



Timely Accurate Diagonostics for a TB-Free Africa

LABORATORY INFORMATION MANAGEMENT TRAINING

Module 6 - LIMS Maintenance

SUPRANATIONAL REFERENCE LABORATORY, UGANDA

Module Objectives

At the end of this module, participants will be able to:

- Understand the need for a laboratory information management system maintenance program
- Explain procedure for maintaining a laboratory information management system



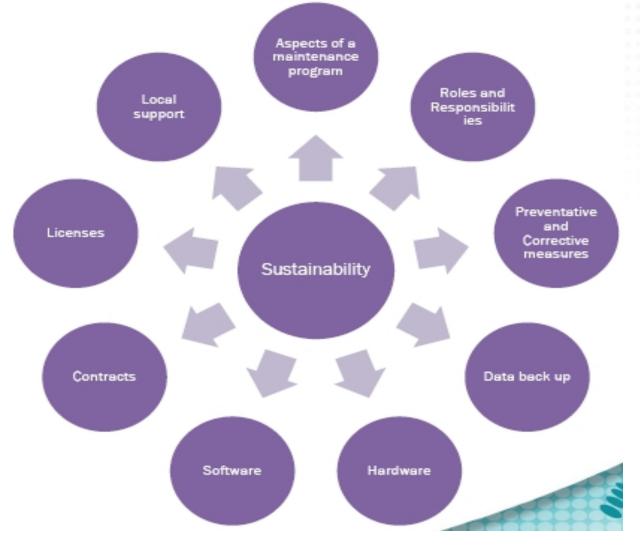


Rationale for LIMS Maintenance

**Once roll-out is "complete" and the system is in use, regular training, updating of the system, supervision and monitoring are needed to make sure the system remains fit for the purpose



Rationale for LIMS Maintenance



Short Term Aspects of a Maintenance Program

- *Ensure LIS is fully operational & stable
- Conduct routine preventive maintenance
- Define operational budget for consumables
- Continued user training





Long Term Aspects of a Maintenance **Program**

- *Enhancements to the deployed system, e.g. adding specimen storage module
- * Expansion to other sites or departments
- Tool Daily Operations Report useful tool



Long Term Aspects of a Maintenance **Program**

- **Standard Operating Procedures (SOPs) -key for effective maintenance
- The Ensure program can sustain post implementation and post government partner support, i.e., maintained by MOH





Maintenance Roles & Responsibilities

Group	Responsibility
Sponsor & Working Groups	Ensure approach is thought through and mechanisms/framework are in place re fiscal budget and allocation
LIS Task Force	Provides the recommendations and Standard Operating Procedures (SOPs) related to operations
Change Management & Control Committee	Specify and ensure change management SOPs
LIS Vendor	Provides ongoing maintenance, upgrade support/new software versions, user training
Hardware & System Software Vendor	Provide ongoing maintenance, upgrade software support and anything else team needs





Maintenance Roles & Responsibilities...

Group	Responsibility
Instrumentation Vendors	Ongoing maintenance, software upgrade support and anything else team needs, e.g., PCR ABI Fast 7500 upgrade
Infrastructure Vendors	Ongoing maintenance, upgrade software support
Lab Management	 Ensures adherence to relevant SOPs, budget planning and monitoring, human resources, capacity planning and tracking Provides information for yearly budget planning
Super Users	Participate in developing and implementing SOPs; fulfill first responder role to system emergency needs; Both LIS and lab technical expertise
Lab End-users	Follow applicable SOPs





Preventative Actions

- Thave current SOPs in place that define preventive maintenance (PM)
- Conduct routine PM
- *Have a manual back-up paper system in place if extended computer network failure



Test the manual back-up process



Corrective or Remedial Actions

- **Resolution of non-comformances or problems
- Part of the lab-wide QMS
- **May require a Corrective Action Form (CAF)





Data Back Up

- Scheduling back-up
- Separate SOP
- Manual or automated
- Separate location (Off-sit
- Data archiving policy
- * External hard drives





Hardware Maintenance



- **Servers, switches, cabling
- **Hardware maintenance / support fees
- Utility software license (antivirus, backup, productivity suite)





Hardware Maintenance..

- *Limited equipment lifespan
- ** Replacement hardware
- **Replacement of malfunctioning and out-of-warranty generators, UPS, voltage stabilizers





Hardware Maintenance..

- **Repair/maintenance or replacement of air conditioners
- **Replacement of end-of-life and out-of-warranty computing equipment
- Ttility bills, e.g., electricity, internet access
- The Preprinted stationery for paper-based systems





Software Maintenance

- LIMS Database patches
- *Incorporate LIMS new versions
- Basic software updates
- Specialized software update
- Operating systems
- Anti-virus software





Contracts

If there are any contracts related to LIMS implementation;



- **Sustainability support is required in initial Statement of Work (SOW) for LIMS
- *Define service level requirements up-front
- Annual service contract fixed rate with variable coverage, e.g., normal or after hours



- **Periodic review of contracts and request modifications
- Always negotiate contracts 1.0, Effective date: 01-Jun-2019



Exercise

- 1. Why is it important to implement a maintenance programme for any LIMS?
- 2. Discuss the key areas of consideration in a LIMS maintenance programme





References

- → GLI Quick Guide to TB Diagnostics Connectivity Solutions
- **WHO/ERS. Digital health for the End TB Strategy: an agenda for action 2015
- **WHO Guide on Electronic Recording and Reporting for Tuberculosis Care and Control
- THE REPUBLIC OF UGANDA
 MINISTRY OF IEALTII

WHO Laboratory Quality Management System
(LQMS) handbook
LIS/PP/006, Version 1.0, Effective date: 01-Jun-2019



Acknowledgments



















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