

Quick Start Guide to Laboratory Information System (LIS) Implementation

About LIS

An LIS supports the operation of laboratories, public health and clinical, by facilitating the collection, storage, analysis and reporting of data. The data may be paper-based, such as patient forms, or may be electronic, such as output from automated testing equipment. These laboratories provide critical quantitative information about the status of infection, immunology, and care and treatment status of patients.

Examples of LIS:

- A computer network connected to automated testing equipment, handling a large volume of specimens
- A standalone computer serving a small laboratory that uses manual equipment
- A paper-only, manual system
- A system with manual and computer components

Concepts in Designing and Implementing an LIS

- Laboratory operations
- Computer software design
- Systems analysis and logistics planning
- Financial analysis and planning

Steps for Designing and Implementing an LIS

1. Initiate strategic and financial planning
2. Develop a detailed project plan
3. Define LIS needs
4. Select a provider and solution that meet needs within budget
5. Develop or adapt an LIS
6. Train users
7. Implement the LIS
8. Support and maintain the LIS
9. Plan for evaluation, updates, or next phase

LIS Project Administration

LIS Working Group:

- Chief of Party or designee
- MOH Representative
- National Laboratory Director
- Information Technology Project Manager
- Financial Manager

LIS Project Team:

- LIS Project Manager
- Senior laboratory staff of the pilot laboratories
- Representative(s) of laboratory staff at bench level for testing services that will be included in the pilot application
- IT contractor representatives (once the application is selected and contract is approved)

Roles on an LIS Project

MOH representative

- Serve on LIS Working Group
- Plan and arrange system-provider visits
- Prepare and disseminate RFP
- Develop evaluation criteria for selecting provider and system
- Choose provider and system
- Provide input on budget and high-level needs
- Provide input on desired schedule, standard or RM development, length of pilot project, etc.

Chief of Party or designee

- Serve on Working Group
- Provide input on budget and high-level needs

Laboratory Director

- Serve on Working Group
- Provide input on budget and high-level needs
- Assign senior lab staff to serve on Project Team and provide detailed requirement information

Program Manager

- Serve on Working Group
- Provide input on high-level and detailed requirements

Project Manager

- Serve on Working Group
- Lead Project Team
- Establish and manage project plan
- Ensure that development or customization of LIS is on time and on budget

Senior Laboratory Staff

- Provide detailed requirement input to Project Team and IT Project Lead

IT Project Lead

- May serve on Project Team
- Establish installation plan (software project plan)
- Ensure that development or customization of LIS software meets high-level and detailed requirements
- Ensures that corrections and changes are made

IT Implementer

- Build or adapt LIS software to meet requirements
- Provide training to customers/users

Lab Staff

- End users of LIS
- Representatives may serve on Project Team
- Some test LIS before release
- Attend training in order to use LIS efficiently

Documents in the LIS Implementation Set

Guidebook

A tool to aid effective planning and oversight of an LIS Project. Provides an overview of the entire LIS implementation process. Describes the overall LIS development cycle, planning for an LIS, and effective management of LIS projects. Includes examples.

HLR

Identifies information system standards for objectively evaluating LIS applications; useful for selecting systems and providers. Describes in detail the functionalities of an LIS, i.e., what the system should be able to do and the currently accepted best practices for meeting industry standards.

Toolkit

A detailed manual for technical staff and a companion document to the HLR. It is valuable to the individuals who will be involved in LIS evaluation and in the selection of LIS providers and applications.

Software Provider Report

A continually updated list of commercially and publicly available laboratory software applications and their providers. Providers and applications are placed in one or more of four groups to aid users in finding appropriate providers:

- Fully capable network solutions
- Limited functionality solutions that meet core HLR
- Basic application solutions that have limited functionality and do not meet all core HLR
- Freeware (e.g., Epi Info) or software not designed specifically for LIS (e.g., MS Access) that can be programmed to meet LIS functionality (and does not meet all core HLR).

Contact Information

Comments, questions, and other correspondence regarding these documents may be sent to:

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Requests for information and assistance regarding the use of these documents by country HIV/AIDS programs or national laboratory programs may be sent to:

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Important Documents for Each Role

Role	Recommended Documents	Suggested Documents
MOH representative	Guidebook SW Provider Report	
Chief of Party or designee	Guidebook	
Laboratory Director	Guidebook HLR Toolkit SW Provider Report	
Program Manager	Guidebook SW Provider Report	HLR Toolkit
Project Manager	Guidebook HLR Toolkit	HLR Toolkit
Senior Laboratory Staff		Guidebook HLR Toolkit SW Provider Report
IT Project Lead	HLR Toolkit SW Provider Report	Guidebook SW Provider Report
IT Implementer		Guidebook
Lab Staff		Guidebook

Intended Audiences for the LIS Documents

Document	Primary Audience	Secondary Audience
Guidebook	Chief of Party MOH Representative Lab Director Program Manager Project Manager	All others
High Level Requirements Document (HLR)	IT Manager IT Project Lead Lab Director	Senior Lab Staff Program Manager Project Manager
Toolkit	Lab Director IT Manager IT Project Lead	Program Manager Project Manager Senior Lab Staff
Software Provider Report	MOH Representative Lab Director Program Manager IT Project Lead	IT Manager Senior Lab Staff