COVID-19 Lab Data Management in Limited Resource Setting

Utilizing PEPFAR Investment for Supporting COVID – 19 Pandemic

Support PHLIV for COVID-19 Pandemic
Current Landscape – COVID-19 Testing
From Laboratory Information System Perspective

TESTING SITES
Currently most of the COVID-19 Testing are performed in national laboratories located in capital or large cities.

TESTING POPULATION
Current testing population is high risk population and is mostly located at large cities. As disease is moving to community, target population will move to hard to reach areas.

DATA ANALYSIS
Data analysis is needed in real-time to identify hotspot and actions and heavily depends on lab TAT. Lab data is a great source for preliminary analysis.

TESTING METHOD
Most of the countries are currently using RT-PCR for COVID-19 testing.

LAB INFORMATION SYSTEM
LIS solution is important to assist and manage laboratory testing, supporting workflow, and return of test results in real time by reducing TAT.
Utilizing VLSM for COVID-19

How PEPFAR tool can support COVID-19 Testing

**INTEROPERABILITY**
This open source solution can be integrated with in-country data system such as DHIS2.

**PEPFAR INVESTMENT**
PEPFAR has funded development and implementation of laboratory information system (Viral Load Sample Management system - VLSM) for VL and EID testing. VLSM is capable of managing laboratory workflow, tracking and reporting test results electronically, and reducing turnaround time. This tool is deployed in more than 25 laboratories in limited resource setting.

**UTLIZING PEPFAR RESOURCE FOR COVID-19**
VLSM’s new configuration supports COVID-19 testing. This new release support in sample tracking, lab workflow management, and electronic result reporting for COVID-19 tests.

**NEXT STEP – DASHBOARD**
Dashboard functionality is extended for COVID-19. Instrument interface with high through ROCHE & Abbott is supported.
COVID-19 Laboratory Essentials
From Laboratory Information System Perspective

SAMPLE TRACKING
Monitor status from sample collection to return of test result. This functionality provides caregivers the ability to track and monitor test results.

MANAGE WORK FLOW
Manage and prioritize test requests, workflow management, result verification for lab technicians. This functionality supports smooth Lab operation.

RESULT REPORTING
Functionality to provide test report using e-mail and SMS to reduce turnaround time to caregiver and taskforce. An important tool to result reporting.

DATA INTEGRATION
Integration of all test data from different labs. An important functionality for data analysis and action plan creation.

VLSM for COVID-19 Support above Functionalities
Supporting PLHIV for COVID-19
Linking patient data for VL, EID and COVID-19
VLSM Configuration for COVID-19

VLSM has two components – Core LIS and Sample Tracking & Dashboard

LABORATORY MODULE
Deployment of Core LIS module

LABORATORY MODULE WITH SAMPLE TRACKING
Deployment Core LIS and Sample Tracking to support complete workflow.
VLSM Laboratory Module

Free and Open Source software, easy to train, deploy with changing requirements.

Streamline lab workflow, eliminate/reduce paperwork and improve lab efficiency.

Maintain and track historical patient data

Improve overall TAT. Return results by e-mail and paper format.

Support for instrument interface and interoperability.
VLSM Sample Tracking Module

Tracking and Reporting Samples

- Provide real-time information on collected sample and test result.
- Interoperate with other national system.
- Support dashboard for COVID-19 and other supported tests.
- Provide reports/snapshot for all testing performed in country.
Online Demo

Source Code

Further Reference
Finding Additional Information

Available at SLMTA Web Site
Additional Information and demo is available at: covid19.slmta.org

Available at GitHub
Download latest source code from: https://github.com/deforay/vlsm/releases. Detailed instructions for setup can be found in README section at the bottom of the page.
THANK YOU
VLSM – COVID-19

Screens and Functionalities

Walkthrough
Next few slides provide a quick overview of VLSM – COVID-19 Module
VLSM – COVID-19

Screens and Functionalities

- Login
- Add Test Request
- Manage Test Batches
- Result PDF
VLSM – COVID-19

Screens and Functionalities

- Results can be shared via email directly from laboratory to the Health Center
- Results can be downloaded in PDF format and printed
- SMS Functionality can be integrated, if needed.
VLSM – COVID-19

Instrument Interface

Automatically pull results from testing machines once the test is performed

◎ VLSM supports Roche Cobas and Abbott high throughput molecular machine.
◎ Removes the manual steps of copying and importing file generated from testing machine
VLSM – COVID-19

Screens and Functionalities

SAMPLE TRACKING & DASHBOARD
Provide understanding of Lab activities.
REMOTE TEST ORDER
Web based application used by collection sites to record test requests.

MOVING REQUEST TO LAB
Test request are automatically synced to the VLSM installed in labs. This reduces manual entry and reduce workload and transcription error.

GETTING RESULT BACK
Collect status of test and results from lab and available at online portal for download and track.

LINKING DATA TOGETHER
Integrate all test requests and test results, this make easier to view and analyze all data and assist in making plan.

INTEROPERABILITY
Lab DataMart provide an easy platform to integrate with national system and support interoperability.
VLSM – COVID-19

Screens and Functionalities

- Online Request
- Online Result
- Tracking Sample
- Print Result
VLSM – COVID-19
Dashboard – Testing Overview

Sample Status

Sample Rejection
Further Reference
Finding Additional Information

**AVAILABLE AT SLMTA WEB SITE**
Additional Information and demo is available at: [covid19.slmta.org](https://covid19.slmta.org)

**AVAILABLE AT GITHUB**
Download latest source code from: [https://github.com/deforay/vlsm/releases](https://github.com/deforay/vlsm/releases). Detailed instructions for setup can be found in README section at the bottom of the page.
THANK YOU