

# ScanForm + Malawi HTS

## WHAT

Malawi HIV Testing Services (HTS) Pilot

## WHEN

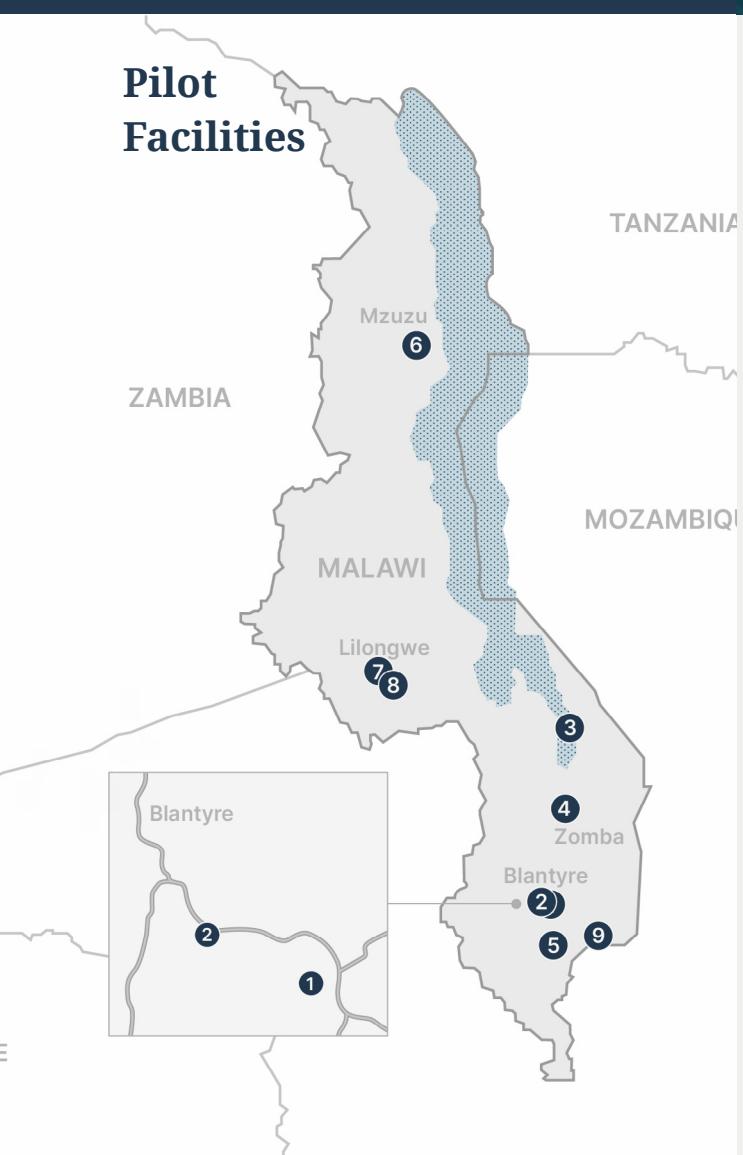
March - August 2021

## WHERE

9 facilities (shown on the map below)

## WHY

As Malawi continues to roll out new programs and consolidates HIV/AIDS epidemic control, the HTS registers require updates to generate timely and accurate summary statistics in accordance with the new 3-test algorithm.



## Background

- Beginning in 2017, a dedicated HTS touch-screen module has been introduced to large facilities in Malawi with permanent electronic medical records (EMR).
- Real-time use of the module by HTS providers was hindered because of infrastructure challenges (power and network outages), limited workstations and dozens of testing locations across facilities.
- The Department for HIV and AIDS (DHA) sought a way to convert client-level data from paper registers at all HIV testing sites into electronic summaries that are fully compliant with DHA and stakeholder reporting requirements, and are also EMR-compatible.
- To address these needs, the DHA uses ScanForm, a paper-based technology that digitizes handwritten data from a picture taken with a smartphone, and automates all downstream data processing.

# Challenges

## 1 HIV testing providers tally data by hand from multiple paper registers to create detailed facility reports.

- On average, facility reports took 2 days to complete each work month.
- Increased likelihood of human error from manual transcription and summarization.
- Compromised quality of client services.

## 2 As HIV programs and reporting requirements expanded in scope and complexity, the previous HTS register became insufficient.

- Disaggregated reporting by HTS modality required maintaining a copy of the original HTS register at each testing location.
  - Many facilities used >3 registers at once, leading to confusion and loss of data.
- Many program-relevant details were never accessible for analysis while client referral outcomes could not be captured due to space constraints.
- Designed for the 2-test algorithm which captured personal identifiable information (PII) for both the initial and confirmatory test results, if given consent.
  - Only 3% of initial tests are positive and proceed to confirmatory testing.



## 3 Malawi is transitioning to a 3-test algorithm for HTS.

- In 2019, the World Health Organization (WHO) recommended a 3-test algorithm when positivity among tested is <5%.
  - Malawi positivity rate has been <5% since 2016.
  - Up to 1,900 false positive test results may have been given out each year using the old testing algorithm.



## Why upgrade to ScanForm:



**All summary statistics are automatically generated, saving at least 10% of work time each month for HIV testing providers.**

- Locale-specific artificial intelligence to scan & interpret handwriting that continues to improve over time.
- In accordance with DHA reporting requirements, preliminary statistics are prepared weekly, with final monthly reports sent by the 2nd of the month.
- Increased speed, reliability, and accuracy of analytics and visualizations.



**Adaptable paper-based solution that is complementary and interoperable with EMRs.**

- Designed in collaboration with the DHA and includes all required indicators.
- PII is never digitally captured. Unique identifiers are generated to link records across registers.
- State-of-the-art cybersecurity for phones and data systems that are compliant with General Data Protection Regulation standards.
- Client-level electronic data allows routine field performance evaluation of the new 3-test algorithm, including client and provider characteristics associated with discrepant test outcomes.



**Unrivaled remote support supervision enabled by automatic alerts and monthly data quality reports.**

- *Data quality algorithm flagged inconsistent client records for review by national HTS program staff. Several inconsistencies were actually service delivery mistakes that prompted feedback to the provider and corrective action.*  
- M&E office testimonial

“

*This new [ScanForm] register made us serious and competent when filling it because you did not want to make mistakes. When the mistakes are uploaded, the query report is sent back to you so to avoid that, you just make sure that you crosscheck your work.*

# Impact



## 100% of HTS providers reported that data collection is faster with ScanForm.

- 95% of HTS providers rated the quality of technology as good or very good.
- *The ScanForm made our lives easy. We stopped producing a report which is the hectic part of our work.\**
- *I can say that I like ScanForm because [my] workload has been reduced.\**



## More robust data collection with improved data quality.

- 90% of ScanForm register pages were filled and scanned without any issues flagged for human verification.



## More efficient use of paper.

- ~77% of the previous HTS register was filled in with unneeded information from negative initial test results, including sensitive client PII.



## All three ScanForm registers will be scaled up nationally in Malawi to 750+ facilities.

- 86% of HCW would recommend ScanForm for their facility
- *We want the ScanForm Technology to start as soon as possible.\**
- *Change is possible. There is always room for change. That is when you move with technology. We should not be rigid when new things are coming.\**

## Are you ready to upgrade to ScanForm?

Contact us:

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QED | <https://qed.ai>

 ScanForm

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QUANTITATIVE ENGINEERING DESIGN



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\* - focus group discussion feedback from Clinton Health Access Initiative, 2021