DATA MANAGEMENT AND CONNECTIVITY
HIV, TB, MALARIA, COVID-19
UGANDA EXPERIENCE
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Presentation Outline

1. What is Data Management
2. Why should we care about Data Management
3. Uganda’s Experience; Conventional and POC
4. Challenges
5. Suggestions
6. Conclusion
**What is Data Management**

*Data management* is the process of collecting, storing, protecting, analyzing and using data securely, efficiently, and cost-effectively.

*Data* allows *health systems* to create holistic views of patients, personalize treatments, improve communication, and enhance *health* outcomes.
Why Data Management

• No Data and Technology Equals Walking to a destination blind folded
• Improved and faster Patient Care
• Informed Data Driven Decision Making
• Research
• Simplifies reporting, monitoring and evaluation
Why Data Management

Transform Records

Paper and or Electronic
Why Laboratory Information Management Systems

• Automation of lab processes
• Timely Results
• Trace sample, machine, reagents, personnel and results involved in the analysis
• Collect, archive and use lab data to make informed decisions
Which problem is LIMS solving?

- Too many records and entries leading to Manual transcription errors
- Long Turn around time and reporting of patient results therefore delayed care of patients
- Referral samples are not traceable, manual accountabilities and reports are hectic
- Several systems but scarcity of data for urgent decisions

Systems in place to solve the problem

- HIV /HEPB Viral load LIMS
- Early Infant Diagnosis HIV/SCD
- Africa Laboratory Information System (ALIS)
- Electronic Results Dispatch module (eRD) for real time results access
- Results and Sample Tracking system (ResTrack)
- Inventory Management System (IMS)
- Facility commodity ordering system
- Interoperability (HIE)
- COVID-19 Results Dispatch
Uganda’s Experience; Conventional and POC

**Inhouse systems**
- Viral Load
- EID/SCD
- Hepatitis
- Activity Module
- ALIS-MicroB
- Inventory mgt System
- Cytotflex Mgt System
- Archival System
- Hub Operations Module
- ALIS-HPV
- Customer Relations Module
- Clocking System

**Dashboards and public systems**
- Viral Load dashboard
- Eid dashboard
- Hub Operations Module
- Facility Inventory System
- CPHL Website
- QA Dashboard

**Flow Chart**
Receive → Accession → Process
Conventional – LIMS and Dashboards-Remote

GeneXpert located at Facility interfaced with the ALIS

Real time
National Dashboard

GeneXpert located at Facility interfaced with the ALIS

Use of internet to allow real time transmission of Data
To promote Real time reporting and Data driven decision making
Convectional: Electronic Results Dispatch

Warr HCIV

Jinja RRH

Matany Hospital

Central Public Health Laboratories Data systems

Kabale RRH

Rushere HCIV
Connectivity: provide visibility to monitor and manage the performance of the machines, and report results at central location.
Modem

A USB *modem* provides you with dial-up capabilities so you can *use* a phone line to connect to the *Internet*. Each *Internet* Service Provider (ISP) has its own number where you dial up and connect to the service's servers.

These are mobile and in most cases assigned to only one user at a time.
Very Small Aperture Terminal (VSAT) uses a very small dish capable of receiving and sending satellite signals. Can be designed to use both broadcast and interactive applications whether data, voice or video
Fiber-optic communication is transmitting information by sending pulses of light through an optical fiber.

Fibre optical networks offer increased bandwidth as well as provide higher capacity and reduce overall costs.

Ongoing implementation of for last mile connectivity to health facilities by NITA-U Under MoICT.
On going Projects

- Data warehouse for Laboratory Data (DHIS2 Connector)
- Health Information Exchange for LIS and EMRs
- Internet connectivity plan
Challenges

- Change Management from paper to electronic
- Adoption and acceptability
- Internet connectivity
- Training plan
- HR Gaps (Lab tech vs Data Officers)
- Software updates with changes in processes
- Hardware gaps
Suggestions and way forward

- Embrace, plan and use Technology
- Standardize and Utilize Data
- Incorporate Technology
- Standardize Data
- Seamless information exchange
- Protect sensitive data
A detailed project plan ("who, what, where, and when") to improve efficiency and effectiveness of the process.

Define Business processes

Define

1. Strategic and financial planning

2. Define system needs and select a solution to meet those needs within budget

3. Develop or adapt the electronic system, train users and implement

4. Supporting, maintaining, and updating the system.
Thank you!