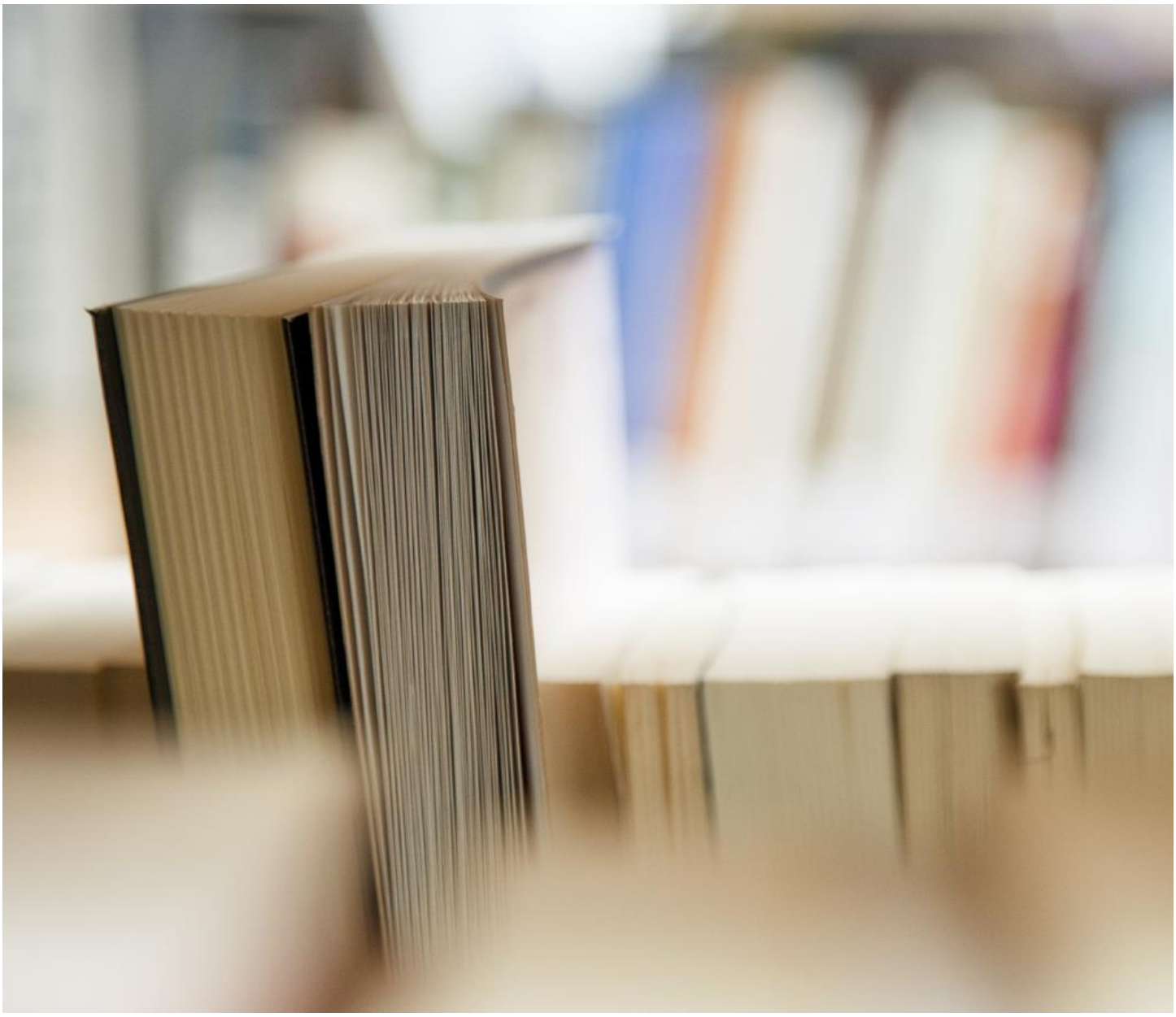


LABORATORY QUALITY MANAGEMENT SYSTEM TRAINING REPORT

By

Lali Ziras William
Nandala Michael
Diendu Michael

LABORATORY QUALITY MANAGEMENT SYSTEM TRAINING REPORT

Group photo taken at the Laboratory Quality Management System training at Hotel Bomah, Gulu

A: Facilitator information				
No	Name	Institute of affliation	Contact	
			E-mail	Tel No
1	Lali Ziras William	CPHL-MoH	lwzlali@gmail.com	+256-704-667277
2	Nandala Michael	CPHL-MoH	nandalawm@yahoo.com	+256-773-087501
3	Dfendu Michael	CPHL-MoH	dfensyl@yahoo.com	+256-772-666332
B: Duration				
Duration of training: 5 days				
Vuenue: Hotel Boma - Gulu				
Date: 23rd – 30th June 2014				

1. Introduction

Laboratory services are an essential component in the diagnosis and treatment of persons infected with human immunodeficiency virus, malaria, and *Mycobacterium tuberculosis*. Presently, laboratory infrastructure and test quality for all types of clinical laboratories remains weak. Quality laboratory service is useful for increased disease detection, effective patient management, and rational drug use. The Ministry of Health has recognized the need to expand and develop quality laboratory services as part of grater framework of health system strengthening within resource-limited settings. As part of the effort to strengthen service delivery, Ministry of Health is working towards instituting laboratory quality management system at all laboratory levels. To move this agenda forward, implementing partners have been tasked to ensure that laboratory staff receive laboratory quality management systems training.

International Organization for Standardization (ISO), and Clinical and Laboratory Standards Institute (CLSI) defined laboratory quality management system (LQMS) as coordinated activities to direct and control the organization in regard to ensuring quality. The ISO 15189 further uses the laboratory quality management system as decoding the ISO 15189 standard. In 2010 the Ministry of Health, Uganda adopted the Laboratory Quality Management System to improve the quality of laboratory services towards accreditation through the WHO (AFRO) step by step quality improvement. Hence Laboratory Quality Management System became a principle training package for peripheral laboratory quality improvement and complementary for the higher laboratories that were earmarked for strengthening laboratory Management towards Accreditation (SLMTA) program

1.1. Objectives

1.2. Main objective

The aim of this training was to introduce quality management system to the laboratory personnel through training in the preparation for national laboratory accreditation.

1.2.1. Specific objectives

- To train the participants in the principles and concepts (knowledge) of laboratory quality management system in preparation towards national laboratory accreditation
- To introduce the participants to the applications of the principles and concepts of laboratory quality management system through quality improvement in laboratory management
- To introduce the participant to routinely laboratory quality audit using the WHO (AFRO) Laboratory Assessment Checklist

2.0. Participant expectations

The participant expectation were as follows:

- To acquire new knowledge and skills that will be applied to improve the quality of my laboratory results
- To get new knowledge about laboratory quality management system and laboratory accreditation.
- To acquire new knowledge about how to utilize the little resource, so as to improve on the quality of laboratory services
- To get hand-outs as reference material so as to know more about external quality assurance and share experiences and challenges and.
- To acquire knowledge and information in regards to supplies from the National Medical Stores.
- To be able to draw quality improvement plans for my laboratory and manage the quality assessment

3.0. Methods and materials

The following methods were used to deliver the training package to the participants:

- Power point presentations for delivery of quality management system principles and concepts (knowledge domain)
- Case scenarios, demonstration, group/class discussions and exercises were used in delivery of skills and experiences in laboratory quality improvement (QI) quality management system practices (QMAPs)

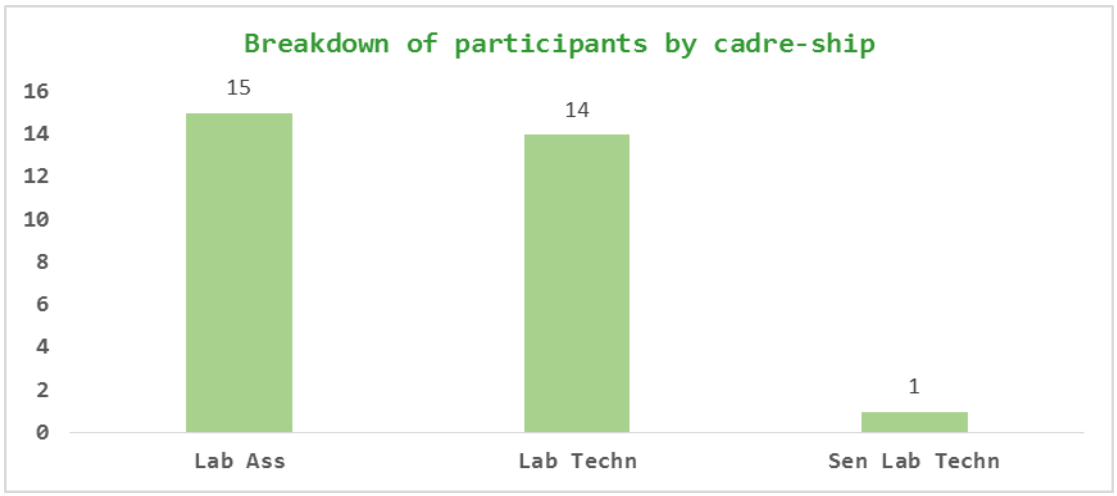
At the end of the five day the participants evaluated the training course for the following parameters:

- The ability of training course in meeting its intended objectives
- The design of the training course
- The environment of delivery of the training course
- The content presentation
- The learning experience and any other relevant experience

Participants will be assessed after four months of implementation. However, NUHITES will continue to support the facilities to implement the QIPs while QIPs will be supervised collaboratively by NUHITES and the Central Public Health Laboratories

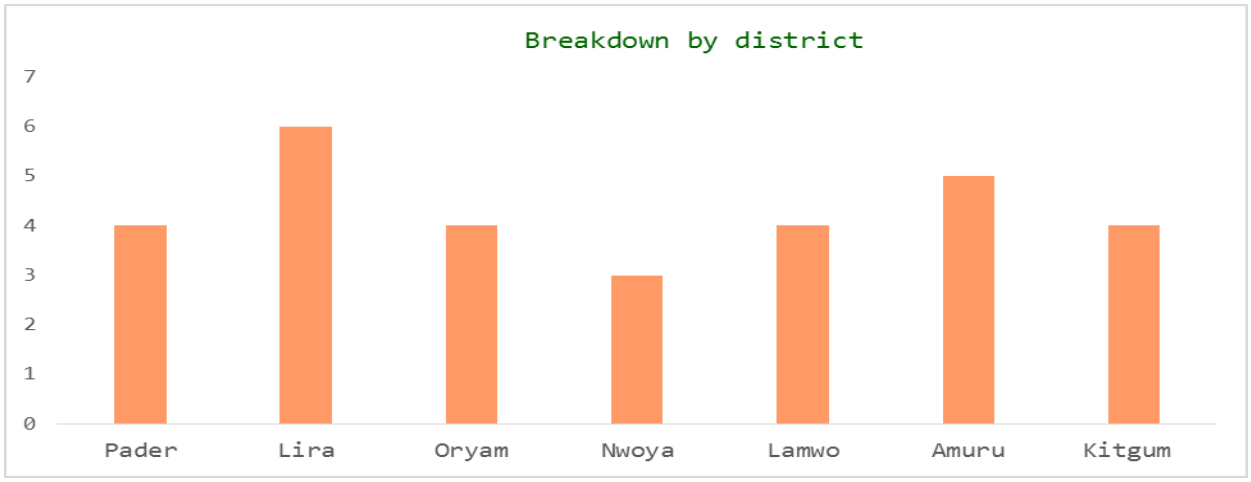
4.0. Detailed description of training course process

3.1. Analysis of participants by level of service and cadre ship



The majority of the cadres trained were laboratory assistance 15 (50%) and laboratory technician 14 (47%)

3.2. Analysis of participants by district



The above figure shows a breakdown of participants by district, majority of participants were coming from Lira District 6 (20%) and Amuru 16.7%

3.3. Summary of events of the modular sessions

The table below summaries the key events of the proceedings in the modular sessions

Summary of modular sessions		
A: Summary of day one of the training course (23rd-June-2014)		
No	**Modular session**	**Summaries of events**
1	Laboratory management frame-work	This module aimed at introducing the participants to: - The key laboratory management responsibility areas, out-come of these responsibility areas, job tasks and these tasks are performed. - Emphasis was laid on WHO(AFRO) laboratory strata II on which the targeted course participants were drawn - Participants were assigned to internalize the laboratory management frame-work and practice the application of the principles and concepts of the frame-work
2	Introduction to Laboratory Quality Management System (LQMS)	The module gives a general background to the principles and concepts of: - The laboratory management system in preparation of laboratories for the national accreditation using the WHO (AFRO) step by step quality improvement - The modular examined the interface of the clinical pathway (pre analytic, analytic and post analytic phases) with the quality management system - The course further familiarize the participants with standard organizations such as ISO, CLSI and historical events in the development of quality management
3	Laboratory facility and safety	This module introduced the participants to: - The categories of laboratory biohazards and their management - Bio risk assessment and mitigations - Laboratory infrastructure in biosafety management - Participants discussed a case scenario that demonstrated common biosafety and infrastructure problem in typical health laboratories in Uganda
4	Laboratory equipment management	The module was designed to build the capacity of the participants: - To management laboratory equipment at the various stages of equipment acquisition to boarding off - Participants examined the records essential for management of equipment in its life-time in the laboratory - The participants studied a case scenario that illustrated the inadequacies of poorly laboratory equipment and brainstorm the corrective actions to over-come the short fall in the case scenario
B: Summary of day two of the training course (24th-June-2014)		
1	Introduction to WHO (AFRO)	The module highlighted the following:

	Laboratory Assessment Checklist	- The characteristic features of the checklist such as method of audit, scoring scheme and its interpretations, quality audit areas and linkages with the ISO 15189 and other standards - The participants discussed the application of the WHO(AFRO) checklist to quality audit in own laboratories - The participants demonstrated the identification of quality gaps (non-compliances) using the WHO(AFRO) laboratory assessment checklist
2	Supply Chain Management	The module emphasized the importance of the following: - Laboratory supplies selection, quantification, purchasing storage in order to ensure uninterrupted testing services to poor supply chain management problems - The participants brain stormed on generation of list of supplies for test menu storage hygiene, inventory management -
3	Process control: Sample management	The module on the sample management highlighted the following sample management issues: - The importance of sample management in decision making for the patient management. The issues highlighted were the information that needed to be put in laboratory handbook, handling of emergency tests - The participants brainstormed on sample transportation, safety concerns in sample handling, accessioning of samples and tracking of sample within and without the testing process
4	Process Control: Quality Control for Quantitative Test I	In this module the participants were exposed to the following: - Definition of key terms, principles and concepts of qualitative and quantitative quality control - The participants discussed the application of the above principles and concepts in laboratory set up - The participants further did and presented group work on the development of quality control tools for laboratory supplies such as kits, stains and environmental controls such as refrigerator temperature control and maintenance
C: Summary of day three of the training course (25th-June-2014)		
1	Assessment: Audits	This module exposed the participants to the following: - Learning the importance of quality audits, and the procedure and the processes of conducting audits - The participants discussed the principles and concepts of quality audits, conducting audit meetings, writing audits reports and follow-up of corrective actions as a result of quality audits - The roles of the laboratory stakeholders in quality audits and the monitoring the action points of audits
2	Assessment: External Quality Assessment	In this module, the participants were exposed the following: - The importance of external quality assessment (EQA) in

		opportunity for improvement (OFI) and organization of EQA schemes - The participants discussed the different methods of conducting EQA, the roles of the stakeholders in EQA, management of the EQA records and case scenario - Addressing the failure in EQA and performing corrective actions - The resources used in EQA schemes
3	Assessment: Norms and Accreditation	This module highlighted the following: - Importance of laboratory accreditation standards (international and national) and standardization of laboratory testing and recognition - The participants discussed the accreditation standards ISO 15189, regulations, road map to accreditation and bodies, requirement for accreditation and roles of stakeholders in accreditation -
D: Summary of day four of the training course (26th-June-2014)		
	Introduction to Improvement Projects	
	Personnel Management	This module exposed the participants to the following learning experiences: - Importance of personnel management in quality management system - The participants discussed personnel orientation, competency appraisal, personnel motivation, relevant documentation for personnel files and management of personnel files
	Customer services	The customer services module exposed the participant to the following learning experiences: - Identification of laboratory customers - The importance of conducting regular custom services survey in the management of customer expectation - The methods of collection of data from customers about the quality of services - The tools used by the laboratory to communicate with its customers
	Occurrence Management	The occurrence management module exposed the participants to the following learning experiences: - The importance of documentation of laboratory occurrences - Performances of root cause analysis and corrective actions on all laboratory occurrences - Procedure of conducting laboratory occurrence management (occurrence cycle)
	Quality Improvement Project 1	This module introduced the participants to quality improvement projects (QIPs). The following were discussed by participants in this session: - Designing of QIPs by the health facilities - Implementation, monitoring of QIPS

	- Reporting and evaluation of QIPs - The application of PDCA concept in the cycle QIP implementation
E: Summary of day five of the training course (27th-June-2014)	
Documents and Records	This module exposed the participants the following learning experiences: - The importance of documents and records management in the laboratory quality management system - The participants discussed the policies and application of documents and records control system, coding system, maintaining documents current, authorized, archival of documents - The participants also brained stormed on the policies and structure of records, their management and responsibility the of stakeholders in laboratory record management
Information Management	The module of laboratory information management module exposed the participants to the following experience: - Laboratory information policy and structure, storage and archival and use of laboratory data - The participant discussed the method of laboratory information management, evidence based laboratory decision making and scope of laboratory information management
Organization	From this module the participants learned the following: - The structure of laboratory organization for the implementation of quality management systems - The responsibilities of the laboratory in-charges, quality managers, bio-safety officers and testing personnel - The participant discussed the management structure such the organogram, chain of command and communication, physical organization of the laboratory macro/micro structure and workflow
Process Improvement	This module exposed the participants to the following learning experiences: - Application of principles and concepts in laboratory process improvement - Using opportunity for improvement for identification of service errors, investigation of root causes or error using the 5 why principles - The application of the PDCA as an improvement tools - Characteristics of good quality performance indicators, collection of data for monitoring and evaluation of performance using quality indicators, selection of service indicators
Improvement Projects 2	In this module the participants were exposed to scrutinizing the quality improvement project and give feedback in class presentation. The participants were also exposed to: - Customization of quality improvement projects for implementation in their laboratories - Analysis the resource requirements for quality improvement

	projects - The participants further discuss the quality improvement project report writing

4.0. Achievements

The trainers noted the following as the achievements of the training:

- The training registered 100% turn up despite the short notice that was given to the trainees to prepare
- From the daily evaluations, the trainers noticed an improvement in level of understanding in laboratory quality management systems.
- An action points were developed for each participating health facilities.

5.0. Summary of training evaluation

The training course was evaluated for the following parameters:

- Fulfillment the participants expectation and course objectives
- Suitability of the environmental for learning
- Suitability of the course content

The report also quoted some key remarks the participants made about the training course. The table below showed how the participants evaluated the course

5.1. Parameter evaluation

Table of evaluation parameters				
No	Parameter evaluated	% exceeded	% met	% not met
	Fulfilled the participants expectation and course objectives	-	22 (96%)	2 (8%)
	Suitability of the environmental for learning	-	20 (95%)	1 (5%)
	Suitability of the course content	10 (48%)	11(52%)	-

5.2. Quotations of key remarks by participants

Below were the presentation of quotations of key remarks the participants give during the evaluation session:

1. "I have attained overwhelmingly knowledge from this training and request that more of it should organized"

2. “Let the Central Public Health Laboratories send us more information (documents) electronically for customization for successful implementation of laboratory quality management system”
3. “The facilitators were friendly and they explained to us things into details, keep up your friendly mood”
4. “Nothing actually went wrong only that improve on the quality of the handouts for better understanding next time”
5. “Extend this training to the other laboratory personnel not yet trained”
6. “The course modules are very good but needs long time (at least 2 weeks) for its delivery ”
7. “Provide all laboratories with the laboratory management frame-work”

6.0. Training challenges

Although the training was generally successful, there were also some challenges that were experienced. These challenges were as follows:

- Inadequate time for hand on practices and sharing of laboratory experience
- Late arrival by the participants made processing of their per diem delay, which might affected their level of concentration

7.0. Recommendations and way forward

The following were identified as way forward in order to address the training challenges identified:

7.1. Recommendations to the participants

- Supporting the trained laboratories with the material requirements for the implementation of the assessed quality improvement projects
- Continuous supportive supervision and training follow-up during the gazatted six months for the project improvement
- The trainers recommend that all participants report a day before as indicated on their invitation letters

7.2. Recommendations to the facility in-charges

- The trainers recommend that the facility in-charges support trainees in sharing the acquired knowledge with other lab staff.

- We also recommend that the facility in-charges support the trainees in implementing their quality improvement projects

7.3. Recommendations to the implementing partner

- The trainers recommend that the implementing partner supports mentors to help trainees implement their projects

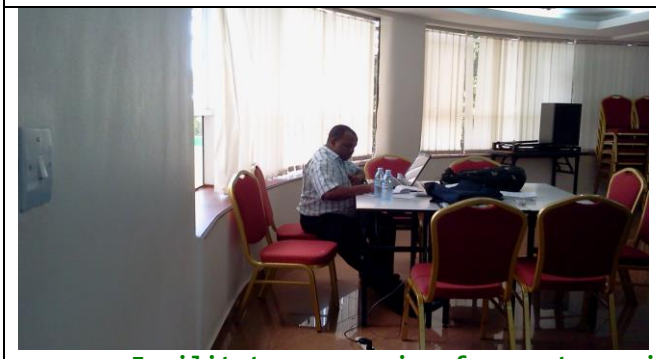
Appendix 1: Training in pictorial

Participants group discussion I

Participants group discussion II

Group work presentation III

Group work presentation IV



Facilitator preparing for next session

Facilitator facilitating a session

Participants energizing

Participant attending training session

Appendix 2: List of participants

No	Name	Sex	District	Health facility	Designation	Tel No
1	Amitocan Susan	F	Pader	Acholibur HC III	Lab Technician	+256-773-638102
2	Mulaki Geofrey	M	Oryam	Otwal HC III	Lab Technician	+256-775-077789
3	Acia Denis	M	Lira	Agali HC III	Lab Technician	+256-7522-63207
4	Okino Denis	M	Nwoya	Rurongo HC III	Lab Assistant	+256-775-786230
5	Anywar David	M	Nwoya	Alero HC III	Lab Assistant	+256-783-779822
6	Alinga John Bosco	M	Oryam	Anyeke HC III	Lab Technician	+256-772-547613
7	Oyet Michael	M	Amuru	Pogo HC III	Lab Assistant	+256-782-123189
8	Ocen Alfred Glicks	M	Kitgum	Orom HC III	Lab Assistant	+256-782-725209
9	Araku Johnson Felix	M	Lira	Ongico HC III	Lab Technician	+256-772-183561
10	Akello Agnes Patra	F	Lira	Ogur HC III	Lab Technician	+256-756-251044
11	Omodi Patrick	M	Oryam	Agulurude HC III	Lab Assistant	+256-782-445091
12	Otto Thoms	M	Kitgum	Kitgum Matidi HC III	Lab Assistant	+256-783-774436
13	Oola Santo Paito	M	Nwoya	Koch Goma HC III	Sen Lab Techn	+256-782-652758
14	Opera Sam Eron	M	Lamwo	Palabek-kel HC III	Lab Technician	+256-779-681612
15	Obwola Richard	M	Pader	Puranga HC III	Lab Technician	+256-772-184067
16	Okaya John Bosco	M	Pader	Pajule HC III	Lab Assistant	+256-753-075677
17	Onek Vincent	M	Kitgum	Mucuwini HC III	Lab Assistant	+256-775-590324
18	Okot Michael	M	Lamwo	Padibe HC III	Lab Technician	+256-774-398895
19	Kidega Patrick	M	Lamwo	Lokung HC III	Lab Assistant	+256-775-643637
20	Otim Calvin	M	Lira	Aromo HC III	Lab Technician	+256-772-618460
21	Rubangakene Patrick	M	Pader	Kilak HC III	Lab Assistant	+256-782-903698
22	Ojok William	M	Kitgum	Akunalaber HC III	Lab Assistant	+256-773-683724
23	Okello Vincent Oola	M	Amuru	Pawel HC III	Lab Assistant	+256-777-763255
24	Byagany John Paul	M	Lira	Amachi HC III	Lab Technician	+256-782-198226
25	Odongo Tom	M	Lira	Barr HC III	Lab Assistant	+256-781-484909
26	Oyoo Thomas	M	Lamwo	Palabek HC III	Lab Technician	+256-774-640736
27	Ocen Richard	M	Amuru	Pabbo HC III	Lab Assistant	+256-772-081279
28	Rubangakene Richard	M	Amuru	Otwee	Lab Assistant	+256-785-703657
29	Ociti Francis	M	Amuru	Labongogali HC III	Lab Technician	+256-773-471946
30	Okwor Denis	M	Oryam	Iceme HC III	Lab Assistant	+256-784-549928

Appendix 3: Training schedule

Laboratory Quality Management System Training Schedule		
Day one: Arrival		
Day Two:		
8:00am - 08:30am	Registration	Secretariat
08:30am – 9:00am	Opening Remarks, Introduction, Background	Lali ZW and Dfendu M
9:00am– 10:30am	Laboratory Management Frame-work	Lali ZW
10:30am – 10:45am	**Break**	
10:45am – 11:45 am	World Health Organization Laboratory Checklist and Assessment	Lali ZW
11:45am – 12:45 pm	Introduction to Quality (Module 1)	Dfendu M
12:45pm – 01:45 pm	**Lunch**	
02:00 pm – 04:i00pm	Facilities and Safety (Module 2)	Nandala M
04:00pm -04:30pm	**Tea and Departure**	
Day Three:		
8:00am - 08:30am	Registration	Secretariat
8:30am - 08:40am	Recap	Nandala M
8:40am - 10:10am	Equipment (Module 3)	Defundu M
10:10am - 10:40am	**Break**	
10:40am - 11:40am	Supply Chain Management (Module 4)	Defundu M
11:40am –12:40pm	Process Control: Sample Management (Module 5)	Lali ZW
12:40pm – 01:45 pm	**Lunch**	
02:00pm – 04:30pm	Process Control: Introduction to Quality Control (Module 6)	Lali ZW
	Process Control: Quality Control for Quantitative Tests I (Module 6)	
04:30pm – 05:00pm	Evaluation	
05:00pm – 05:30pm	**Tea and Departure**	
Day Four :		
8:00am - 08:30am	Registration	Secretariat
8:30am - 08:40am	Recap of the Previous Day Activities	Dfendu M
8:40am - 10:00am	Process Control: Quality Control for Qualitative and Semi-Quantitative Procedures (Module 7)	Lali ZW

10:00am - 10:30am	**Break**	
10:30am – 01:00pm	Assessment: Audits (Module 8)	Dfendu M
0100pm – 02:00pm	**Lunch**	
02:00pm -03:00pm	Assessment: External Quality Assessment (Module 9)	Nandala M
03:00pm – 04:00pm	Assessment: Norms and Accreditation(Module 10)	Dfendu M
04:00pm – 04:30pm	Evaluation	
04:00pm 04:30pm	**Tea and Departure**	
Day Five :		
08:00am – 08:30am	Registration	Secretariat
08:30am – 08:40am	Recap of the Previous Day Activities	Dfendu M
08:40am – 09:40am	Personnel (Module 11))	Nandala M
09:40am – 10:40am	Customer Service (Module 12)	Dfendu M
10:40am – 11:10am	**Break**	
11:10am – 12:40pm	Occurrence Management (Module 13)	Nandala M
12:40pm – 02:00pm	**Lunch**	
02:00pm – 03:30pm	Process Improvement (Module 14)	Lali ZW
03:30pm – 04:00pm	Evaluation	
04:00pm – 04:30pm	**Tea and Departure**	
Day Six		
08:00am – 08:30am	Registration	Secretariat
08:30am – 08:40am	Recap of the Previous Day Activities	Nandala M
08;40am - 10:00am	Documents and Records (Module 15)	Dfendu M
10:00am – 10:30am	**Break**	
10:30am – 11:40am	Information Management(Module 16)	Nandala M
11:40am – 12:50 am	Organization (Module 17)	Lali ZW
01:00pm – 02:00pm	**Lunch**	
02:00pm – 03:30pm	Quality Improvement Projects	Lali ZW
03:30pm – 4:00pm	Discussion of QIPs	Lali ZW
4:00pm -5:00pm	Closure and Departure of participants	Marha Pedun