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Data Use Acceleration and Learning (DUAL)

Sharing what works (and what doesn't) to achieve digital transformation for data use

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DATA USE ACCELERATION AND LEARNING

PATH

COOPER/SMITH

Advancing digital transformation for data use

Under DUAL, PATH and Cooper/Smith are working to sustain gains in digital transformation and data use.

DUAL is advocating for the inclusion of country learnings on digital tools and approaches within global policies, future interventions, and funding mechanisms.

Photo: PATH/Gabe Bienczycki

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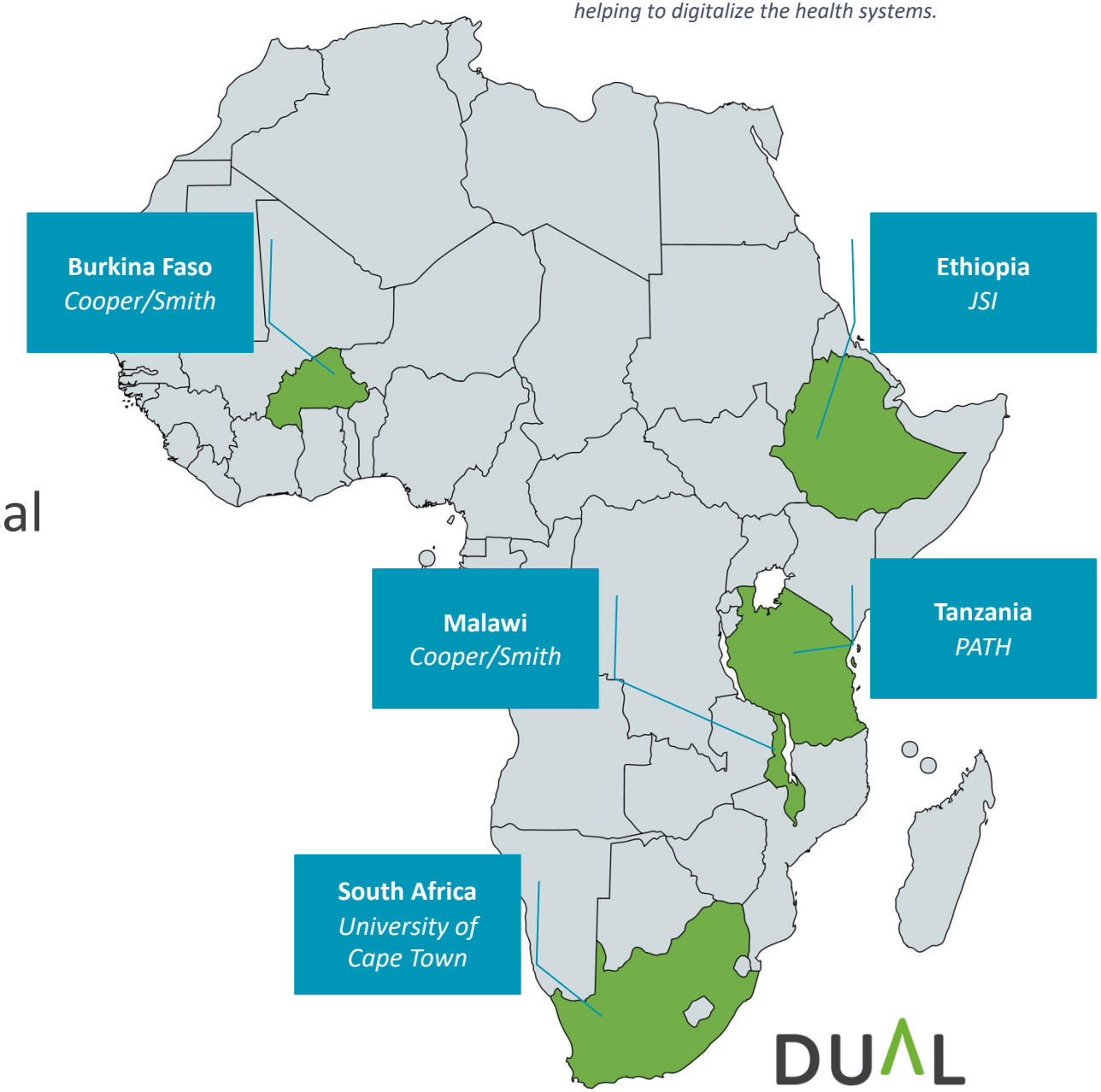
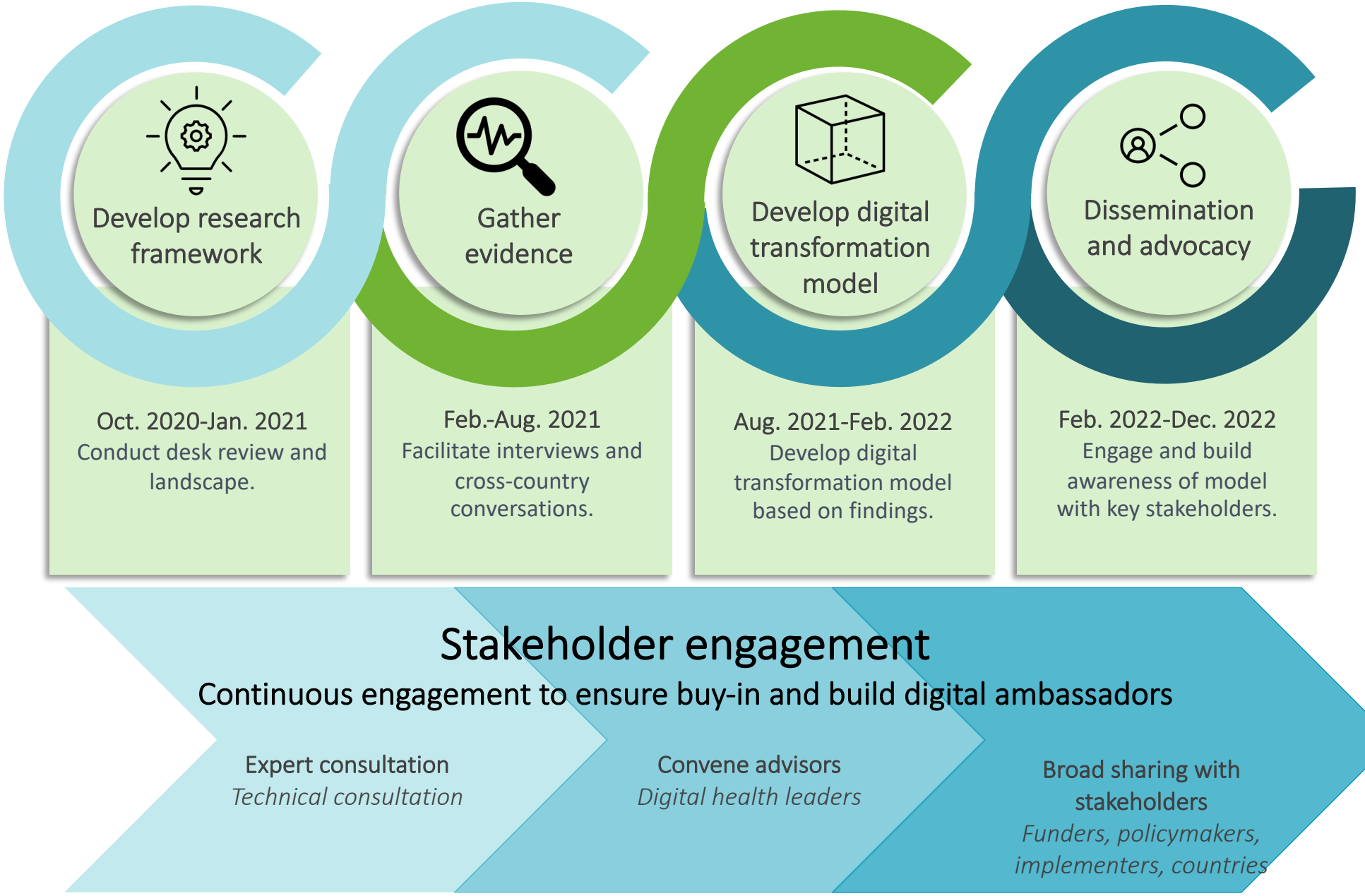
Catalyzing digital transformation

DUAL collected learnings from five focal countries and packaged them into a model for digital transformation.

Map depicts 5 focal countries and the partners helping to digitalize the health systems.





Change objectives

Uptake of digital transformation model.

Greater coordination between governments, investors, and implementers.

Increased supportive normative guidance for digital transformation for data use.

Catalyzing digital transformation

DUAL has translated country learnings into a toolkit for digital transformation for data use and a package of actionable advocacy materials to inspire change among key audiences.

Implementers
Uptake of the digital transformation model in other countries.

Countries
Greater alignment between digital initiatives and integration of learnings within national strategies.

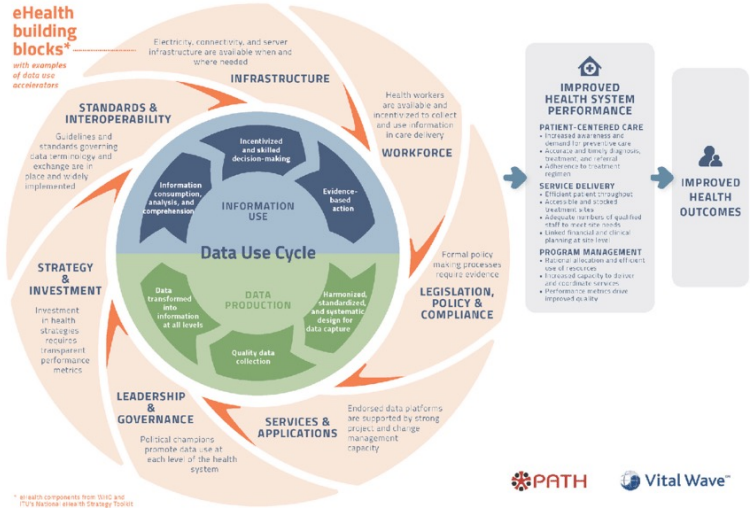
Funders
Greater coordination between investments and with countries' national strategies.

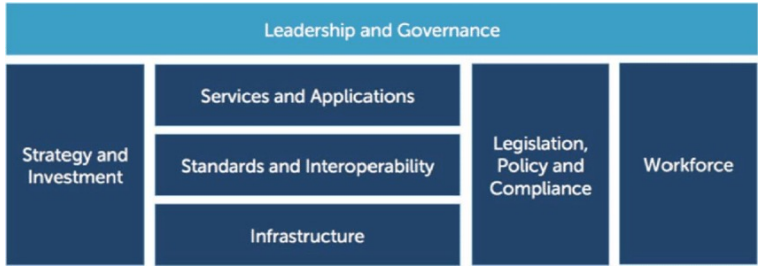
Policymakers
Increased normative guidance around best practices in digital transformation and data use.

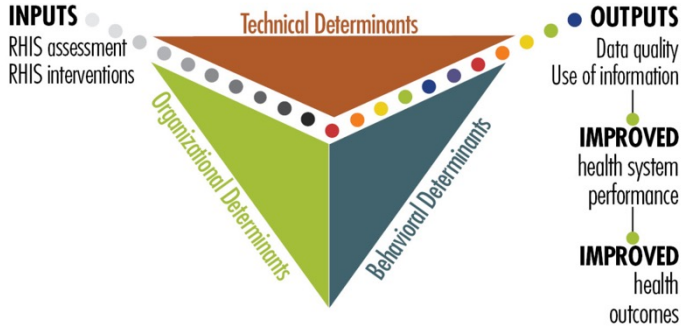
Photo: PATH/Trevor Snapp

Existing models

DUALs work built upon existing normative guidance and models.







A collaborative research approach

Step 1	Conducted desk reviews and developed a research framework & methodology.
Step 2	Carried out key informant interviews and cross-country conversations.
Step 3	Held synthesis workshop to validate findings.
Step 4	Developed digital transformation model.
Step 5	Sharing country learnings with digital health stakeholders.

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Research methodology

Phase 1 *(completed)*
A comprehensive document review helped to determine key themes within the current evidence base from our five focal countries.

Phase 2 *(completed)*
A qualitative assessment included KIIs, online surveys, and a series of webinars and virtual discussions with key representatives of our country audiences.

Phase 3 *(completed)*
An analysis of all five countries' data helped to select themes for cross-country conversations after which the findings were compiled synthesis process. The DUAL model was developed.

Where are we now?

Engaging and building awareness of model with key stakeholders.

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A deeper dive

- 72 documents reviewed.
- 33 key informant interviews.
- 4 in-country conversations, 21 countries engaged across Africa, South America and Asia
- 1 synthesis workshop.
- 1 digital transformation model, 10 critical elements, 2 new elements

DUAL implementation framework

Leadership and governance

Committed leadership/champions

Multi-sector engagement

Governance structures

Policy

Priority policy areas

Security standards, privacy and confidentiality in data sharing, and related legal frameworks

Strategy

Cross-sectoral consensus building

National digital health strategy development

Socialization and implementation

Investment

Prioritization and costing of recommendations

National digital health investment roadmap

Country leadership of investment

Systems architecture

Building country architect capacity

Standards and interoperability

Enterprise architecture

Services and applications

Applications

Technical support for systems and users

Workforce

Data and digital literacy/capacity

Motivation and incentives

Infrastructure

Physical infrastructure and system Maintenance

Energy/electricity

Connectivity

Data use ecosystem

Data collection/management
Feedback on data and data use
Data quality
Accessibility to relevant users
Incentivized and skilled decision-making
Value of data

Change management

Defining as-is and to-be state
Identifying and supporting champions
Facilitating feedback loops

The DUAL model

The DUAL model identifies ten core elements of a comprehensive approach to transforming a country's health data systems and digital tools to advance data use.

It builds on previous models and identifies two new elements: data use ecosystems and change management.

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Lessons learned

Leadership and governance

- Adopt approaches that fit project goals.
- Remain flexible to shifts in government.

Policy

- Build on existing health policies and standards.
- Put in place governance structures.

Strategy

- Develop clear, long-term, and flexible plans and solutions.

Investment

- Ensure the alignment of investments.
- Develop funding oversight mechanisms.

Systems architecture

- Develop an implementation process and framework that uses “practical implementation” approaches.

Services and applications

- Engage stakeholders within the health sector and beyond.

Workforce

- Increase data use at “lower levels,” including access to data and the skills to interpret data for daily use.

Infrastructure

- Rather than building for a “digital ideal,” consider ways to work with what is currently in place.

Data use ecosystem

- Strengthen data use culture at all levels.
- Take a holistic approach.

Change management

- Consider political readiness and buy-in among senior leadership to drive change and increase uptake.

Cross-country findings

- **Engage stakeholders and develop digital health champions, including coordinating and aligning stakeholders.**
- **Establish clear, strong governance structures appropriate to the country's context and needs.**
- **Take user-centered design approaches, such as those used in human-centered design, to digital health tools and systems.**
- **Build workforce capacity and improve training of the health workforce.**
- **Ensure data are collected, shared, and monitored across systems**
- **Align funding**

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PROJECT OVERVIEW

Together with the Ministry of Health (MOH) of Malawi and with support from the Bill & Melinda Gates Foundation, Cooper/Smith and Malawi-based Compelling Works are reducing the turnaround time for HIV viral load results. We are doing this by piloting an open-source digital, SMS & USSD based platform.

The platform uses mobile phones to deliver results directly to patients, allowing them to take an active role in their own care. In addition, health workers at facilities providing HIV services will also have their patients results sent directly to their mobile phones. This open-source product can be used with a basic feature phones or smartphone.

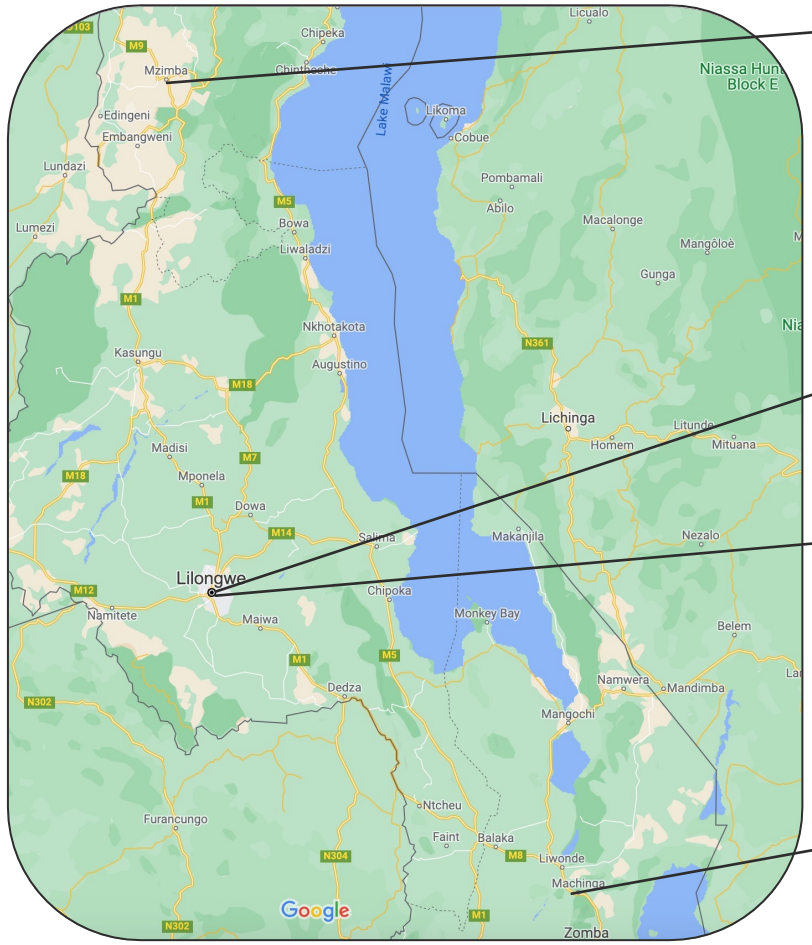
Additional information available here: About VLRR

BACKGROUND

- Huge number of samples processed in off-site labs
- Significant delays in transportation, processing, and result transmission
- Long ART clinic visit intervals: the patient may not receive results for months
- Very sensitive information

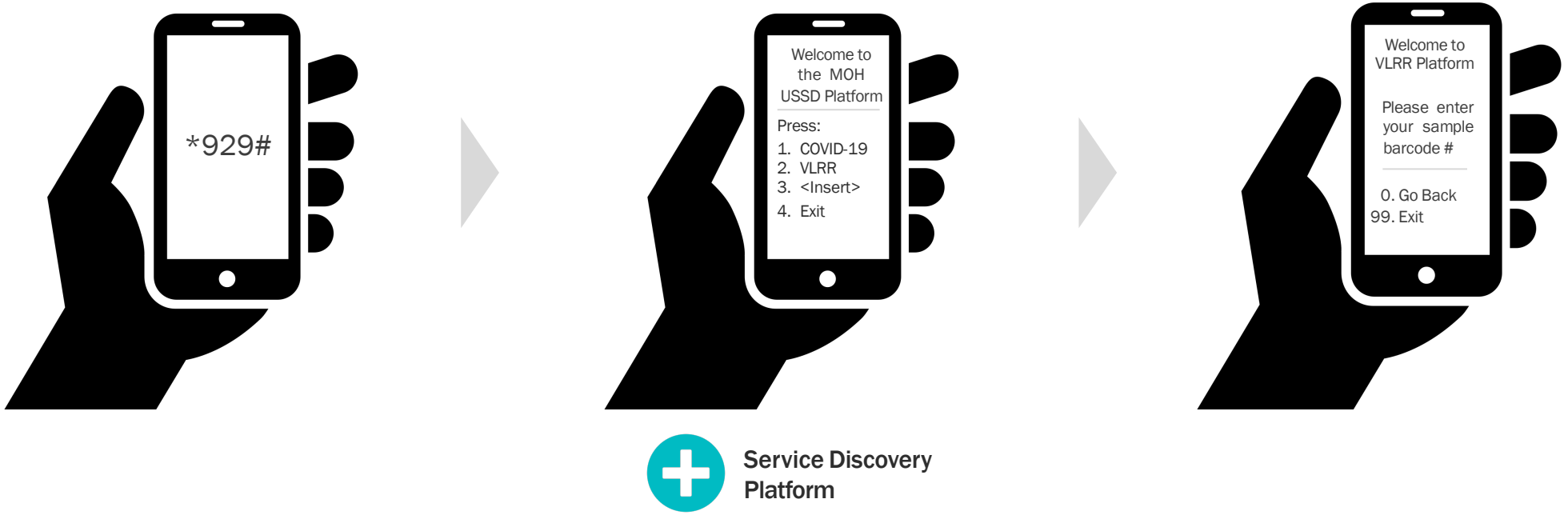
CONFIRMED PILOT SITES

4 pilot sites in rural and urban health facilities across 3 districts



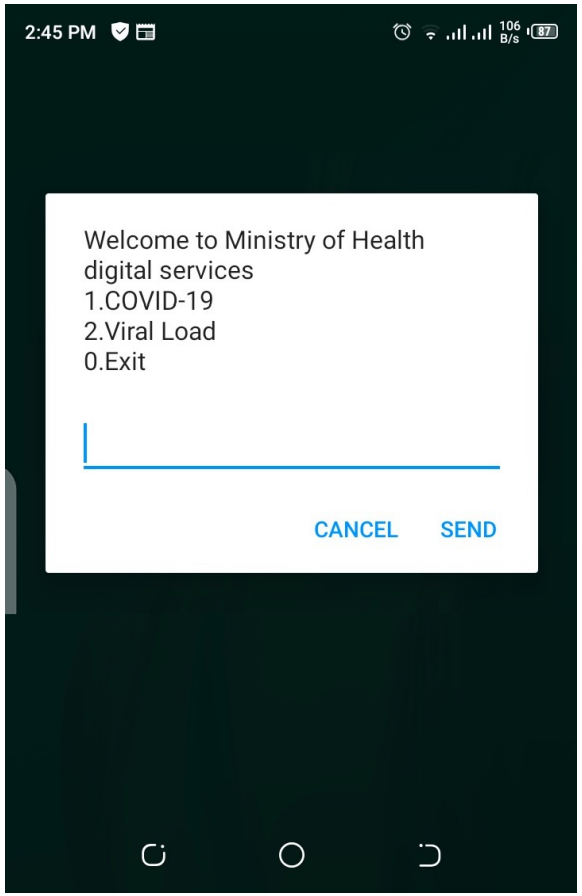
1. Embangweni Mission Hospital
   Rural | Mzimba | Northern
2. Mitundu Hospital
   Rural | Lilongwe | Central
3. Bwaila Hospital
   Urban | Lilongwe | Central
4. Nainunje Health Centre
   Rural | Machinga | Southern

SERVICE DISCOVERY WORKFLOW

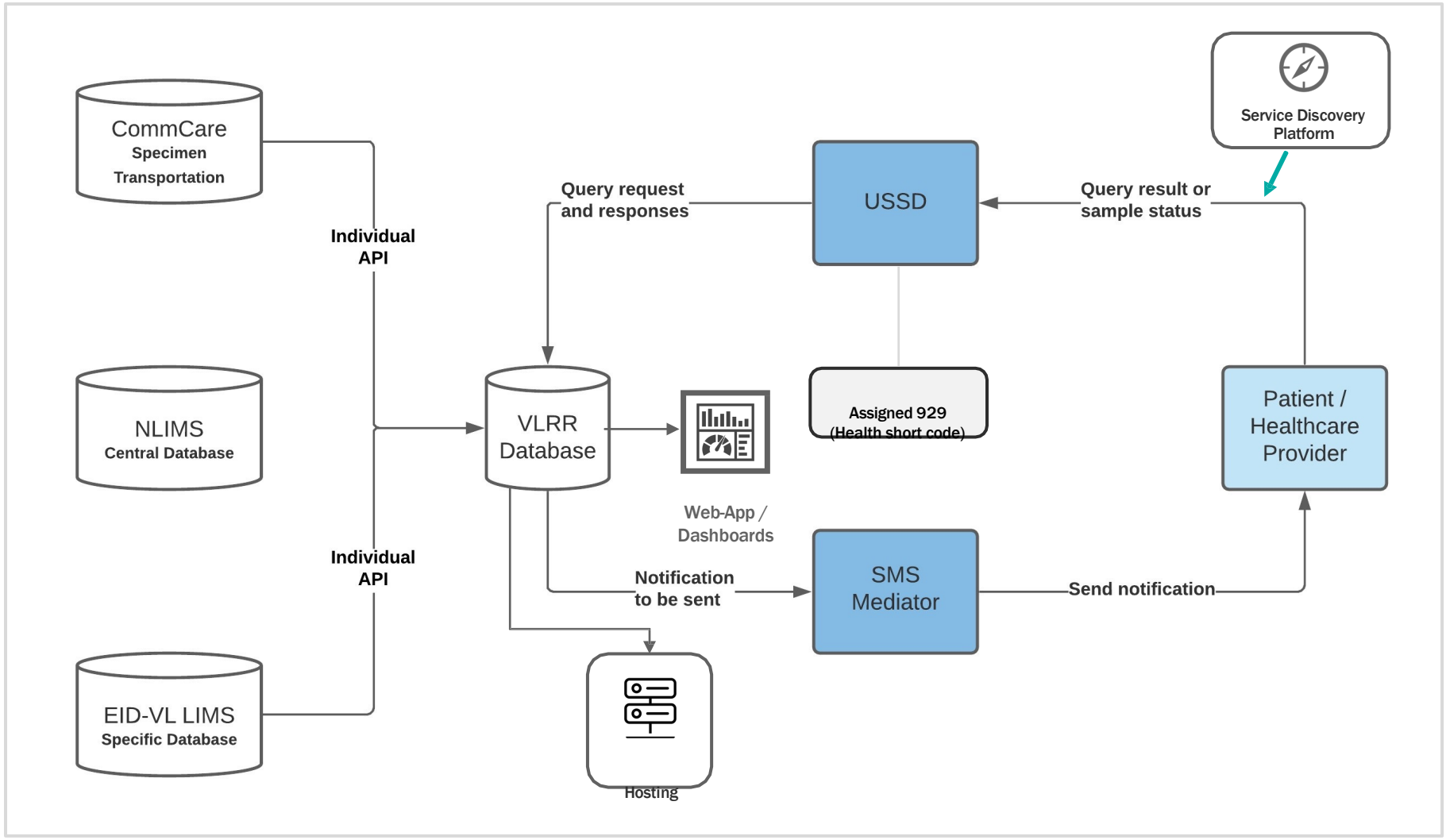


Service Discovery platform is live and can be accessed by dialing *929# using TNM or Airtel

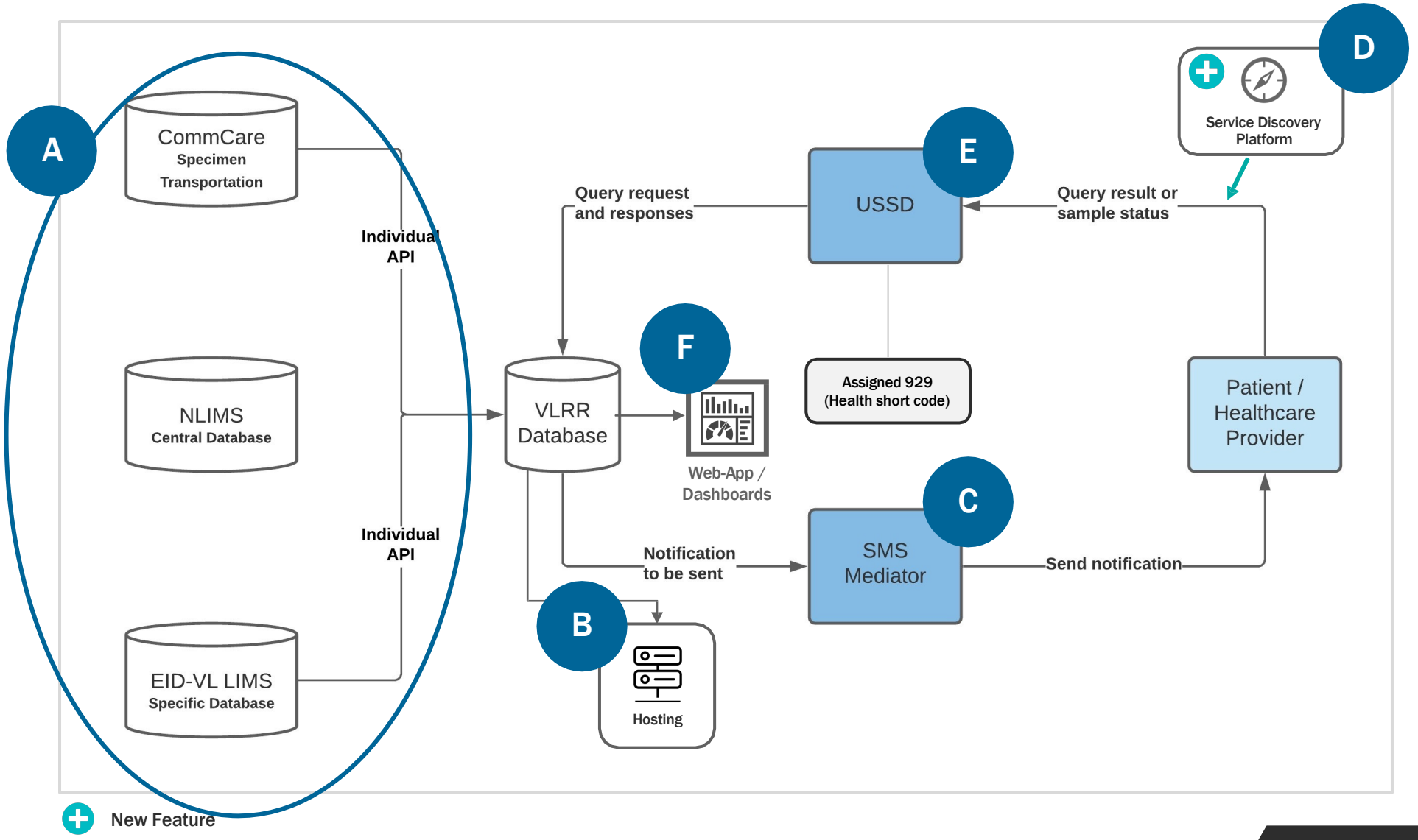
VLRR - SERVICE DISCOVERY SCREENSHOT



DEVELOPMENT WORKFLOW



DEVELOPMENT WORKFLOW



DEVELOPMENT WORKFLOW - EXPLAINED

A **Database Connections** - Connected directly to EID/VL LIMS and Specimen Transportation until these databases are integrated into NLIMS. At this point, a connection to NLIMS will be established

B **Hosting** - For the pilot, the VLRR database will be hosted at Skyband with approval from DHA until the renovations at CHSU have been completed. At this point, the application will be transferred there.

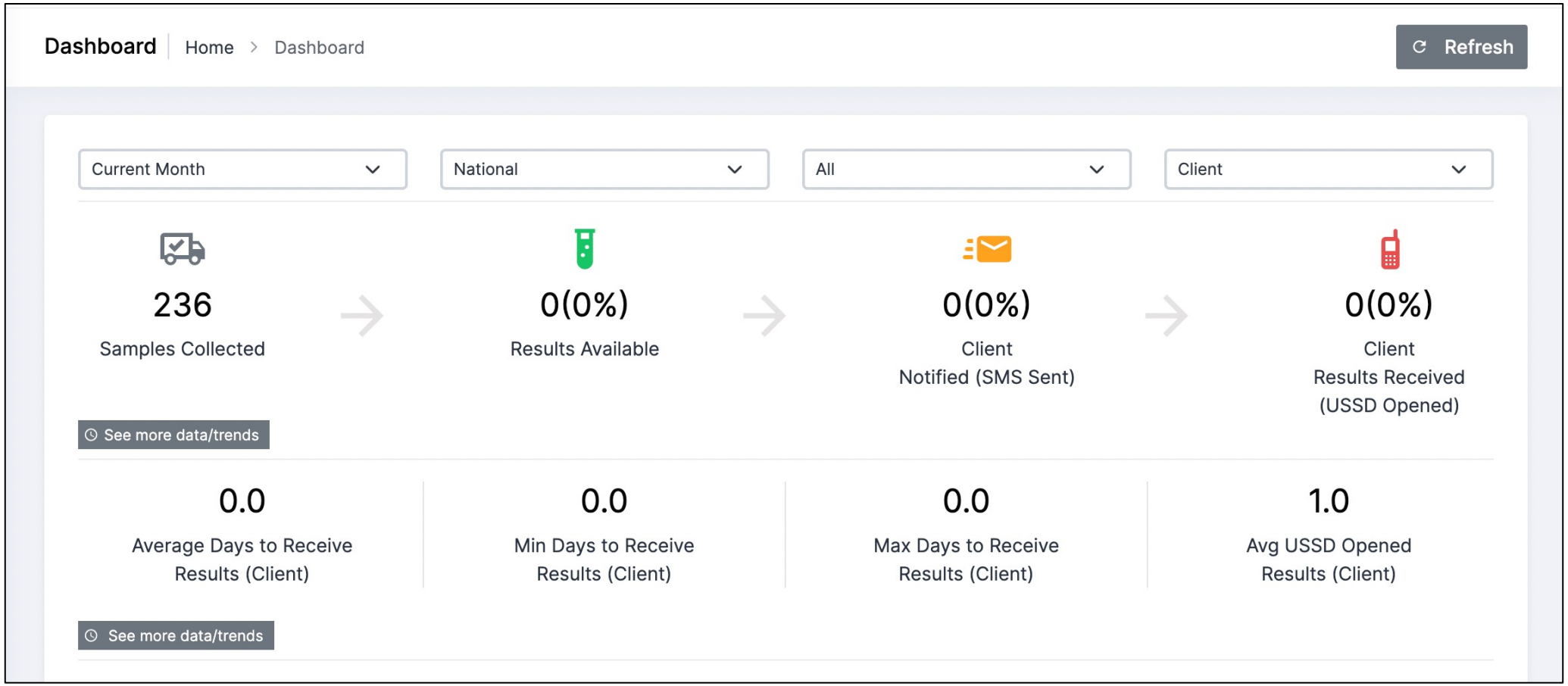
C **SMS Gateway** - An SMS gateway has been established for both Airtel and TNM to notify patients and guardians of EID patients that results are available

D **Service Discovery Platform** - A USSD landing platform was established based on MOH recommendation for all health related USSD projects to use the 929 short code (see next slide for example)

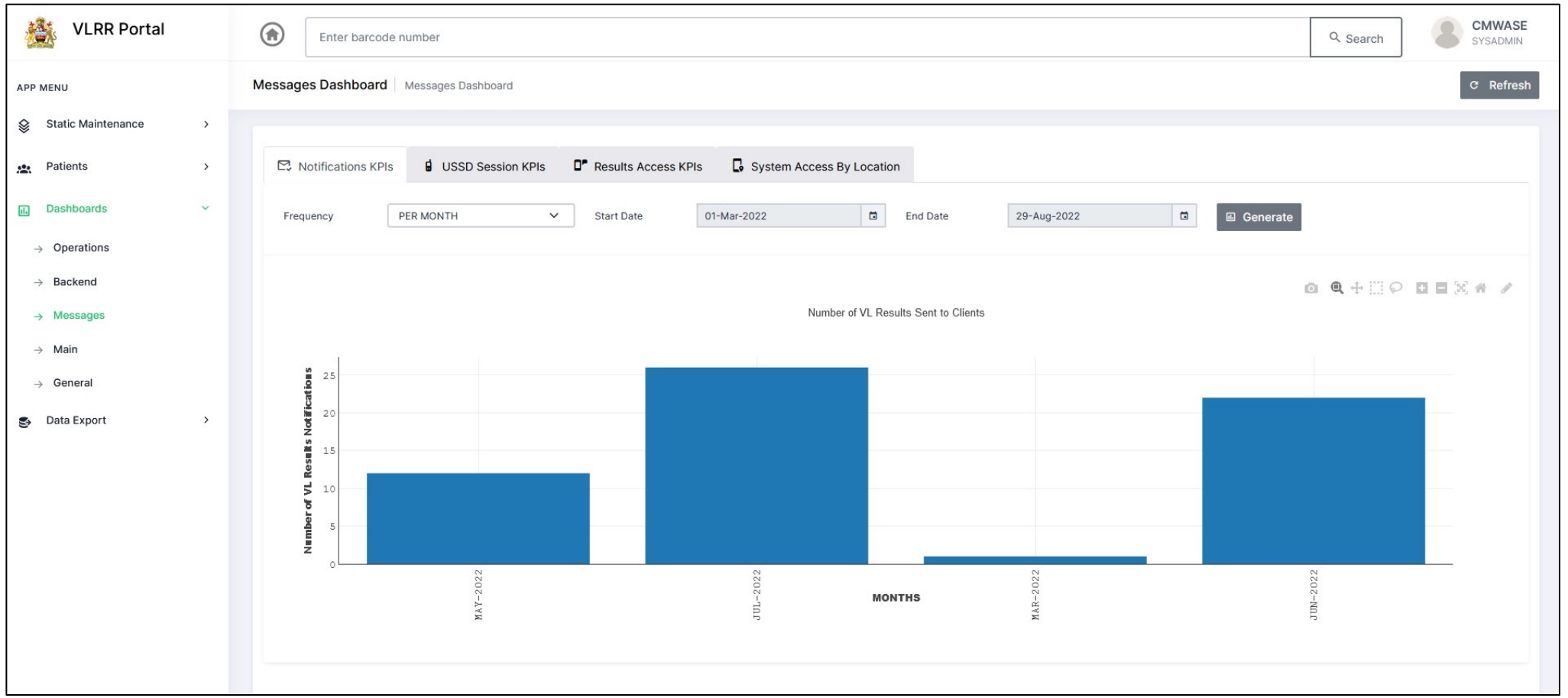
E **USSD** - The USSD platforms has 3 cadres; Healthcare Super User, Healthcare Provider and Patient. It allows for samples to be registered, results to be received and user management at facility level

F **Web Dashboards** - A front end M&E dashboard was established to dynamically understand if the application is working as intended and a back-end administration dashboard to aid with user management

VLRR - MAIN DASHBOARD SCREENSHOT

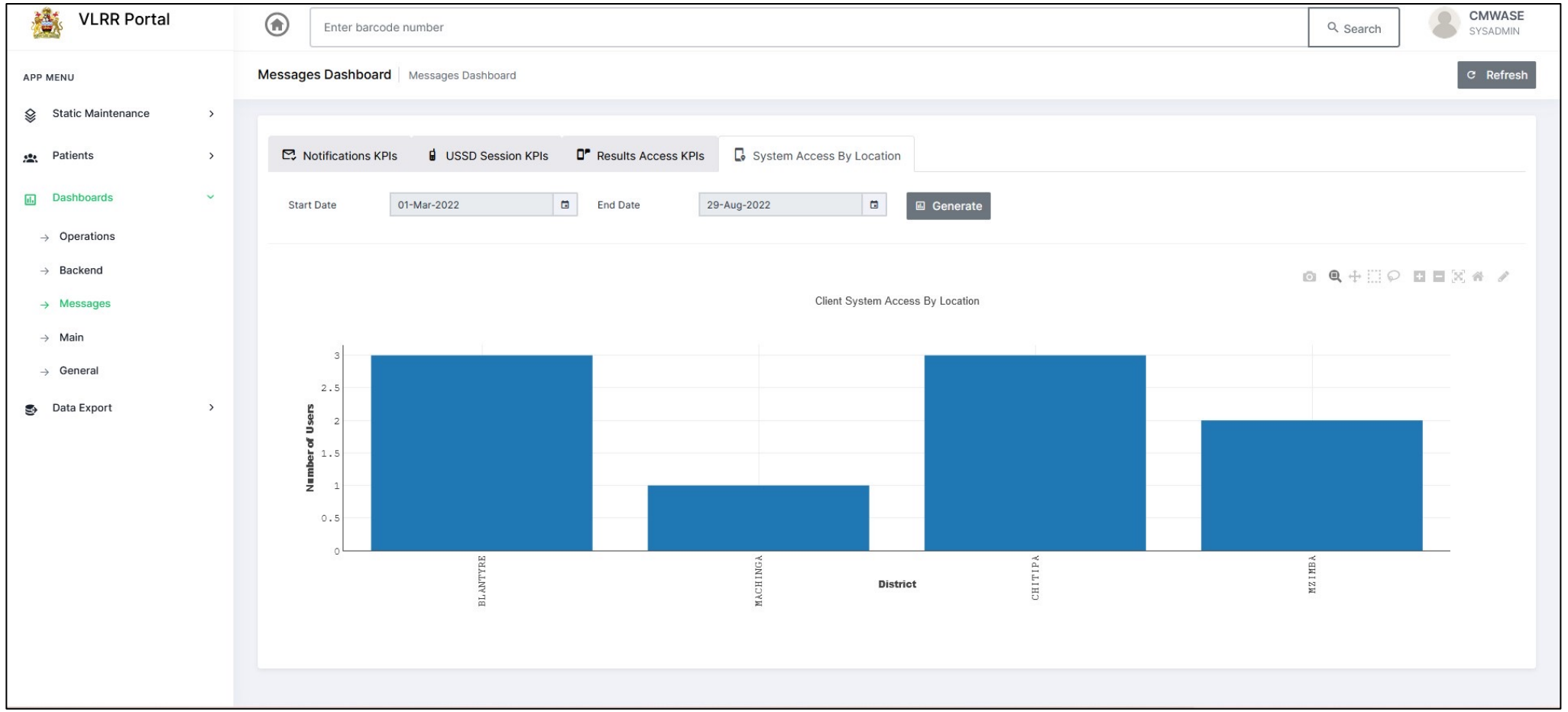


VLRR - MESSAGES DASHBOARD SCREENSHOT



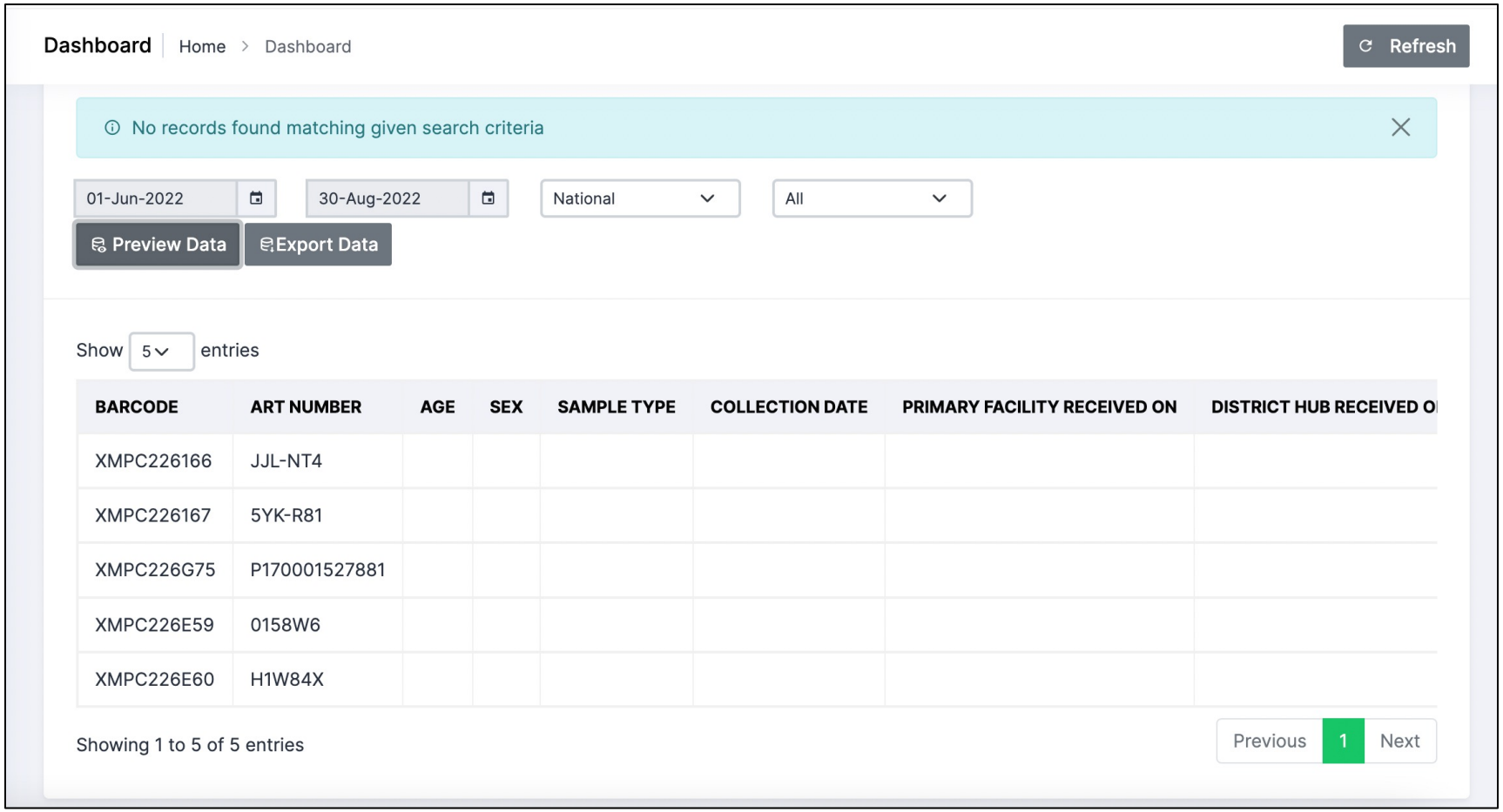
The Messages Dashboard displays the number of VL results sent to clients by varying frequencies

VLRR - MESSAGES DASHBOARD SCREENSHOT



The Messages Dashboard also displays where clients are accessing the VLRR system.

VLRR - DATA EXPORT SCREENSHOT



SITE SUPERVISION

Supportive supervision

1. Conducted between 11th – 15th July 2022 by DHA and C/S staff
2. Focus group discussions with HCPs on progress, challenges, and solutions
3. Review of VL registers

SITE SUPERVISION

	Key Findings	
Facility	**Progress**	**Challenges**
Nainunje	▪ Registered 20 of 66 (30%) eligible clients ▪ Received results for 12 of the 20 (60%) registered samples ▪ Use own phones to register clients, receive results, and conduct community tracing	▪ Low access to phones by clients ▪ Low literacy levels among clients ▪ Poor phone network (USSD unstable at times) • Stock out of VL testing reagents
Embangweni	▪ Registered 38 of 259 (14.7%) eligible clients ▪ Received results for 12 of 38 (32%) ▪ Clients received results on their phones	▪ Lack of sample barcodes in plasma kits ▪ Low access to phones by clients (Estimated 70% access) ▪ Stock out of VL testing reagents
Bwaila	▪ Registered 140 samples in May ▪ Registered 184 samples in June and July	▪ No results received yet ▪ Clients face difficulty in entering sample barcodes (Results checking takes too long) ▪ Error “phone number does not exist” or “ART number does not exist”
Mitundu	▪ Only 12 samples (1.6%) were registered out of 154 eligible samples	▪ Understaffing due to travel to ART training ▪ Unreliable phone network ▪ Low access to phones by clients (Estimated 20-30% access)

KEY RECOMMENDATIONS

1. Migrate from the use of sample barcodes to personal identification numbers (PINs) for clients
2. Enable healthcare providers to use their phone numbers to register as many clients as possible
3. Allow clients without phones to use the phone number of their support group lead (Community Based Organization)
4. Explore audio messages for those who cannot read SMS
5. Add “Tumbuka” as a language option for people in the Northern region
6. Explore the use of scannable barcodes to register clients VLRR (Bwaila proposed this due to high sample volumes)
7. Encourage healthcare providers to use health talks as an opportunity to encourage clients to sign up for VLRR
8. Provide posters/job aides that healthcare providers can use to walk through client's process of checking results
9. Mentor health facilities to mark in viral load registers samples that have been registered in VLRR and to indicate results received electronically

Cross-cutting call to action

- **To engage stakeholders and improve leadership:** country governments can form technical working groups across sectors and cultivate digital health champions at all levels of the health system.
- **To improve design of health systems:** implementers can apply user-centered design approaches when developing digital health systems and funders can invest in global goods, standards, and interoperable systems instead of standalone systems.
- **To build health workforce capacity for using digital tools and systems and the data they produce:** country governments and implementers can build the capacity of health workers at all levels through training, professional development, mentoring, and other proven practices; and, funders can invest in these capacity-building efforts.
- **To strengthen governance structures:** country governments can establish governance bodies to establish, manage, and enforce digital health policies, guidelines, and standards and implementers can ensure that digital health activities are government driven and work within existing governance structures.
- **To increase evidence-based planning:** policymakers can use evidence to inform new and revised policies and guidance for digital health and funders can leverage data, assessments, and system evaluations to inform investment decisions;
- **To align and sustain funding efforts:** country governments can develop investment roadmaps and long-term funding streams and funders can ensure investments align with countries' visions and strategies.

Photo: PATH/Trevor Snapp

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