS

- Achieving 100% digitisation of all service areas in the 23 Referral hospitals (More computers, LAN extension, Training).
- Kick starting deployment in phase 2: General hospitals (30 GHs under GF, 156 facilities under USAID, 50 facilities under UGIFT).



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## Requirements Gathering and Customization Working Group

In line with the digitization efforts, the Requirements Gathering and Customization thematic working group supports the generation and documentation of system and user requirements to inform the development and customization of electronic systems.

### Challenges

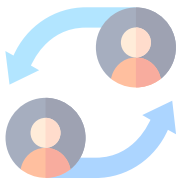
- Some of the user requirements were not properly documented by the EMR providers.
- No funds to hold user requirement workshops to develop comprehensive EMR System User requirements.

### ▶▶ NEXT STEPS

- Develop comprehensive guidelines for the implementation of the EMR system that will help guide aspects like design and development, requirements, reporting among others.



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## Change Management and Capacity Building Working Group

Digital transformation is a huge undertaking that requires careful planning for change management to be successful. Without change management, digital transformation projects are more likely to fail. Change management helps organizations plan for and manage the changes that need to happen to successfully implement a new digital system. It is an essential part of any digital transformation project. Change management is often seen as a complex and challenging process, but it is essential for ensuring that digital transformation projects are successful.

### Achievements

- ✔ Identification of technological, organizational and behavioral challenges at each service point in Mulago SWNW, Naguru General Hospital and Kiruddu NRH that were hindering use of the EMR.

### Challenges

- There are major gaps in ICT skills for most health workers, this may greatly affect usage of the digital systems.
- Channels to handle digital system challenges are yet to be functionalized and should be known by all system users in health facilities.
- Change management is a broad, complex, continuous process, making its execution very complicated.
- Most of the hospitals still have infrastructure and human resource gaps, this makes seamless usage of the systems difficult and this can cause frustration to the users.
- Funding of the change management activities like the change management assessment, stakeholders' meetings etc is still a big challenge.

### Recommendations

- Change management should be done in phases to handle the broad and complex nature of the process.
- MoH and partners should put in more effort in resource mobilization to fund digitization activities like ICT training for health workers, filling infrastructure gaps in health facilities, etc.
- There should be clear channels to handle challenges of system users and these should be known to all users.
- There should be clear change management SOPs in place to guide the process.

### ▶▶ NEXT STEPS

- Carry out Change Management assessment in the rest of the hospitals where the EMRs have been deployed, by November 2024.
- Develop change management SOPs, with guidance from the change management assessment to facilitated behavioral change and uptake of digital systems at different levels (National, regional and local government levels) at MoH.
- Organize a change management stakeholders' workshop, aiming at bringing together different stakeholders like MoH, partners, district health officers (DHOs), hospitals directors, etc. to ensure that everyone is driving the common goal of ensuring uptake digital systems through mindset change and sort out other issues that might be hindering use digital system.
- Mobilize funds for change management activities.



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## Community Health Information System(eCHIS) Working Group

In the Ministry of Health's current strategies, the ministry commits to strengthening her community-level implementation with a focus on prevention and health promotion. As part of this process, the MoH is implementing a digitized community health information system to be used by Village Health Teams (VHTs) as a digital job aid as they deliver services.

This automates reporting while supporting the VHTs to make decisions and track commodities.

The community health information system is being partially implemented in the 11 districts of; Koboko, Maracha, Nebbi, Ntungamo, Lamwo, Buikwe, Amuru, Oyam, Mukono, Kamwenge and Lira as seen below;

District	No. Parishes	No. of Villages	No. VHTs	VHTs on eCHIS	% coverage
Amuru	58	403	806	546	68
Koboko	61	432	864	400	46
Nebbi	69	636	1272	400	31
Buikwe	67	478	956	1066	112
Lamwo	86	537	1074	490	46
Lira	58	542	1084	490	45
Maracha	91	691	1382	500	36
Ntungamo	135	1035	2070	1101	53
Oyam	74	1094	2188	619	28
Mukono	97	607	1214	1214	100
Kamwenge	69	426	824	852	103
<b>Total</b>		<b>6881</b>	<b>13734</b>	<b>7678</b>	

The Ministry of Health with support from UNICEF and Global Fund has supported 3672 VHTs out of 11296 and aims at fully scaling up the eCHIS to 11 more districts with plans for rollout across the country.

### Achievements

- ✔ Automate the reporting from the VHTs into the national health information system. This will reduce the need to use the paper-based tools for the saturated facilities.
- ✔ Piloting the translated eCHIS in Buikwe to allow VHTs to choose between languages.
- ✔ Automation of the monthly national and district reports that track community health service implementation.

- ✔ National Training of Trainers for 60 master eCHIS trainers in Jinja.
- ✔ District Health Team Trainings in Ntungamo (50 DHTs) and Lamwo (40 DHTs), refresher trainings and support supervision in all of West Nile, Lango and Acholi.
- ✔ Onboarding of VHTs onto eCHIS in Ntungamo (801 VHTs) and Lamwo (290 VHTs) districts. (All equipped with new smart phones and solar charges).
- ✔ Revision of immunization and WASH workflows in the eCHIS. This is to ensure the current standards and practices are implemented.
- ✔ Transitioned 210 VHTs who were previously using partner-led community information systems to the national eCHIS in Buikwe. This is intended to foster sustainability of the digitization efforts.
- ✔ Drafted eCHIS implementation guidelines to standardise the implementation. These were developed through a consultative process leveraging on earlier learnings and best practices.

### Challenges

- Limited funding for data bundles for the VHTs. This has affected timeliness and availability of the reports.
- Poor device management resulting in loss or misplacement.
- The lack of a standard incentive package to motivate the community health workers to carry out their work.
- Low support supervision in the implementing districts.

### Recommendations

- Fast track zero rating (Free) access to eCHIS. Currently most VHTs have to pay for data bundles which has affected the reporting rates.
- Mobilize resources for regular support supervision to the VHTs and the implementing Districts.
- Fast track the completion of dashboards. The Dashboards should be accessible for all levels; Village to National to improve Data use.



## ▶▶ NEXT STEPS

- Preparations for the on boarding of 800 VHTs in Bugiri, 2450 in Global Fund supported districts, 1240 in Mukono, 750 in Kamwenge.
- Design of the data warehouse and revision of the dashboards and supervisor applications.
- Integrate with Electronic Medical Records being deployed in the Facilities to allow for complete care. VHTs referrals will automatically be flagged at facilities with all the key findings and history and VHTs could be notified to follow up discharged patients in the communities.
- Roll out of eCHIS to other districts in the country.
- Upgrade eCHT to 4.2. The new version comes with several modern features that will ease decentralization of account management and user experience.
- Revise HIV and TB workflows in the eCHIS to further align to the current program standards and strategic directions.
- Integration with Family Connect for regular reminders and tips to Pregnant and lactating Mothers.
- Integration with The National Identification & Registration Authority's information system to ease and automate birth and death notifications as recorded by the VHTs in the community.

## Conclusion

The Government of Uganda is committed to improving the application of digital health technologies which play a fundamental role in facilitating timely availability of high-quality health information and delivery of improved health care services. This is evidenced by the focus on the Digital Transformation program in the National Development Plan (NDP) III which aims at increasing ICT penetration and use of ICT services for social and economic development.

## Appendix

### Steering Committee

Role	Name	Contact
Permanent Secretary	Dr. Atwine Diana - PS MOH	diana.atwine@health.go.ug
Co-chairperson	Dr. Henry Mwebesa - DG MOH	henry.mwebesa@health.go.ug
	Dr. Kabugo Charles - Director Kiruddu NRH	kabugocharles@hotmail.com
Secretariat	Paul Mbaka - ACHS DHI	paul.mbaka@health.go.ug
	Martin Lukwago - SM&E Officer/ Digitization Coordinator	martin.lukwago@health.go.ug
Members	Representatives: MOH Directors & Commissioners, Developments partners, System service providers, Private Sector	

### Project Implementation Team

Role		Name	Contact
CHS PFP		Dr. Sarah Byakika	sarah.byakika@health.go.ug
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Digitisation Coordinator		Martin Lukwago	martin.lukwago@health.go.ug
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Requirements gathering, customization and governance	Team lead	Solomon Muhumuza	solomon.muhumuza@health.go.ug
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Change management, implementation research & capacity building	Team lead	Winfred Kahura	winniekahura@gmail.com
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Electronic Community Health Information System	Team lead	Dr. Meddy Rutaisire	rutayisire24meddy@gmail.com
	Secretary	Ruth Byangwe	turuthb@gmail.com

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