



*Government of Malawi Ministry of Health*

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# **Integrated HIV Program Report January-March 2021**

- *Integrated HIV Program Supervision*
- *HIV Testing Services / Early Infant Diagnosis*
- *Blood Safety*
- *Post Exposure Prophylaxis*
- *HIV Exposed Child Follow-Up*
- *Prevention of Mother to Child Transmission /  
Antiretroviral Therapy*
- *TB / HIV*
- *Sexually Transmitted Infections*
- *Supply of HIV Program Commodities*

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# 1 Executive Summary (January-March 2021)

## COVID-19 Disruptions to the HIV Program

*The first cases of COVID-19 in Malawi were confirmed on 2<sup>nd</sup> April 2020 and early epidemiological models predicted rapid spread and severe impact of COVID-19 in Malawi.*

*The DHA issued 3 editions of a circular to all HIV service delivery sites (on 3<sup>rd</sup>, 17<sup>th</sup> April, 15<sup>th</sup> June, 17<sup>th</sup> August and 14<sup>th</sup> January) with specific infection prevention guidance for COVID-19, and policy recommendations aimed at decongesting facilities, and reducing travel and contact exposure for patients and health workers. This included a temporary suspension of non-essential services: routine scheduled viral load monitoring for stable adult patients; VMMC; active index partner tracing; new initiation of IPT and PrEP; Teen clubs and other ART support groups involving social gatherings. The DHA also recommended an enhanced implementation of 6-month ARV dispensing for almost all patient groups. As the COVID-19 impact remained much lower than initially feared, the suspended services were successively reintroduced.*

*However, modified service recommendations were re-instated with the 5<sup>th</sup> edition of the DHA circular in response to the 2<sup>nd</sup> wave of COVID-19 that emerged from late December 2020 / early January 2021. This included the temporary suspension of community activities that involve travel or gatherings and most training activities. All facility-based HIV services were recommended to continue as normal provided adequate personal protective equipment (PPE) was available for health workers. In case of PPE shortages, the circular specified a list of non-essential activities that should be deprioritized (community-based HIV testing; recency surveillance; demand creation for VMMC and PrEP; VMMC campaigns; new initiation of PrEP; community condom distribution; initiation of TB preventive therapy for stable ART patients; ART teen clubs).*

*Anecdotal observations suggest that many people generally avoided presenting to health services during the 2<sup>nd</sup> COVID-19 wave, presumably out of fear from getting infected. It is therefore unclear what additional impact the DHA circular had on access to HIV services. However, there was a noticeable reduction in some HIV service outputs in Q1 2021 compared with Q4 2020:*

- *Conventional HTS outputs declined by 13%*
- *HIVST kits distribution declined by 18%*
- *New ART initiations declined by 9%*
- *The number of blood units collected reduced by 16%*
- *The number of routine viral load samples collected reduced by 43%*
- *The number of clients accessing PEP reduced by 23%*
- *The number of clients treated for STIs reduced by 20%*

*Reassuringly, program reports showed no significant increase in loss to follow-up from ART.*

## Program performance highlights by the end of March 2021 include:

- *Scale-up of integrated HIV services had reached the following number of sites:*
  - **724** static and **154** outreach HIV testing sites.

- **760** (static) ART sites; **605** of these started at least one pregnant or breastfeeding woman.
- **699** sites with HIV-exposed children in follow-up.
- **670,567** persons were tested for HIV by a trained provider and received their results; **131,552 (20%)** accessed HIV testing for the first time; **539,015 (80%)** were repeat testers and **22,296 (4%)** of these received confirmatory testing (after having tested positive in the past). **20,078 (3.1%)** clients received a positive result for the first time<sup>1</sup>.
- A total of **104,724** people received **173,272** self-test kits; 77,033 (44%) of these were for use by the recipient and 96,239 (56%) for onward distribution to sex partners or other people.
- **18,193 (97%)** of **18,802** blood units collected were screened for (at least) HIV, hepatitis B and syphilis.
- A cumulative total of **825** clients were referred for PrEP eligibility screening and **544 (66%)** were found eligible. **277** newly started PrEP and **177** clients were retained on PrEP at the end of the quarter.
- **155,575 (99%)** of 157,743 women at ANC had their HIV status ascertained; **10,724 (7%)** of these were HIV positive. **131,564 (95%)** of 139,169 at maternity had their HIV status ascertained **9,387 (7%)** of these were HIV positive.
- **19,682** patients started ART this quarter; **79%** were classified as asymptomatic / in WHO stage 1 and started under the “Test & Treat” policy.
- **871,098** patients were alive and on ART by end of March 2021.<sup>2</sup> This means that **88%** of the estimated 986,671 HIV positive population was on ART. <sup>3</sup> ART coverage was **78%** (44,960/ 57,530) for children<sup>4</sup> and **89%** (826,138 / 929,141) for adults.
- **136,281 (95%)** of viral load results from routine monitoring were <1000 copies/ml. Viral suppression rates for routine samples among children (0-14 years) and adults (15+ years) were **77%** and **96%**, respectively.
- **73%** of adults and **76%** of children were retained alive on ART at 12 months after initiation.<sup>5</sup>
- Out of **851,998** patients on first line adult ART **817,888 (97%)** had transitioned to TDF/3TC/DTG and only **4,388 (1%)** were on TDF/3TC/EFV.

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<sup>1</sup> The crude number of new diagnoses is based on the self-reported previous testing history documented in the HTS registers. Model-based estimates of the “1<sup>st</sup> 90” suggest that undisclosed repeat positives account for about half of these. This implies the true yield of new diagnoses may be only around **1.5%**.

<sup>2</sup> 871,098 patients were reported as alive on ART at their registered site. In contrast to previous reports, no adjustment for patients in transit can be made this quarter. Tens of thousands of patients who were previously marked as lost to follow-up have been re-classified as transferred out in the context of active tracing undertaken by implementing partners. This precludes the calculation of new transfers out from cumulative cohort data.

<sup>3</sup> 2021 Spectrum Model estimates for the HIV population in March 2021.

<sup>4</sup> Number of children (0-14 years) on ART extrapolated from age-disaggregated cohort reports from sites with electronic medical record systems (see section 12.3 on page 25).

<sup>5</sup> Actual retention rates are thought to be about **10%** higher due to misclassification of ‘silent transfers’ as defaulters in clinic-based survival/retention analysis. (see section 12.4)

- **9,336<sup>6</sup> (98%)** of an estimated 9,550<sup>3</sup> HIV infected pregnant women in Malawi were on ART this quarter. **8,436 (76%)** of these were already on ART when getting pregnant and **2,632 (24%)** started ART during pregnancy/delivery.
  - An additional **686** breastfeeding women (re-)started ART in WHO stage 1 or 2.
  - **78%** and **74%** of women started while pregnant or breastfeeding were retained on ART at **6 and 12 months** after initiation, respectively.
  - **9,290 (7%)** of infants discharged alive from maternity were known to be HIV exposed, **8,590 (92%)** of these received ARV prophylaxis (nevirapine).
  - A total of **13,888 HIV** exposed children were newly enrolled for follow-up this quarter; **11,245 (81%)** of these were enrolled before age 2 months.
- Out of the total 986,671 estimated PLHIV by end March 2021:
  - An estimated **96%** of PLHIV knew their status (diagnosed)
  - **92%** of whom were on ART
  - **94%** of whom were virally suppressed.<sup>7</sup>
- This means that the Q1 2021 scale-up target for the population diagnosed was exceeded. The increase in the proportion of PLHIV who knew their status was higher than in previous quarters (91%). This was related to the lower overall PLHIV estimate in the 2021 Spectrum model which is the denominator for standard model method for calculating the “first 90” (UNAIDS “Shiny90” model). The new model estimate implies that undisclosed repeat testers account for 53% of clients reported as “new positive” in routine HTS data between 2016 and 2021. Consequently, the gap between the estimated number of PLHIV diagnosed and those on ART has declined to 79,446. The great majority of people diagnosed and not on ART have been previously on treatment and interrupted.
  - Malawi has already surpassed all of the 90-90-90 targets which were set for December 2020. In line with the new National Strategic Plan 2020-25, the current and future reports will measure progress against the UNAIDS fast-track 95-95-95 targets. See **Figure 1** below:

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<sup>6</sup> Adjusted for double counting due to patient transfers / ‘failed ART initiations’ among women lost to follow-up within 6 months of ART registration.

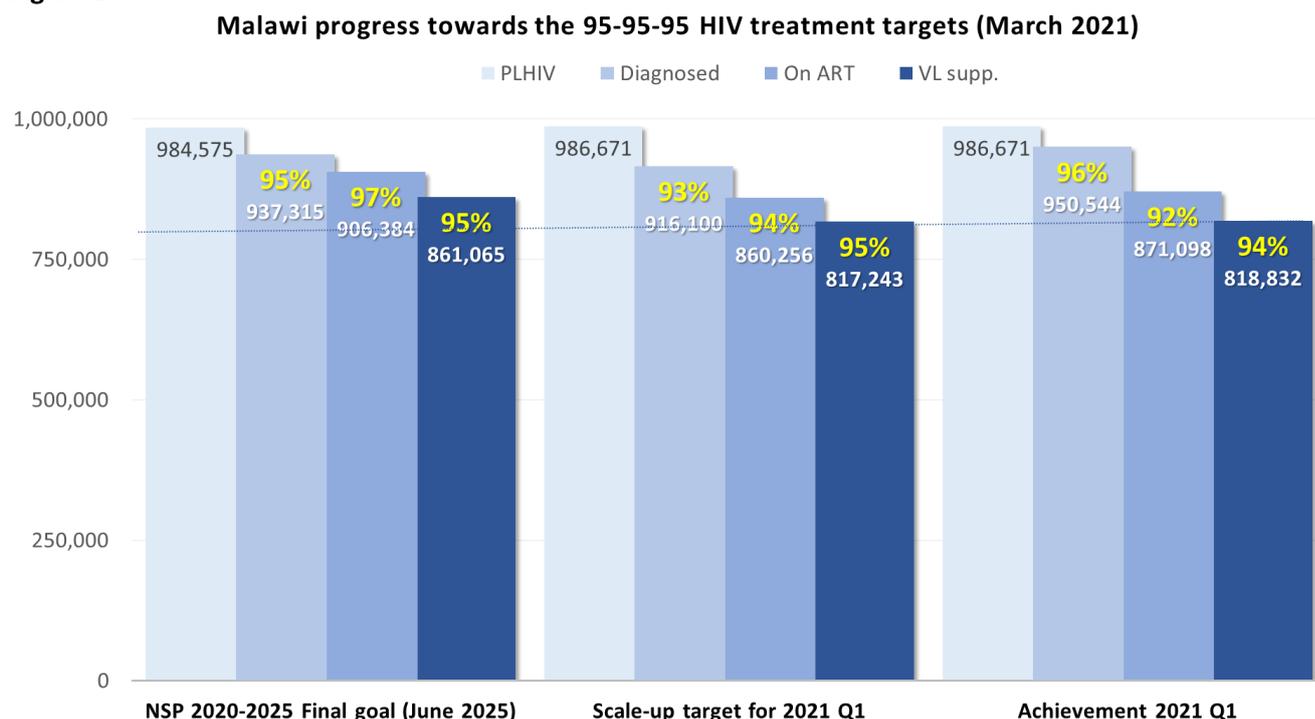
<sup>7</sup> Estimation methods for progress towards the 95-95-95 treatment targets

**‘First 95’** (950,544 diagnosed): Calibrated to the UNAIDS Shiny90 model estimates; the 76.8% MPhIA estimate for adults (15-64) diagnosed (self-reported and/or presence of ARVs in blood sample) is assumed to represent the status for all PLHIV (Spectrum) by end of Q1 2016 (977,890 x 76.8% = 751,020); add: 292,072 = 47% of 621,430 people reported as newly diagnosed between April 2016 – March 2021 (HTS program data adjusted for an estimated 53% of repeat testers misclassified as newly diagnosed); subtract: 92,547 (92%) of 100,129 estimated deaths among all PLHIV (2021 Spectrum model) between April 2016 – March 2021 to account for deaths among the diagnosed population (on ART and not on ART).

**‘Second 95’** (871,098 on ART): patients retained alive on ART by end Q1 2021 from routine ART program reports.

**‘Third 95’** (818,832 virally suppressed): extrapolated from the 95% of patients with a routine VL monitoring result <1000 copies/ml this quarter, applied to the 871,098 patients on ART.

**Figure 1**



## 2 2021 HIV Estimates Overview

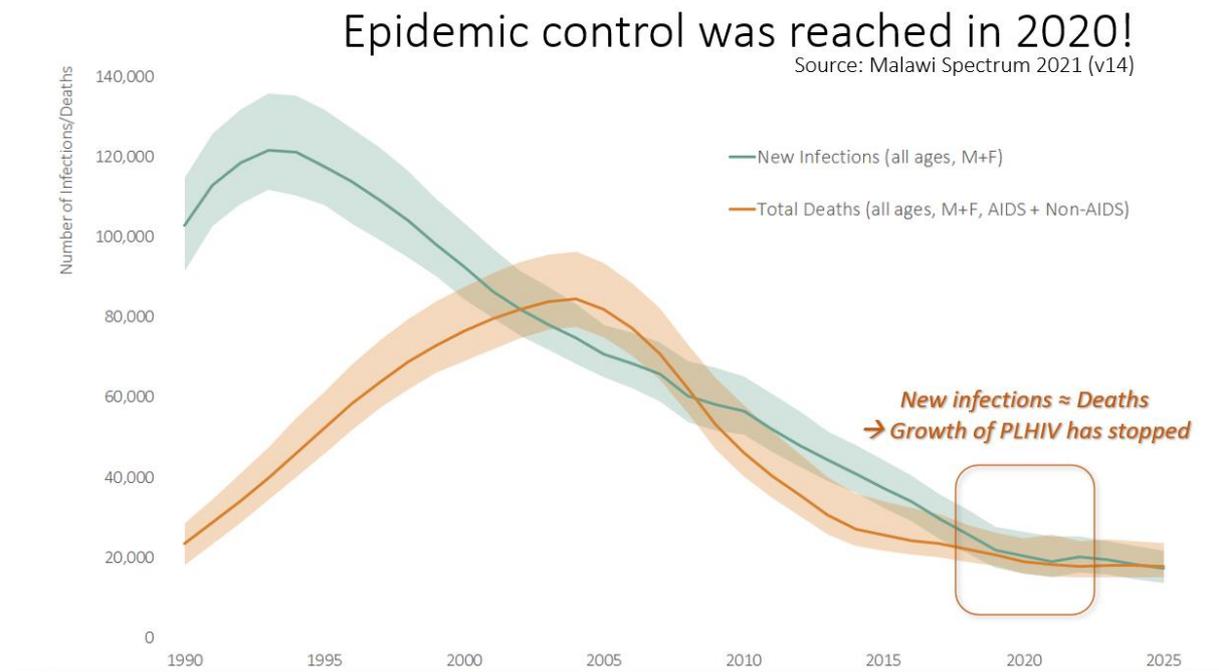
The 2021 Spectrum model suggests that the number of new infections and the total number of PLHIV in 2020 were 58% and 8% lower compared with the 2020 Spectrum estimates. These considerable reductions were due to the following changes in the model parameters:

1. Full alignment with NSO population projections which projected a lower population growth, particularly in the cities.
2. Updated assumptions based on the latest the empirical evidence from the research trials and surveys in East and Central Africa. These suggest a stronger secondary prevention effect from ART scale-up.
3. Updated the inputs with complete 2020 Program data (HTS, ANC, PMTCT, ART)

Based on these new estimates, an equilibrium between the rate of new infections and all-cause deaths among the HIV infected population was reached around 2020, resulting in no further growth of the population living with HIV. Considering that Malawi has surpassed the condition of at least 80% ART coverage of all PLHIV, this means **the UNAIDS definition of HIV epidemic control was reached around 2020.**

**Figure 2** shows the estimated trend of the number of new infections and deaths among PLHIV between 1990 and 2025 and the surrounding uncertainty ranges. ART scale-up was the main driver for this sustained simultaneous decline.

**Figure 2 2021 Spectrum model estimates for new HIV infections and all-cause deaths in Malawi (males and females; all ages)**



### 3 Integrated HIV Program Overview

Malawi's National HIV Program has undergone several important policy changes since its inception in 2004. The 4<sup>th</sup> Edition of the **Malawi Integrated Clinical HIV Guidelines** was published in **July 2018** and some policies /components were revised. Training for nationwide implementation is underway and refresher training for the revised components have been planned. The following are the policies/components of policy that were revised and endorsed for implementation and scale up in Malawi by the Ministry of Health and Population beginning in April 2019:

- Introduction of **dolutegravir- (DTG) based first line ART** regimens for all: Transition of new and existing eligible patient groups weighing 20kg +.
- Phasing out of **NNRTI-Based (NVP)** regimens: Transitioning of clients on NVP to DTG or PI Based regimen.
- **Differentiated Service Delivery (DSD)** Model: Introduction of Six-Monthly ART dispensing.
- **Viral Load Monitoring**: transition from 2-yearly to annual scheduled monitoring.
- Pre-exposure prophylaxis (**PrEP**): Oral PrEP as additional preventative method for HIV-negative clients at substantial risk of HIV infection.
- TB Preventive Therapy (TPT): Dispense **IPT or 3HP** to all eligible adult PLHIV newly initiated on ART who have not previously completed a course of TPT.

The **decentralization of ART services** continues as new health facilities are established and existing facilities attain minimum staffing and infrastructure requirements for ART.

## 4 Supportive Site Supervision

### 4.1 Methods

The Department for HIV and AIDS has coordinated quarterly supportive supervision visits to all health facilities with ART services since the start of the national treatment program in 2004. Supervision teams are composed of: experienced HIV clinicians; nurses and M&E staff from health facilities in the public and private sector; district and zonal PMTCT and ART coordinators; program officers and technical staff from the Department for HIV and AIDS; technical staff from implementing partners. The TB and HIV programs have fully integrated their respective site supervision exercises since April 2015.

Each quarter, a one-day pre-supervision meeting is organised for all supervisors participating in the upcoming round to share program updates, discuss observations from the previous round, distribute materials and organise logistics, transport and accommodation.

Standard supervision forms are used to guide implementation of the supervision protocol, to update site information and collect M&E reports. Custom forms with previous data for each site are printed from the Department of HIV and AIDS Management Information System (DHA-MIS). Supervision forms include:

- Contact details of HIV service providers at each site
- Quality of service checklist
- Follow up on action points noted during the previous visit
- Next visit date
- M&E reports from HIV testing, ANC, maternity, exposed child and pre-ART follow-up, ART and TB
- Physical drug stock-level assessment
- Identification of sites in urgent need of clinical mentoring
- Semi-structured feedback and performance rating for the supervision teams by facility staff

One copy of the supervision form is returned to the Department for HIV and AIDS, where data are entered in a custom SQL Server / MS Access database (Department of HIV and AIDS Management Information System; DHA-MIS) to produce national reports and to manage program logistics and the commodity supply chain. A second copy of the supervision form is left at the sites.

The supervision protocol includes a systematic review and verification of primary records (patient cards and registers) at all sites. This effectively provides a quarterly quality audit for M&E records, which has resulted in exceptional accuracy and completeness of HIV Program data in Malawi. At the same time, the systematic chart review helps to identify complex cases or deviations from clinical protocol, allowing the supervision team to provide targeted mentoring and clinical advice. The quarterly supervision exercise also aims to boost staff morale and motivation through *Certificates of Excellence* that are awarded by MOH to sites with an excellent score on the quality of service checklist. A growing number of health workers from sites all over the country participate as supervisors in this quarterly exercise and this has strengthened the national HIV Program identity and has greatly facilitated communication between program staff at the national, zonal, district and facility level.

The HIV testing program usually conducts a separate supportive site supervision exercise each quarter, targeting a sample of HTC sites both within and outside of health facilities. Supervision teams consist of district, zonal and national level HTC coordinators, supported by implementing partners.

## 4.2 Supervision Outcomes

760 public and private sector facilities were visited for **biomedical HIV program supervision** between 12<sup>th</sup> and 23<sup>rd</sup> of April 2021.

The large number of sites was covered by **262** supervisors working in **32** teams that spent **1,996 working hours** at the sites. Each site visit lasted on average 3.5 hours, but up to 2 days were spent at the busiest sites. **547 (71%)** sites were awarded a *certificate* for **excellent performance**. This exceeds results from the previous quarter (488). **102 (13%)** sites had significant weaknesses and were rated to require **intensive mentoring**. Mentoring capacity will need to be further expanded.

**Table 1**

**Table 1:** Outcomes of integrated HIV services supervision for 2021 Q1

Zone	Total facil. visited*	Supervision hours spent at facilities		Performance (# and % of sites)	
		Total	Average per site	Excellent perform.	Mentoring needed
NZ	140	324	2.3	87 62%	31 22%
CEZ	108	280	2.6	87 81%	7 6%
CWZ	171	428	2.5	129 75%	27 16%
SEZ	174	452	2.6	130 75%	14 8%
SWZ	176	512	2.9	114 65%	22 13%
<b>Malawi</b>	<b>769</b>	<b>1,996</b>	<b>2.6</b>	<b>547 71%</b>	<b>101 13%</b>

\* includes facilities that were visited for assessment of readiness, but that may have not (yet) been designated to provide integrated HIV services.

**Table 1** summarizes the supervision outcomes by zone. Most facilities were using the standard national M&E tools. **251** sites had cumulatively registered more than 2,000 ART patient and **93** of these had registered more than 5,000. **207 (90%)** of these high burden sites were using point-of-care electronic medical records (EMR) systems. **207** low- and medium-burden sites were using a back-data entry solution of laptops to capture patient visits recorded on the paper patient cards. Some NGO-supported sites were using custom tools compatible with the national standard reporting requirements.

## 5 Inventory of Sites and Services

### 5.1 Sites and Services

There were **724** static and **154 outreach** HIV testing sites in Q1 2021.

**Table 2**

Facilities with integrated HIV services in the 5 Zones. Availability of services defined by performance (at least 1 patient enrolled) during 2021 Q1

Zone	Total fac.(1)	Facilities providing HIV services						CD4 count machines (2)				
		Exp. child		PMTCT B+		ART		Installed		Functional		Results
SEZ	175	161	92%	152	87%	172	98%	17	10%	15	88%	1,325
SWZ	176	162	92%	143	81%	174	99%	27	15%	26	96%	2,771
CWZ	172	147	85%	128	74%	170	99%	28	16%	27	96%	2,212
CEZ	109	102	94%	79	72%	107	98%	19	17%	19	100%	585
NZ	143	127	89%	103	72%	137	96%	21	15%	22	105%	689
<b>Malawi</b>	<b>775</b>	<b>699</b>	<b>90%</b>	<b>605</b>	<b>78%</b>	<b>760</b>	<b>98%</b>	<b>112</b>	<b>14%</b>	<b>109</b>	<b>97%</b>	<b>7,582</b>

(1) Total facilities in the public / private sector designated to provide integrated HIV services in this quarter. Individual site selection is reviewed and may change each quarter.

(2) CD4 machines that have produced at least 1 result during the reporting period are defined as functional.

**Table 2** shows the distribution of the **775** sites designated to provide clinical HIV services in Q1 2020, by zone. At the national level, there were **760** (static) sites with at least one patient on ART; **605** sites had enrolled women under PMTCT Option B+; **699** had enrolled HIV exposed children for follow-up. ART services were now available at almost all designated sites in the 5 zones.

CD4 count machines (including 'point of care' machines) were installed at 113 sites, and **91 (86%)** of these had produced at least 1 result during Q1 2020. The total number of CD4 results produced (**7,582**) was similar in the previous quarter (7,428). **2,038 (27%)** of the 7,582 CD4 results were 200 cells/ml or less and these patients were therefore eligible for routine urine LAM and serum CrAg. With the introduction of the 'Test & Treat' policy, routine CD4 count testing to determine when to start ART has been deprioritized. However, the 2018 Malawi HIV guidelines introduced routine baseline CD4 counts at ART initiation where available and outputs are expected to increase further.

### 5.2 Staffing of HIV Services

#### 5.2.1 HIV Testing Services

The Department for HIV and AIDS has maintained a dedicated system for professional registration and performance tracking for HIV testing providers since 2011. This separate registration system is needed because HIV testing providers include lay persons with HIV

testing training who are not registered with any other professional body. All testing providers are issued with a unique ID and a professional logbook for documentation of duty stations, trainings, sit-in observation and proficiency testing results. Logbook holders are requested to record the total number of tests done at the end of each month. Logbook holders are requested to record the total number of tests done at the end of each month. Logbooks were not routinely reviewed during the 2021 Q1 supervision and key performance data for each provider were not summarized on the site supervision form. <sup>8</sup>

### 5.2.2 ART/PMTCT

Integrated HIV program supervision has included a staffing census for ART clinics since Q3 2014. This census is undertaken during the site visits, indicating all staff members who actually worked at the ART clinic on the most recent clinic day. The census is designed to provide an accurate snapshot of the actual staffing of ART services each quarter. The numbers collected may be slightly lower than longer term averages, because around 200 service delivery staff are themselves participating in the supervision exercise and will not be counted as having worked in their ART clinic during the supervision period. The table below shows that overall staffing levels have slightly declined over the last 2 quarters. However, the number of ART clinicians increased by 33 from 822 to 855 from the previous quarter.

Among the other cadres, **1,267** were nurses and **831** were auxiliary staff (health surveillance assistants, clerks, etc.)

**Table 3**

	2020 Q2		2020 Q3		2020 Q4		2021 Q1	
Clinicians	860	30%	880	28%	917	28%	906	27%
Nurses	1,173	41%	1,272	41%	1,315	40%	1,314	39%
Pharmacy staff	123	4%	131	4%	260	8%	293	9%
Auxiliary Staff	725	25%	817	26%	829	25%	871	26%
<b>Total</b>	<b>2,881</b>		<b>3,100</b>		<b>3,321</b>		<b>3,384</b>	

An estimated 4.0 million ART patient visits are currently managed at the 760 ART sites per annum, based on 871,098 patients alive on ART and an average dispensing interval of 2.5 months. With 260 working days per year, an average of 16,081 patient visits is therefore managed by the ART sites per working day. At current staffing levels, this translates into an average of **18** ART patient visits per clinician and **12** per nurse per day. This approximate HRH capacity assessment does not take account of site-specific differences in patient burden and staffing levels and there are several medium and high burden sites with sub-optimal staffing. However, the national treatment program is fully decentralized to the health centre level and the program continues to devolve the growing patient burden to peripheral facilities. Since 2011, the steepest increase in ART patient numbers has been recorded at the 300 small peripheral sites that have the largest collective staffing capacity (see **Figure 13** on **page 35**).

<sup>8</sup> The logbook review was temporarily suspended to minimize the workload for the supervision teams

## 6 HTS Program Outputs

HIV testing protocols were revised in 2016. A new HIV testing register was implemented in the course of a national re-training campaign for all HTC providers between May and November 2013. Protocol revisions include:

- Clear recommendations for re-testing based on the client’s test result and risk assessment
- Proper documentation of confirmatory testing for clients with a prior positive result (usually performed at enrolment into care).

The HIV testing program observed a number of challenges. First, although quality control (QC) samples were available at most sites, some sites had not carried out any QC testing. Space constraints are common and remain a challenge. Providers have to share the testing rooms at most facilities. Some mentors supported by partners are not adequately trained and the mentorship provided is therefore not comprehensive. ‘Conveyor-belt’ (batched) HIV testing is still being practised in some facilities despite ongoing attempts to reinforce the one-client-in-session testing policy. Finally, some implementing partners have introduced modified M&E tools at facilities they are supporting that are adding considerable work load and distraction.

### 6.1 Quality Control (QC) Testing

The national HIV testing protocol requires all sites to perform QC testing at least once per week. Additional QC is required when a new consignment of test kits is received; when starting a new lot; when a new provider joins the facility, when test kits have been exposed to temperatures above manufacturer recommendations. The QC procedure involves testing each of the 2 rapid test kits used in the national algorithm with a known negative and a known positive serum to confirm that the tests show the expected results. This means that 2 positive and 2 negative results are expected for each complete QC set. QC results have been documented in a dedicated section in the standard HIV testing register since 2013. From Q3 2016, QC results have been systematically reviewed during the integrated HIV program supervision.

**642 (89%)** of the 724 active testing sites had documented at least 1 QC set this quarter and **605 (84%)** had recorded the minimum of 12 sets (one for each week). At **641 (>99%)** of sites, all samples produced the expected result.

### 6.2 HIV Testing and Counselling Outputs

**670,567** people <sup>9</sup> were tested and counselled for HIV between January and March 2021. This is a 13% decrease from the previous quarter (768,126). Many of the dedicated testing staff (HIV Diagnostic Assistants, HDAs) hired by PEPFAR implementing partner organizations have been re-purposed to other tasks following PEPFAR guidance to reduce “over-testing”.

**641,270 (96%)** of all tests were performed at health facilities, **7,678 (1%)** were done in stand-alone HTC sites, **20,658 (3%)** were done outside of facilities / in the community and **966 (<1%)**

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<sup>9</sup> Reports from the HTC register are based on client encounters. It is not possible to de-duplicate people who access HTC multiple times in the reporting period. However, very few individuals come for repeat testing in less than 3 months and the number of HTC encounters in one quarter is therefore assumed to represent individuals.

were from self-test returning clients tested at the facility. **20,078** people were reported as newly diagnosed with HIV this quarter. Out of these, **19,141 (95%)** were diagnosed at health facilities; **327 (2%)** at stand-alone HTC sites; **594 (3%)** through community-based testing and **16 (<1%)** were from self-test returning clients tested at the facility. The reported 'yield' for new diagnoses was **3.1%** (excluding clients who disclosed a previous positive result from the denominator).

However, based on UNAIDS "Shiny90" model triangulation of population survey results and program data, **at least 53%** of all clients classified as "new positive" in HTS registers are assumed to be undisclosed repeat testers. Discounting 53% from the 20,078 reported "new positives" results in an estimated **9,437** genuine new diagnoses this quarter. This reduces the true 'yield' of new diagnoses in the HTS program to **1.5%**.

### 6.3 HIV testing access type

**532,376 (79%)** of people tested were patients receiving provider-initiated testing and counselling (PITC); **112,290 (17%)** accessed voluntary testing and counselling, door-to-door, community-based testing and **25,901 (4%)** came for testing with a *Family HTC Referral Slip* (FRS) that was issued to a family member at a prior HTS encounter. **25,901** family members or contacts presented with an FRS for testing to the facilities and this represents successful referral rate of 88% based on the total number of FRS issued this quarter (29,545).

### 6.4 Age and sex distribution among HIV testing clients

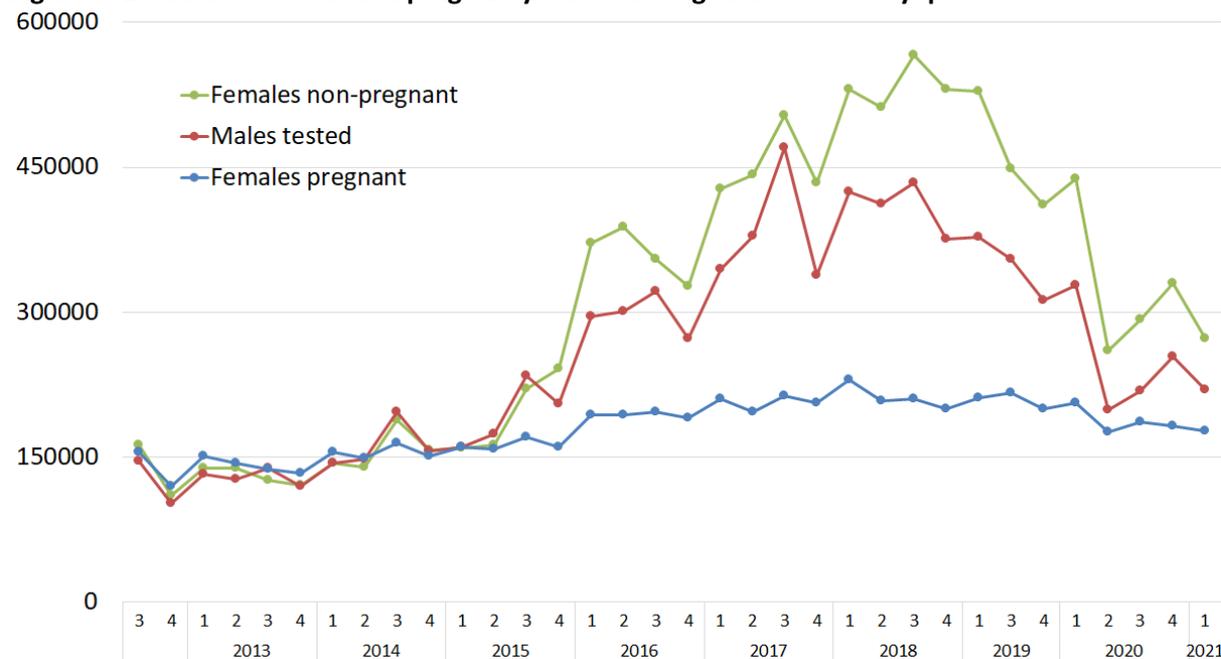
Out of **670,567** people tested and counselled, **33%** were males and **67%** were females. **39%** of females were pregnant. The ratio of males (**43%**) to non-pregnant females (**57%**) has remained constant. Testing among pregnant women is almost entirely provider-initiated and there is no comparable access route targeting males.

**157,060 (23%)** of all people tested accessed HTC with their partners (as a couple).

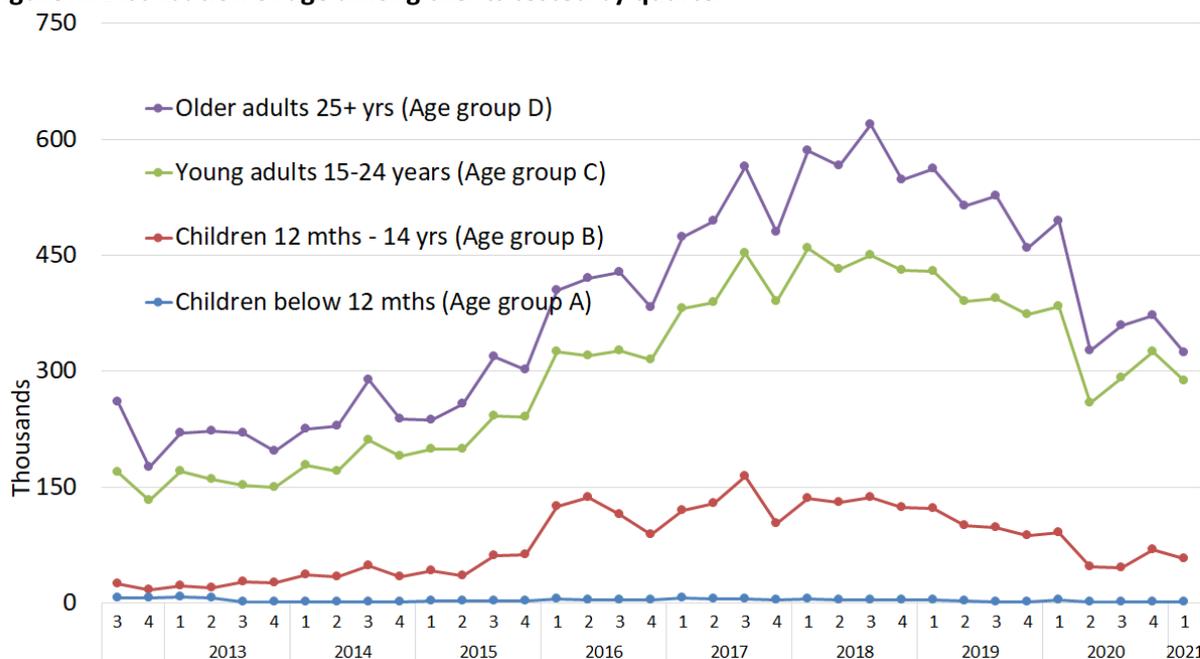
**48%** of all people tested and counselled were 25 years and above, **43%** were adolescents or young adults (15-24 years) and **8%** were children (<15 years). **1,000 (<1%)** of rapid tests done were among infants.

**Figure 3** and **Figure 4** show that the absolute increase in testing output since introduction of the HDA cadre in 2016 was mainly driven by non-pregnant females, males and the age groups 15-24 and 25 years and above. From 2020 Q4 to Q1 2021, the number of males, pregnant women and non-pregnant females tested decreased by 14%, 3% and 17% respectively.

**Figure 3: Distribution of sex and pregnancy status among clients tested by quarter**



**Figure 4: Distribution of age among clients tested by quarter**



## 6.5 First-time, repeat and confirmatory test results

All HIV positive patients enrolled in care need a confirmatory HIV test to rule out any possibility of mix-up of test results or fraudulent access to ART. Confirmatory testing is done when starting ART. National guidelines require a confirmatory DNA-PCR at the time of starting ART for all children under 24 months, regardless if the initial diagnosis was based on a positive DNA-PCR or a rapid antibody test. Follow-up rapid antibody testing for children is no longer recommended.

**131,552 (20 %)** of all clients tested accessed testing for the first time and **539,015 (80%)** were repeat testers. Based on the cumulative number of people who accessed HTC for the first

time, a total of **12,211,854** people have been tested since introduction of the *first time HTC access* indicator in July 2007. The classification of first-time and repeat testers is likely to be affected by misreporting and non-disclosure of previous diagnoses.

**20,078 (3.1%)** out of all clients were recorded as receiving a positive result for the first time, but it is assumed that about half of these may be undisclosed repeat diagnoses (see above). Positive rapid test results among infants (**98**) and inconclusive test results (**1,555**) both accounted for **<1 %** of new results given to clients.

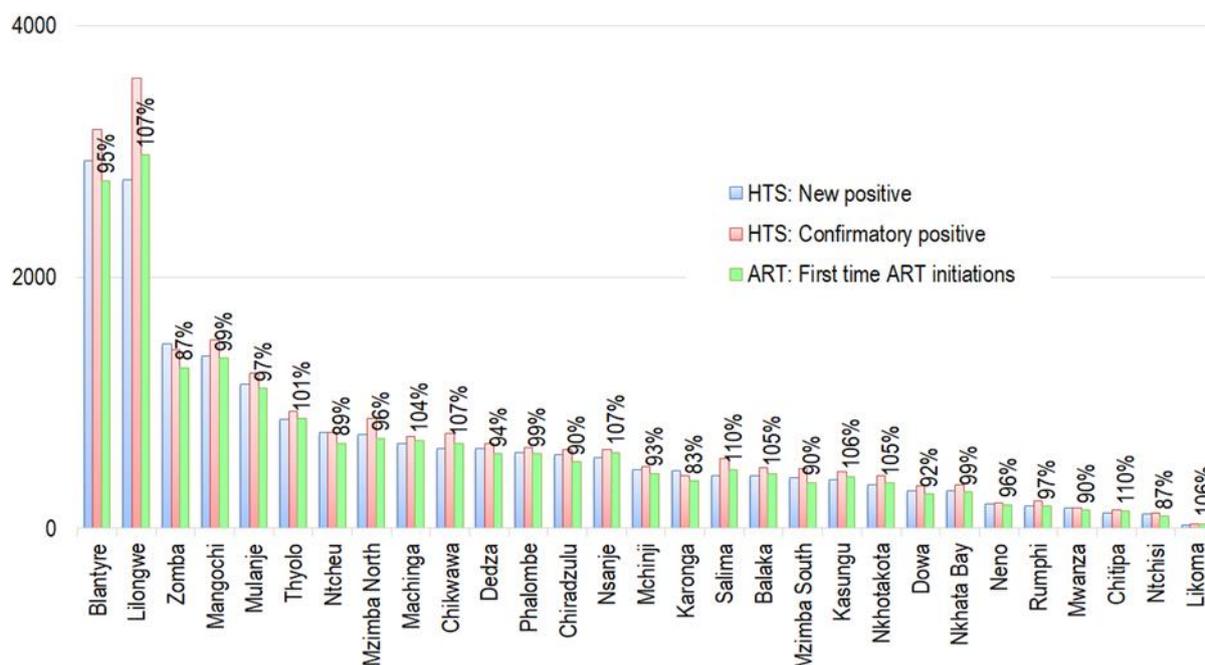
**515,827 (96%)** of 539,015 repeat testers reported a *last negative* result. **22,396 (4%)** were reported as *previous positives* and all of these should have been classified as receiving a confirmatory test. For most of these *previous positives*, testing was probably initiated by a health worker before ART initiation. As expected, the number of *confirmatory test results (22,406)* was very close to the number of previous positive clients. **22,405 (99%)** of 22,521 confirmatory test results were concordant positive and **116 (1%)** were classified as *confirmatory inconclusive*. This category includes parallel concordant negative and discordant test outcomes (Determine HIV1/2 and Uni-Gold HIV1/2 are used in parallel for confirmatory testing). Clients who did not have a concordant positive confirmation may be explained by selective confirmatory testing among clients with doubts about their previous positive status, but it also underscores the importance of routine confirmatory testing before ART initiation and the need to strengthen quality assurance.

## 6.6 Linkage from HIV diagnosis to ART

**Figure 5** shows a triangulation of HIV testing and ART program data by district. At the national level, the **19,682** patients who initiated ART this quarter represent **98%** of the **20,078** clients tested positive for the first time. Proxy linkage rates ranged from 83% in Karonga to 110% in Salima and Chitipa. Blantyre had the highest number of new diagnoses (**2,926**) and ART initiations were at 2,770 implying a district-level linkage of **95%**. Very high or low linkage rates suggest that cross-border access to testing and ART was seen in several districts (e.g. Karonga, Ntchisi, Zomba, Salima, Chitipa etc.).

The number of confirmatory positives exceeded the number of new positives by 2,327 at the national level. This means a large number of clients who disclosed their previous positive status were getting tested again. Lilongwe recorded the greatest excess (807) of confirmatory positives compared with the number of new positives. Lilongwe, Blantyre, Salima, Mangochi, Mulanje, Mzimba North, Nkhotakota, Mzimba South, Chikwawa and Balaka accounted for **1,854 (80%)** out of the 2,327 excess confirmatory positives in the whole country this quarter. At the national level, the number of confirmatory positives exceeded the number of ART initiations by 2,723 (14%).

**Figure 5: Number of new positives, confirmatory positives and new ART initiations in Q1 2021 by district (percentages represent ART initiations over new positives for each district)**



## 6.7 HIV Self-Testing (HIVST)

The implementation of the National HIVST program started in December 2018 with an aim of facilitating access to HIV testing for hard-to-reach populations. Distribution of HIVST kits to index clients for secondary distribution to sexual partners is one important modality for index testing.

After a practical demonstration by a trained HIVST distributor, oral fluid self-tests are given to the end-user for self-testing or for onward distribution to a sexual partner, or any other person considered in need of HIV testing. HIVST may be done under supervision by an HTS provider but is most commonly done in private. Counselling includes information about the interpretation of test results and a reminder to seek confirmation of any positive HIVST result by a professional provider using the standard blood based rapid testing algorithm. The HIVST program does not attempt to capture results of self-testing, but returning self-testing clients are recorded in a dedicated professional HIV testing register and a separate report is available for these (see below). Routine HST reports are limited to the attributes of the direct recipients and age and sex of the intended end-user.

### 6.7.1 HIV-Self Test Kits Recipients Details

Between January and March 2021, **104,724** people were counselled and given a total of **173,272** oral fluid self-test kits, either for self-use or for secondary distribution to sexual partners or others. This is equivalent to an average of 1.7 kits given to each recipient. **46%** of the 104,724 recipients were males and **54%** were females. **16%** of the females were pregnant.

Out of all recipients, **11,068 (11%)** had never been tested for HIV before and **93,656 (89%)** reported a previous test result. **90,490 (97%)** of previously tested recipients were negative and **3,132 (3%)** were positive. **2,686 (86%)** of the positives were on ART and **14%** were not (yet) on ART. The **446** HIV positive recipients who were not yet on ART most likely received

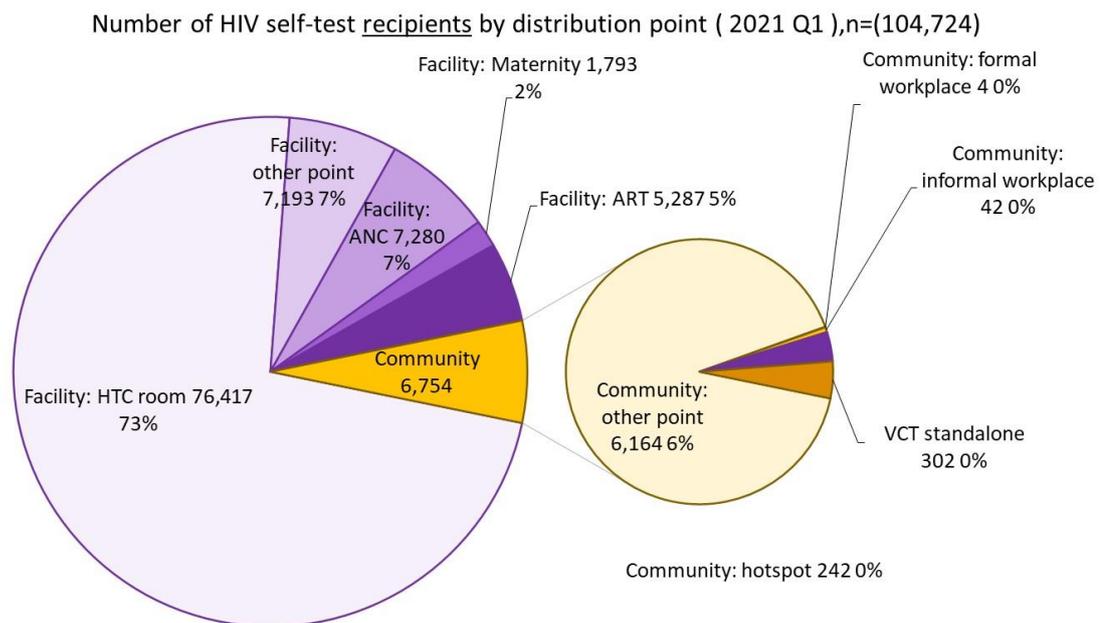
ST kits for their sexual partners in the context of index testing. **34 (<1%)** recipients reported an inconclusive previous test result.

### 6.7.2 Distribution Points of HIVST Kits

The national program recognizes 10 categories for HIVST distribution points. These are grouped under the three locations of **health facility** (ANC, maternity, ART clinic, HTC room, other), **stand-alone HTS site** (VCT) and **community** (formal workplace, informal workplace, hotspot, other). A dedicated distribution register is used for each type of distribution point and captures the details of recipients and the intended end users.

**Figure 6** shows the number of recipients by distribution points in 2021 Q1. **97,970 (94%)** of all **104,724** recipients were seen at health facilities and **6,754 (6%)** in community settings. HTC rooms were the most common distribution point in facilities with **76,417 (73%)** recipients, followed by other facility points (**7,193**), ANC clinics (**7,280**), ART clinics (**5,287**) and Maternity (**1,793**). **6,164 (6%)** of clients received HIVST at unspecified community distribution points, while formal and informal workplace setting, community hotspot and VCT standalone accounted for <1% of recipients.

**Figure 6**



### 6.7.3 HIVST Distributed Kits: Intended User Attributes

Out of the **173,272** HIVST kits distributed in Q1 2021, **77,033 (44%)** were intended for self-use by the recipients and **96,239 (56%)** were for onward distribution. **71,747 (75%)** of the kits intended secondary distribution were for sexual partners and **24,492 (14%)** were for others, such as friends or relatives of the recipients. **Table 4** below summarizes the HIVST kits distributed by distribution point and the end-user type. This shows the majority of HIVST kits distributed at health facilities were for self-use which is a deviation from the intended goal of

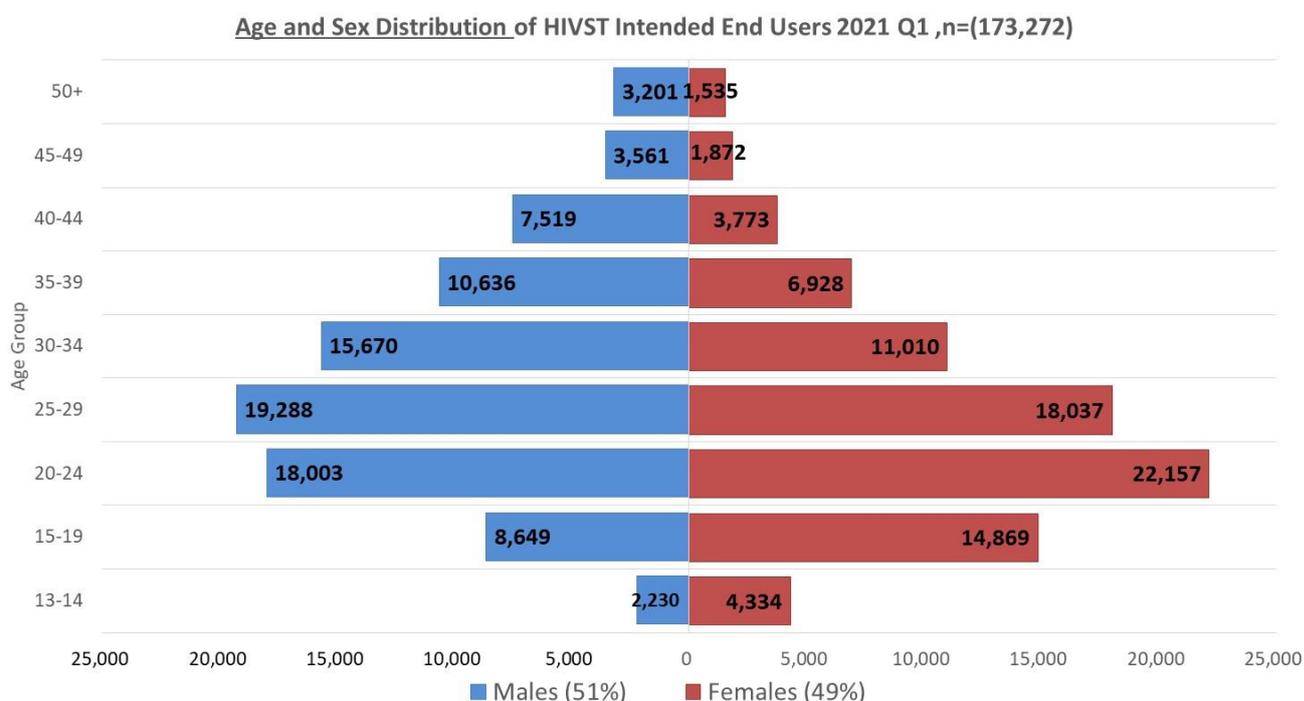
the HIVST programme in terms of targeting hard to reach populations who are not seen at health facilities.

**Table 4**

		End User Type							
		Self		Sexual Partner		Other		Total	
Facility	HTC room	57,725	46%	50,986	41%	16,991	14%	125,702	100%
	Other Point	5,263	39%	6,295	47%	1,785	13%	13,343	100%
	ANC	3,623	35%	5,337	51%	1,536	15%	10,496	100%
	Maternity	469	18%	1,820	68%	382	14%	2,671	100%
	ART	3,838	35%	4,128	38%	2,983	27%	10,949	100%
Community	Other Point	5,732	62%	2,837	31%	721	8%	9,290	100%
	Formal workplace	4	67%	2	33%	-	0%	6	100%
	Informal workplace	30	41%	31	42%	12	16%	73	100%
	Hotspot	240	98%	2	1%	3	1%	245	100%
	VCT standalone	109	22%	309	62%	79	16%	497	100%
		<b>77,033</b>	<b>44%</b>	<b>71,747</b>	<b>41%</b>	<b>24,492</b>	<b>14%</b>	<b>173,272</b>	

**Figure 7** below shows the intended end user age and sex category for all the test kits that were distributed during 2021 Q4. Out of **173,272** test kits distributed, **88,575 (51%)** were for males and **84,515 (49%)** for females. 72% of the male end users were 20-39 years and 65% of females were 15-29 years.

**Figure 7**



## 7 DNA-PCR testing for Early Diagnosis of HIV in Infants (EID)

DNA-PCR testing is performed at 10 labs (Mzuzu Central Hospital, Mzimba District Hospital, Kamuzu Central Hospital, Queen Elizabeth Central Hospital, DREAM Blantyre, DREAM Balaka,

Tholo District Hospital, Zomba Central Hospital, Nsanje District Hospital and Partners in Hope, Lilongwe). HIV Diagnostic Assistants and EID counsellors collect infant blood samples as dried blood spots on filter paper. Health facilities are requested to fill a standard EID DNA-PCR logbook to document EID samples and to track results. The logbook includes the dates of collection, dispatch, receipt of result from the lab and communication of the result to the mother. Supervision teams were asked to collect basic data from these logbooks.

**10,908** DNA PCR samples were drawn in the reporting period and documented in the facility DNA-PCR sample registers. **10,527 (97%)** of these were for the initial DNA-PCR test for exposed infant; **243 (2%)** were for the confirmatory testing of exposed children under 24 months when starting ART; **91 (1%)** were for repeat DNA-PCR for patients whose previous collected samples did not produce a valid result, and **47 (<1%)** were tie-breaker samples after repeat-inconclusive rapid antibody testing.

**9,251 (85%)** of 10,908 samples were collected using Dried Blood Spot (DBS); **1,628 (15%)** were collected directly in the device cartridge for Point of Care Machines (POCs) and **29 (<1%)** were collected using other methods, e.g. plasma.

Results were received at the facility for **9,078 (83%)** of the 10,908 samples collected; for **1,773 (16%)** of all samples the result missing or still pending 12 weeks after the samples were collected. **57(1%)** samples were rejected at the lab due to poor quality or analysis failure. **40%** of patients were notified of their result within 4 weeks of sample collection, **10%** were notified within 5-8 weeks and **2%** within 9-12 weeks. **5,273 (48%)** patients were either notified after 12 weeks or the notification was still pending. **9,048 (>99%)** of **9,078** samples with results were conclusive and **30 (<1%)** were inconclusive. Out of the conclusive test results, **8,711 (96%)** were negative and **337 (4%)** were positive.

The analysis for the **10 central PCR laboratories** was not possible for this report due to an error in the Lab Information Management System (LIMS) which led to many critical data gaps and misclassification of results.

## **8 Blood Safety**

The Malawi Blood Transfusion Service (MBTS) is striving to provide safe blood products for the entire country using voluntary non-remunerated donors and quality assured screening for transfusion transmissible infections (TTIs). For the last years, MBTS has not been able to meet the national demand and several hospitals continue to supplement or rely entirely on blood units collected from replacement donors. Complete reports from MBTS have been available throughout, but blood safety reports from health facilities have not been consistently available and it has been challenging to compile national reports relying on the data passively submitted by the sites. Therefore, the HIV program supervision teams were tasked with active collection of blood donor and cross-matching data from all visited health facilities. Some of the visited laboratories were not using the standard MOH registers and the aggregation of data for reporting may have been affected by incomplete documentation at some sites.

A total of **18,802** blood units were collected in Malawi during Q1 2021. MBTS collected **14,075 (75%)** of these, **100%** of which were screened comprehensively for the relevant TTIs (HIV, Hepatitis B, Hepatitis C, syphilis, malaria). In addition, **53** hospitals in Malawi collected a total of **4,727** units from replacement donors. **4,118 (87%)** of these units were screened for

at least the 3 key TTIs (HIV, HepB and syphilis) and **2,994 (73%)** of these were also screened for HepC and malaria. This means that a total of **18,193 (97%)** of all units collected this quarter were screened at least for HIV, HepB and syphilis. Based on the blood donor registers at the sites that collected blood from replacement donors, **581** were screened with any other combination of tests for TTIs.

A total of **7,632** potential replacement donors were documented in the blood donor registers at the facilities and **4,727 (62%)** of these ended up donating. Facilities may have used different screening algorithms and potential donors may have been excluded on the basis of different criteria, including TTIs, blood group, haemoglobin concentration and/or clinical conditions. Testing for less prevalent TTIs may have only been carried out for donors who passed the screening for more common conditions. In total, 77% of potential donors were tested for HIV, 75% for HepB, 77% for syphilis, 73% for malaria and 69% for HepC. Detailed data on outcomes of individual tests among all potential blood donors are presented in the Appendix

## 9 Preventive Services

### 9.1 Pre-Exposure Prophylaxis (PrEP)

PrEP roll-out has started at several implementing partner supported facilities in Q4 2020 and the supervision team included a review of PrEP client cards and registers for the first time this quarter. The reporting was affected by some gaps in the primary records and the data abstraction process. A cumulative total of **825** clients were referred for PrEP eligibility screening and **544 (66%)** were found eligible. **277** newly started PrEP and **177** clients were retained on PrEP at the end of the quarter. A more detailed PrEP cohort analysis will be presented in the following quarters.

### 9.2 Post Exposure Prophylaxis (PEP)

A total of **3,813** persons received PEP during Q1 2020. This is a 23% decrease from the previous quarter (4,961).

### 9.3 Provider-Initiated Family Planning (PIFP)

The Integrated Clinical HIV Guidelines encourage health workers to routinely provide condoms to all adults in ART clinics. Women should also be offered at least the standard injectable contraceptive (Depo-Provera) at any ART visit. This policy aims to address the significant unmet need for family 2 planning that had been observed among HIV patients in Malawi and to reduce the number of unwanted pregnancies among HIV-infected women (**PMTCT Prong 2**). HIV program reporting on PIFP is limited to women who received an injection of Depo-Provera in ART clinics during the last quarter. The report does not account for family planning need nor does it include women who accessed family planning services outside of HIV clinics.

**Table 5** shows that **67,655 (15%)** of 452,655 women received Depo-Provera from ART clinics in Q1 2021. The south-west zone had achieved the highest coverage. Patient coverage has remained the same as in the last quarter (15%). **498 (66%)** of 760 ART/PMTCT sites had stocks of Depo-Provera in January 2021. This is a decrease from the 554 sites with stocks in January

2021.<sup>10</sup> The HIV Program is no longer supplementing FP supplies through procurement and distribution of additional Depo-Provera to sites.

#### 9.4 Cotrimoxazole Preventive Therapy (CPT) and hypertension screening

All patients in HIV care are universally eligible for CPT in order to reduce the frequency and severity of several HIV-related diseases. Patients with confirmed HIV infection are provided lifelong CPT in ART clinics. CPT is also given to HIV exposed children until exposure to breast milk has stopped and HIV infection has been ruled out (usually around age 24 months). Fewer than 5% of patients are expected to require stopping of CPT due to toxicity, so the targeted CPT coverage is around 93%.

**Table 5** shows that **660,603 (76%)** of 871,098 patients on ART were on CPT. Coverage was highest in Central West zone at **83%**.

**678,585 (77%)** of 871,098 patients on ART were estimated to be 30 years or older. National guidelines require screening for hypertension for all adults (30 years +) at the time of ART initiation and annually thereafter. **160,128 (24%)** of 678,585 were screened for hypertension at least once in 2021.

#### 9.5 TB Preventive Therapy (TPT)

Following on from the 2016 policy of providing continuous isoniazid preventive therapy (IPT in the 5 districts with the highest TB burden (Lilongwe, Blantyre, Chiradzulu, Thyolo, Zomba) the national roll-out of a limited course of TPT for patients in all districts was started from 2019. The 2019 guideline addendum provides TPT for all new and existing patients on ART who have not previously completed at least 6 months of IPT. Implementation was planned in two phases to utilize remaining stocks of isoniazid and bridge the period until sufficient stocks of rifapentine were available in country to transition to the short course 3HP regimen (12 weekly doses of isoniazid and rifapentine).

In line with this policy change, the programme is now also collecting data on number of ART patients newly started on IPT in each quarter. A total of **29,858** were newly started on TPT during Q1 2021. **22,272 (75%)** of these received a single 6-month course of isoniazid and pyridoxine (6H) and **7,586 (25%)** were given 12 weekly doses of isoniazid and rifapentine (3HP). Data on TPT completion will be available from the next quarters.

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<sup>10</sup> Many Mission hospitals do not provide family planning.

**Table 5**

Zone District	Patients on ART (all)			Women (18-49) on ART			Adults (30+) on ART		
	Total	On CPT		Total	Given FP*		Total	BP screened**	
<b>Malawi (National)</b>	<b>871,098</b>	660,603	76%	<b>452,100</b>	67,655	15%	<b>678,585</b>	160,128	24%
Northern Zone	87,509	73,411	84%	45,417	6,726	15%	68,170	17,773	26%
Chitipa	7,004	4,589	66%	3,635	1,045	29%	5,456	1,824	33%
Karonga	14,946	12,506	84%	7,757	415	5%	11,643	2,910	25%
Nkhata Bay	11,465	9,867	86%	5,950	904	15%	8,931	3,255	36%
Rumphi	8,786	7,477	85%	4,560	605	13%	6,844	1,293	19%
Mzimba North	27,755	25,131	91%	14,405	2,193	15%	21,621	3,130	14%
Mzimba South	16,707	13,011	78%	8,671	1,384	16%	13,015	5,156	40%
Likoma	846	829	98%	439	180	41%	659	205	31%
Central East Zone	68,085	44,835	66%	35,336	4,217	12%	53,038	12,440	23%
Nkhotakota	13,173	6,453	49%	6,837	673	10%	10,262	2,688	26%
Kasungu	18,755	11,707	62%	9,734	620	6%	14,610	2,476	17%
Ntchisi	4,896	3,113	64%	2,541	747	29%	3,814	1,945	51%
Dowa	13,559	10,467	77%	7,037	495	7%	10,562	3,211	30%
Salima	17,702	13,095	74%	9,187	1,682	18%	13,790	2,121	15%
Central West Zone	179,401	149,539	83%	93,109	16,270	17%	139,753	44,437	32%
Lilongwe	111,655	94,632	85%	57,949	11,746	20%	86,979	38,799	45%
Mchinji	18,350	12,252	67%	9,524	2,202	23%	14,295	1,053	7%
Dedza	20,678	19,645	95%	10,732	1,278	12%	16,108	1,482	9%
Ntcheu	28,718	23,010	80%	14,905	1,044	7%	22,371	3,103	14%
South West Zone	272,660	204,220	75%	141,511	26,697	19%	212,402	49,925	24%
Chiradzulu	41,912	28,098	67%	21,752	4,132	19%	32,649	2,738	8%
Blantyre	102,559	74,244	72%	53,228	9,703	18%	79,893	30,081	38%
Mwanza	6,759	5,441	80%	3,508	411	12%	5,265	1,125	21%
Thyolo	57,575	44,252	77%	29,881	5,671	19%	44,851	1,957	4%
Chikwawa	31,750	24,958	79%	16,478	2,061	13%	24,733	3,444	14%
Nsanje	23,207	18,544	80%	12,044	1,863	15%	18,078	3,936	22%
Neno	8,898	8,682	98%	4,618	2,855	62%	6,932	6,643	96%
South East Zone	263,443	188,599	72%	136,727	13,746	10%	205,222	35,552	17%
Mangochi	55,409	40,097	72%	28,757	2,324	8%	43,164	5,883	14%
Machinga	32,444	22,986	71%	16,838	1,198	7%	25,274	4,752	19%
Zomba	59,766	36,501	61%	31,019	4,597	15%	46,558	7,738	17%
Mulanje	58,054	44,674	77%	30,130	2,803	9%	45,224	9,759	22%
Phalombe	35,215	26,149	74%	18,277	1,862	10%	27,432	3,310	12%
Balaka	22,555	18,192	81%	11,706	962	8%	17,570	4,110	23%

\* Given FP: Number of women (18-49 years) on ART who received a modern family planning method from their ART clinic in the reporting period.

\*\* BP screened: Number of adults (30 years +) who had at least one blood pressure reading recorded on their patient card this calendar year.

## 9.6 Intensified TB Case Finding (ICF)

TB is one of the most important HIV-related diseases in Malawi and a considerable proportion of (mainly early) deaths on ART are attributed to undiagnosed TB. ICF is carried out using a standard symptom checklist at every HIV patient visit. ICF outcomes are documented on HIV exposed child, ART patient cards, but routine M&E reporting is currently limited to ART patients in order to reduce the burden of reporting secondary cohort outcomes. It is assumed that implementation of ICF is similar in exposed child follow-up.

**864,157 (99%)** of all patients retained on ART were screened for TB at their last visit before end of March 2021. Out of these, **2,350 (<1%)** patients were classified as new TB suspects. **2,376 (<1%)** patients were confirmed to have TB (clinical or lab based) and **2,344 (99%)** of these were on TB treatment; the remaining 41 had either not yet started or interrupted TB treatment. An excerpt from the data in the **Annex (Cumulative ART outcomes)** is shown below.

ICF not done (Current TB status unknown/ not circ)	6,863	1%
ICF done	864,157	99%
TB not suspected	859,431	99%
TB suspected	2,350	0%
TB confirmed	2,376	0%
TB confirmed, not on treatment	32	1%
TB confirmed, on TB treatment	2,344	99%

## 9.7 HIV-Related Diseases

**Table 6** shows the number of patients treated for key HIV-related indicator diseases. **3,334** patients were started on TB treatment this quarter and HIV status was ascertained for **3,334 (>99%)**; **1,427 (43%)** of these were HIV positive and **1,410 (99%)** of all HIV positives were already on ART when starting TB treatment. **70** patients with Kaposi sarcoma were registered for ART in this quarter.

**Table 6**

Number new cases of key HIV-related diseases registered per quarter (KS = Kaposi Sarcoma)

	TB				KS *
	Tot. cases	HIV status asc.	HIV positive	Already on ART	Tot. cases
2020 Q2	3,471	3,162 91%	1,287 41%	1,170 91%	148
2020 Q3	3,623	3,588 99%	1,576 44%	1,475 94%	71
2020 Q4	3,945	3,924 99%	1,795 46%	1,666 93%	61
2021 Q1	3,334	3,331 100%	1,427 43%	1,410 99%	70

## 10 HIV-Exposed Child Follow-Up

### 10.1 Methods and Definition of Indicators

There are multiple entry points into HIV exposed child follow up: children of HIV infected mothers may be enrolled at birth at maternity / postnatal ward; they may be found at Under 1 or Under 5 Clinics through active screening for HIV exposure; they may be identified when presenting sick to OPD; or they may be seen with their mothers in ART follow-up. Although the targeted enrolment age is below 2 months, children may theoretically be enrolled up to 23 months of age (when HIV infection can be ruled out by rapid antibody test and breast milk exposure is likely to have stopped).

Initial registration data and details for every visit are recorded on an *Exposed Child Patient Card* and a subset of the registration data is copied in the *HIV Care Clinic (HCC) register* (one record per patient). Registration data are reported from the HCC register on a quarterly basis. Follow-up outcomes are reported monthly, selecting children who were **2, 12 and 24 months** old in the respective reporting month. Outcomes are determined from the latest visit details recorded on each card. HIV infection status is evaluated as **known negative** if a negative DNA-PCR or rapid test result was available at the last visit; HIV infection status is evaluated as **known positive** if a positive DNA-PCR result was available at any age or a positive rapid antibody test was available from age 12 months; HIV infection status is counted as **unknown** if HIV infection has not been confirmed and/or a negative test result pre-dated the last visit (assuming on-going HIV exposure through breast milk). All children under 24 months with confirmed HIV infection and those under 12 months with confirmed HIV infection through DNA-PCR or HIV antibody and symptoms of *presumed severe HIV disease* are **eligible for ART**.

The main outcome indicator for the HIV exposed child follow-up program is **HIV-free survival at 24 months of age**. This is defined as the proportion of children who were discharged as confirmed HIV uninfected by the age of 24 months.

### 10.2 HIV Exposed Child Registration Data

**13,888** HIV exposed children were newly enrolled into follow-up during Q1 2021; **11,245 (81%)** of these were under the age of 2 months. The total number of new enrolments (12,191) exceeds by 4,598 (33%) the total number of known HIV exposed children discharged from maternity (9,290). This apparent discrepancy may be explained by delayed enrolment of infants born in previous quarters; by double-counting of infants who transferred between sites; or by identification and enrolment of additional HIV exposed infants after birth. Overall, enrolment into follow-up for known HIV exposed infants appears to be almost complete.

The documentation of follow-up outcomes, particularly the updating of DNA-PCR results on patient cards, remained incomplete at several sites. This has led to an underreporting of ascertainment of HIV status among the 2-month-old cohort.

### 10.3 Birth Cohort Outcomes

There were **11,235** infants in the **2-month age cohort**. **8,239 (73%)** had received a DNA-PCR result. **72 (1%)** of these were confirmed HIV infected. An additional **2** infants were diagnosed with *presumed severe HIV disease*, which means that a total of **74** infants were eligible for

ART. **65 (88%)** of these had started ART. Out of the entire 2-month age cohort, **9,742 (95%)** were retained in exposed child follow-up, **65 (1%)** had started ART and **21 (<1%)** were discharged confirmed uninfected<sup>11</sup>. **32 (<1%)** were known to have died and **421 (5%)** had been lost to follow-up.

There were **12,451** children in the **12-month age cohort**. Current HIV infection status was known for **9,285 (75%)** children (DNA-PCR or rapid antibody test) and **159 (2%)** of these were confirmed HIV infected. **3 (<1%)** additional children had been diagnosed with *presumed severe HIV disease*, which means that a total of **162** children were eligible for ART. **147 (91%)** had started ART. Out of the entire age cohort, **9,503 (85%)** were retained in exposed child follow-up, **147 (1%)** had started ART and **84 (<1%)** were discharged confirmed uninfected.<sup>11</sup> **1,270 (11%)** were lost to follow-up and **114 (1%)** were known to have died.

There were **11,846** children in the **24-month age cohort**. Current HIV infection status was known for **7,908 (67%)** children (DNA-PCR or rapid antibody test) and **207 (3%)** of these were confirmed HIV infected. **3** additional children had been diagnosed with *presumed severe HIV disease*, which means that a total of **210** children were eligible for ART. **189 (90%)** of these had started ART. Out of the entire age cohort, **255 (2%)** were retained in exposed child follow-up, **189 (2%)** had started ART and **7,542 (73%)** were discharged confirmed uninfected. **2,263 (22%)** were lost to follow-up and **152 (1%)** were known to have died.

**Confirmed HIV-free survival at age 24 months** in this quarter was **73%**. This was related to the fact that only **67%** in this cohort had a known HIV status. **3,938 (33%)** children were classified as '*current HIV infection status unknown*' and many of these may be among the **2,263** children lost to follow-up and the **152** children who had died. Only **255 (2%)** were retained in follow-up beyond age 24 months and a final rapid test was not available for these children, possibly due to continued breast feeding. Much progress has been made with scheduled HIV testing (and documentation of test results) at 6 weeks, 12 and 24 months of age.

## 11 PMTCT / ART

The implementation of **PMTCT Option B+** effectively integrated PMTCT and ART services already in 2011. ART may be started and continued at ANC, labour and delivery, and at ART clinics. All infants born to HIV-infected women are supposed to start daily nevirapine prophylaxis for the first 6 weeks of life. Nevirapine syrup is given to women at ANC at the earliest opportunity to take home with instructions how to give it to the new-born.

### 11.1 Data Sources and Reporting Methods

New standard M&E tools for ANC and maternity were implemented in January 2010 and revised in Q2 2012 to reflect the Option B+ policy. ANC and maternity clinic registers and reporting forms include patient management information and all relevant data elements for the maternal and child health and HIV programs. The ANC register was specifically designed to avoid data duplication that previously affected PMTCT reports from ANC due to the

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<sup>11</sup> A small number of children may be rightfully discharged as 'confirmed uninfected' by 2 or 12 months of age if HIV exposure through breast milk has definitely stopped (e.g. maternal death) and a negative HIV test was obtained at least 6 weeks thereafter.

inability to account for individual women's outcomes in the course of multiple visits. The cohort reporting system is designed to aggregate women's outcome data after they have completed their ANC visits. The outcome report is completed for women who started ANC 6 months before the reporting period.

From **Q2 2015**, the PMTCT data elements (HIV ascertainment and ART status) were also added to the first section of ANC reporting form that captures women's status at their first (booking) visit. The ANC report now includes the HIV and ART status at the first visit for women starting ANC in the reporting period and the final HIV and ART status of women who had completed ANC by the end of the reporting period. This addition aims to monitor PMTCT service implementation more closely in time, allowing for corrective action in the course of subsequent visits.

Data from ANC and maternity are collated and presented separately because records do not allow identification of individual women and hence are subject to double counting if not separated.

All patients starting ART are recorded using standard program monitoring tools (ART patient treatment cards and ART clinic registers). **ART baseline data** for all patients registered are reported each quarter from ART clinic registers. **ART outcomes** of all patients ever registered are reported after reviewing the cards of all new patients and of those who were on ART at the end of the previous quarter, updating the status of patients who have subsequently died, stopped or been lost to follow-up. Secondary outcomes such as current regimen, CPT status, side effects, adherence and TB status are reported for all patients retained on ART.

ART scale-up has resulted in a growing proportion of HIV-infected women who are already on ART when getting pregnant. Implementation of *Test & Treat* will further increase ART coverage in this group. **Maternal ART coverage** is estimated from the number of pregnant women who were already on ART when getting pregnant (**maternity reports**) plus those who newly started ART when pregnant (**ART reports**).

**Maternity reports** capture ART status at the time of delivery (up to the time of discharge from the postnatal ward). The timing of ART initiation is categorized into: (any time) before pregnancy; during 1<sup>st</sup> / 2<sup>nd</sup> trimester; during 3<sup>rd</sup> trimester; during labour. About 97% of pregnant women in Malawi attend ANC, but only 83% of women in the general population deliver at a health facility in Malawi. Maternity reports therefore have the potential for undercounting the number of mothers and infants receiving ARVs. However, there is evidence from ANC and maternity reports that almost all the known HIV infected women deliver at health facilities.

Between 2011 and 2020, ART coverage before pregnancy was based on maternity reports. However, there have been repeated observations during supervision that women who started ART during pregnancy were systematically misclassified as "already on ART when getting pregnant" at maternity, leading to a potential overcount. Due to the very high ART coverage rates achieved in Malawi, this overcount has also become apparent in the previous Spectrum model estimates for maternal PMTCT coverage that exceeded 100%. From 2021, the number of women who had started ART before pregnancy is based on the data element "already on

ART when starting ANC” in the ANC service reports. This new method has also been used in the 2021 Spectrum model estimates for PMTCT coverage.

**ART program reports** capture pregnancy (and breastfeeding) status at the time of *ART initiation*, providing information on the number of new women starting ART while pregnant (or while breastfeeding). ART reports do not capture women who become pregnant after starting ART. For the estimation of maternal ART coverage, the number of women starting ART in pregnancy is **adjusted for**:

**a) Double counting** of women starting ART in pregnancy and subsequently transferring to another site. These women are counted multiple times as ‘pregnant at the time of starting ART’ in the quarterly ART cohort reports because the disaggregation of age, sex and reason for starting ART applies to all patients newly registered in the quarter, including transfers in. Separate *ART ‘survival’ analyses* are collected each quarter for women started under Option B+. The proportion of women transferred within 12 months of registration is used to adjust the quarterly number of pregnant women starting ART for transfers.

**b) Failed ART initiation** is thought to be the main underlying reason for early loss to follow-up among the Option B+ cohort. Patients are recorded on patient cards and in clinic registers when the first supply of ARVs is dispensed and all new entrants are counted as ART initiations in the quarterly ART cohort report. Recent operational studies indicate that most pregnant women lost to follow-up within the first 6 months never return after this first dispensing visit and many of these may have never actually started taking ART. The proportion of women lost to follow-up in the 6-month survival analysis is therefore used to adjust the number of pregnant women starting ART in the quarterly ART cohort reports for *failed initiations*.

**Infant PMTCT coverage** is estimated from maternity reports, based on the number of infants born to known HIV-infected women and discharged alive who started nevirapine prophylaxis.

Coverage is calculated by dividing the number of patients served by population denominators. The denominators are derived from expected pregnancies based on population projections and HIV prevalence from epidemiological surveillance (source: Spectrum model for Malawi). There are an estimated 9,551 HIV infected pregnant women in the population per quarter (1/4 of 38,202 in 2021).<sup>12</sup>

## 11.2 ARV Coverage among Pregnant / Breastfeeding Women and Exposed Infants

**9,336 (98%)** of the estimated 9,551 HIV infected pregnant women in Malawi this quarter were on ART. This is based on **6,704** women were already on ART when starting ANC and **2,632**<sup>13</sup> women who newly initiated ART in pregnancy. ART coverage was similar in the previous quarter (>99%).

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<sup>12</sup> 2021 Spectrum model estimates for HIV infected pregnant women in 2021.

<sup>13</sup> 3,653 women registered at ART clinics who were pregnant at the time of starting ART; a) 15.8% are discounted to adjust for double-counting of transfers based on 886 of 5,598 women who transferred within 12 months of registration (12-month Option B+ survival analysis); b) 14.4% are discounted to account for presumed failed ART initiations based on 665 of 4,620 women lost to follow-up within 6 months of registration (6-month Option B+ survival analysis).

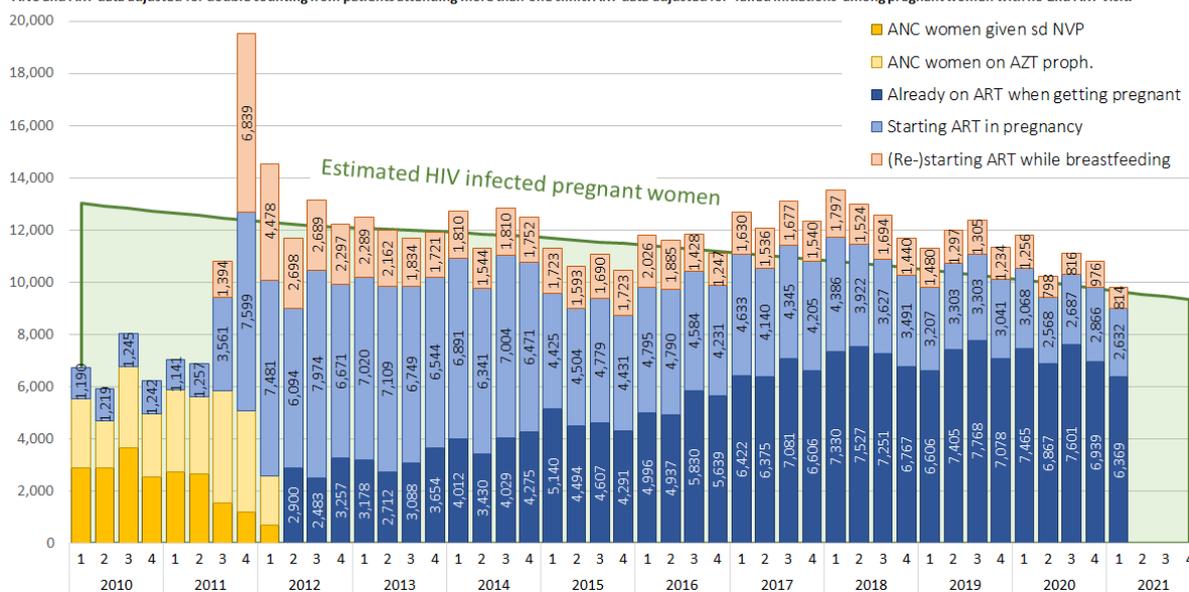
An additional **686**<sup>14</sup> breastfeeding women started ART while breastfeeding (in WHO clinical stage 1 or 2), bringing the total number newly started on ART while pregnant or breastfeeding to **3,318**. Most women starting ART while breastfeeding were probably identified late in maternity or early in the postnatal period, but this group may also include some women who re-initiated after interrupting ART in pregnancy. **8,590 infants** were confirmed to have started NVP prophylaxis at maternity.

**Figure 8** shows the estimated maternal PMTCT coverage between 2010 and the current quarter. All program data have been adjusted for potential double-counting of women who attended more than one ANC clinic in the course of pregnancy, transfers between ART clinics and misclassification of women who initiated ART in pregnancy but were not retained at 6 months after the initiation visit (presumed “failed ART initiations”). The (less effective) single dose NVP regimen and AZT combination prophylaxis had been phased out by April 2012. The average number of pregnant women registered for ART each quarter **increased almost 6-fold** from **1,221** in the 12-month period before introduction of Option B+ to an average of around **6,500** since Q4 2011.

**Figure 8**

**Maternal PMTCT coverage in Malawi**

Women who moved to Option B+ from sdNVP / AZT were double counted between Q3 2011 - Q1 2012. It is likely that <12,000 total women were on ARVs during these quarters. ANC and ART data adjusted for double counting from patients attending more than one clinic. ART data adjusted for 'failed initiations' among pregnant women with no 2nd ART visit.



### 11.3 HIV Services at ANC

The full national data from ANC are presented in the **Appendix**.

<sup>14</sup> 815 women registered at ART clinics who were breastfeeding at the time of starting ART; reduced by 15.8% to adjust for double-counting of transfers based on 886 of 5,598 women who transferred within 12 months of registration (12-month Option B+ survival analysis). Failed ART initiations are thought to be less common among this group, so no further adjustment is made.

### 11.3.1 HIV Ascertainment and ART Coverage

#### Booking cohort:

**159,430** women attended ANC for their first visit between January and March 2021. This is slightly higher than the estimated 159,536 pregnant women in the 2021 population during one quarter.<sup>15</sup> **154,655 (97%)** of women in this cohort had their HIV status ascertained at the first visit. Out of these, **8,335 (5%)** presented with a valid previous test result and **146,322 (95%)** received a new test. A total of **8,914 (6%)** of women were found HIV positive: **6,748 (76%)** of these from a documented previous test and **2,166 (24%)** from a new test. **8,814 (98%)** of all positives received ART: **6,704 (76%)** of these were already on ART when starting ANC; **1,950 (22%)** initiated ART at their first ANC visit and **194 (2%)** started late at 28 + weeks during pregnancy.

#### Outcome cohort:

**157,743** women had started ANC between July and September 2020 and their outcomes were reported between January and March 2021.

**155,575 (99%)** of the outcome cohort had their HIV status ascertained at least once in the course of ANC. HIV ascertainment has remained consistently around 99% over the last quarters. **9,284 (6%)** presented with a valid documented previous HIV test result and **146,288 (94%)** received a new HIV test result at ANC. A total of **10,724 (7%)** women were found HIV positive. This is slightly higher than the latest Spectrum projections (5.9% HIV prevalence among pregnant women in 2021).<sup>12</sup>

**10,612 (99%)** of (known) HIV infected women were on ART by the end of ANC. This represents >99% coverage of the estimated 9,551 HIV positive pregnant women per quarter at the population level. Of the **10,612** ANC women who were known to receive ART **8,249 (78%)** were already on ART when starting ANC, **2,141 (20%)** initiated before 28 weeks of pregnancy and **222 (2%)** initiated during the last trimester of pregnancy. **10,555 (98%)** of HIV infected women at ANC were on Cotrimoxazole Preventive Therapy. **10,417 (97%)** of known HIV infected women attending ANC received the infant dose of ARVs (nevirapine syrup) to take home.

### 11.3.2 Syphilis Screening

**134,118 (85%)** of women in the outcome cohort were tested for syphilis and **3,447 (3%)** were syphilis positive. The syphilis testing rate has recovered considerably from the previous quarter (**64%**) due to transient stock-outs of syphilis test kits at some facilities.

## 11.4 HIV Services at Maternity

The full national data from maternity are presented in the **Appendix**.

Between January and March 2021, **139,169** women were admitted for delivery to maternity; **8,764** of these were referred to another facility before delivery, resulting in **130,405** total admissions to maternity.

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<sup>15</sup> Estimated as ¼ of 638,145 births projected for 2021 (Demographic Projection from Spectrum 2021).

A total of **133,121** babies were born, **128,629 (97%)** were singletons and **4,492 (3%)** were twins/multiples. There were **130,719 (98%)** live births and **2,402 (2%)** stillbirths. **129,883 (99%)** of babies born alive were discharged alive and **836 (1%)** died before discharge.

#### 11.4.1 HIV Ascertainment at Maternity

**131,564 (95%)** women had their HIV status ascertained at maternity. Out of these, **9,185 (7%)** presented with a valid previous HIV test result and **122,379 (93%)** received a new test. A total of **9,387 (7%)** women were HIV positive and **9,150 (97%)** of these had been previously diagnosed while **237 (3%)** received a new positive result at maternity. The **131,564** women whose HIV status was ascertained at maternity represent **82%** of the expected 159,536 women delivering in the population.

HIV exposure status was ascertained for **125,014 (96%)** out of **129,883** babies born and discharged alive. **9,290 (7%)** of these were born to a known HIV positive mother.

#### 11.4.2 ARV Coverage at Maternity

A total of **9,319 (>99%)** of known HIV infected women admitted to maternity received ART. Out of these, **9,003 (97%)** had started ART before pregnancy, **148 (2%)** initiated ART during the 1<sup>st</sup> or 2<sup>nd</sup> trimester, **42 (<1%)** initiated during the 3<sup>rd</sup> trimester and **126 (1%)** initiated ART at maternity.

A total of **8,590 (92%)** of **9,290** infants who were known HIV exposed and discharged alive started daily NVP prophylaxis at maternity. This represents **97%** coverage of the estimated 9,551 HIV exposed infants born in the population in this quarter.

## 12 ART Access and Follow-Up Outcomes

The full national data from the ART Program are shown in the **Appendix**.

### 12.1 New ART Registrations during Q1 2021

By the end of March 2021, there were 754 static ART sites in Malawi. 63% of these sites were managed by government, 19% by CHAM, 5% by NGOs and 13% were private sector clinics that charge a nominal fee of MK500 per monthly prescription of drugs per patient.

Implementation of the Malawi Integrated Clinical HIV Guidelines, which adopted Option B+, started in July 2011, triggering a massive surge in new ART initiations (see **Figure 9**). The new policy for universal ART eligibility (“**Test & Treat**”) was introduced in **May 2016**. This policy led to an unprecedented, transient increase in ART initiations in Q3 2016 when almost all remaining pre-ART patients-initiated ART.

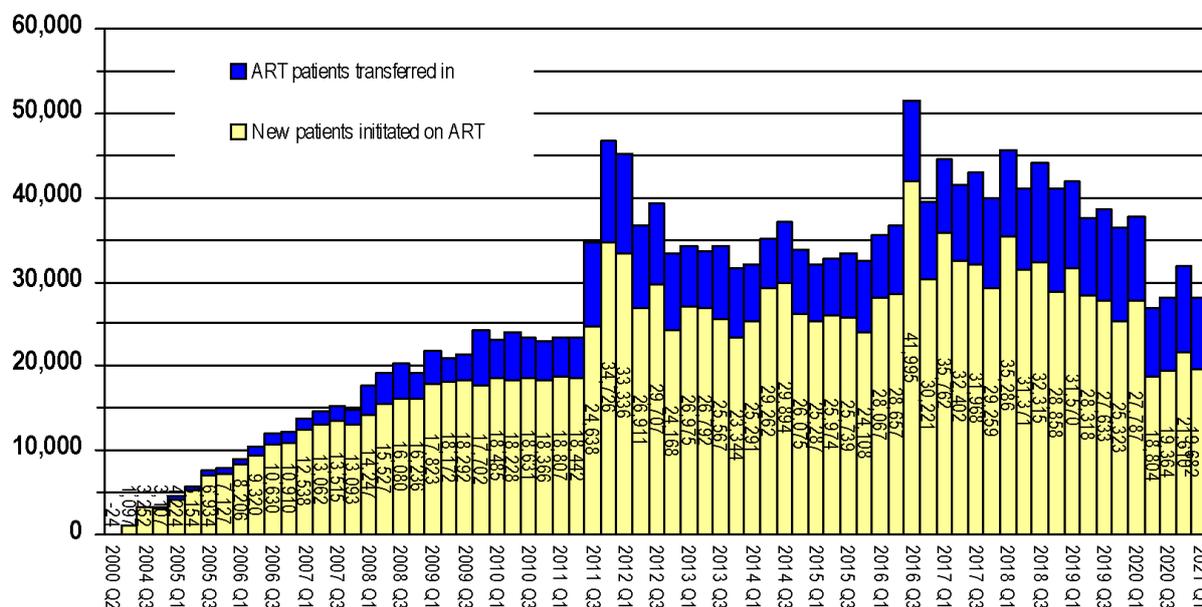
A total of **19,682** initiated ART for the first time in Q1 2021. From 2019 Q1, routine reporting during supportive supervision has included a disaggregation of first-time initiations by sex and pregnancy status. In Q1 2020, **19,617 (>99%)** out of 19,682 first time initiations were disaggregated by sex and pregnancy. Among these, **40%** were males and **60%** were females. Total number of pregnant women amongst first time initiating females was **2,747 (23%)**.

The total number of patients newly initiated on ART represents **98%** of the 20,078 people recorded as newly diagnosed with HIV during the quarter. Among all new ART clinic

registrations<sup>16</sup> in Q1 2021, **39%** were males and **61%** were females. **3,653 (21%)** of the registered females were pregnant at the time of starting ART.

**Figure 9**  
**Patients newly initiated on ART and total ART clinic registrations per quarter**

Total ART clinic registrations include patients who transferred between sites. This results in double counting of patients at the national level. For 'patients newly initiated on ART' every patient is only counted once.



A total of **24,723 (87%)** of all patients registered started in WHO stage 1 or 2 and **18,186 (79%)** of these started as 'asymptomatic' under universal ART eligibility policy. **2,624 (9%)** of patients registered started in WHO stage 3 and **794 (3%)** started in stage four. **43 (<1)** had no documented clinical stage at initiation.

**1,978** children were registered at ART sites in Q1 2021. **426 (21%)** of these were children aged 12-59 months in WHO stage 1 or 2. **20 (<1%)** infants started ART with presumed severe HIV disease. **90** infants in WHO stage 1 or 2 started due to confirmed HIV infection through DNA-PCR. Early infant treatment has remained at about half of the estimated infected infants seen at maternity: considering that 9,536 HIV exposed infants were identified at maternity and assuming a 2% transmission rate among the 97% of HIV positive mothers at maternity who received ART (and 20% transmission in the 3% who did not receive ART)<sup>17</sup>, only about 234 of these known HIV exposed infants may have been infected perinatally during Q1 2021. However, considering the projected 454 new infant HIV infections in the 2021 population per quarter<sup>18</sup>, early infant treatment coverage remains low at an estimated **51%** (234/454). The most significant bottleneck for early infant treatment remains the identification of HIV (probably mostly recently) infected pregnant / breastfeeding women.

<sup>16</sup> These proportions include the 19,682 patients newly initiating ART, but also 8,415 patients previously started on ART who transferred between sites and 250 patients who re-initiated ART after treatment interruption.

<sup>17</sup> UNAIDS Reference Group on Estimates Modelling and Projections (2011). Working paper on mother-to-child-transmission rates for use in Spectrum. Geneva, UNAIDS.

<sup>18</sup> ¼ of the 1,817 estimated new infant infections in the population in 2021 (2021 Malawi Spectrum model)

**571 (2%)** out of all ART clinic registrations were patients with TB: **303 (53%)** had a current and **268 (47%)** a recent history of TB. **61 (<1%)** of patients registered had Kaposi's sarcoma.

## 12.2 Cumulative ART Registrations up to March 2021

By the end of March 2021, there were a cumulative total of **1,901,238 ART** clinic registrations, **1,607,135 (79%)** of whom were patients newly initiated on ART; **363,983(19%)** were patients who transferred between clinics; **26,443 (1%)** re-initiated ART after treatment interruption. Out of all registrations, **37%** were males and **63%** were females, **92%** were adults and **8%** were children (<15 years).

## 12.3 ART Outcomes

**871,098 patients were alive on ART** by the end of March 2021. This is equivalent to **88% ART coverage** among the estimated 986,671 HIV positive population in Malawi in 2021 and it means that the revised national ART scale-up target<sup>19</sup> for March 2021 (87% coverage) has been achieved.

Unlike in previous quarters, an adjustment for patients who were in transit between sites by the end of the quarter cannot be made due to the large-scale reclassification of registration status and outcomes in the context of active tracing initiatives described below.

Out of the 1,901,238 patients ever initiated on ART, **871,098 (46%)** were retained alive on ART, **133,988 (9%)** were known to have died, **418,807 (22%)** were lost to follow-up and **13,741 (8%)** were known to have stopped ART.

An estimated **826,138** adults and **44,960** children (<15 years)<sup>20</sup> were alive on ART by the end of December 2020. This represents **78%** (44,960/ 57,530) and **89 %** (826,138/ 929,141) ART coverage among children and adults, respectively.

### 12.3.1 ART Outcomes Trend

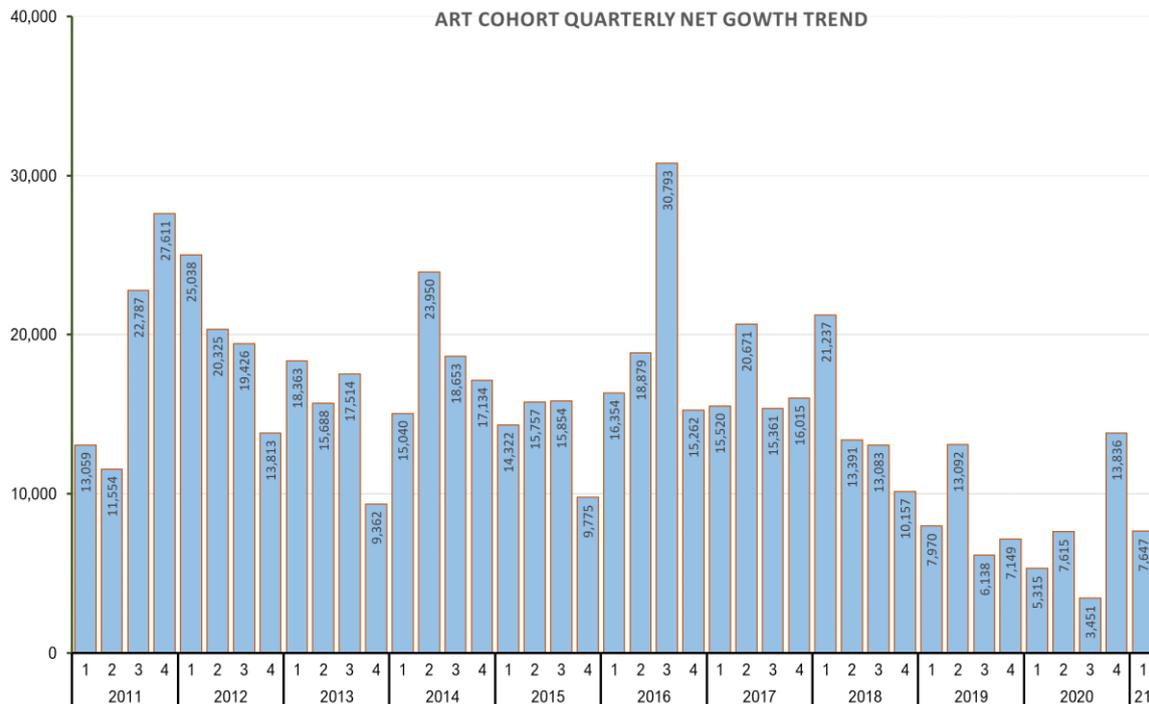
**Figure 10** shows the net increase of patients alive on ART by the end of each quarter. The number of patients retained on ART increased by **7,647** between January and March 2021. This was 45% lower than the net growth in the previous quarter (13,836).

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<sup>19</sup> End of 2019 baseline and subsequent targets from the 2020-2025 National Strategic Plan for HIV.

<sup>20</sup> The total national number of ART patients with current age <15 years is extrapolated from the (5.0%) of all patients at EMR sites who were <15 years at the end of Q1 2021.

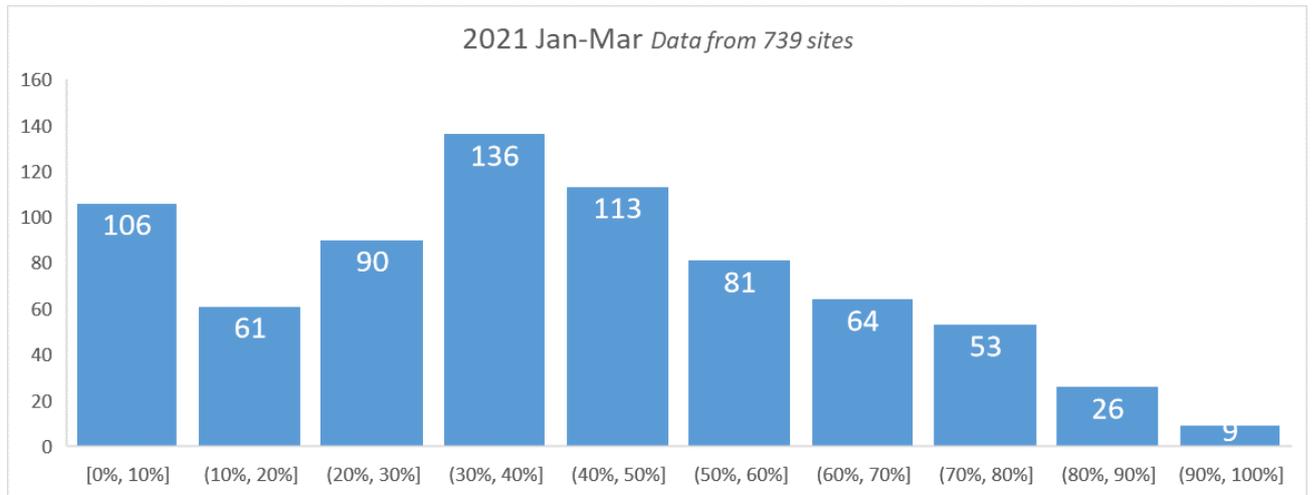
**Figure 10**



### 12.3.2 Differentiated Service Delivery (DSD)

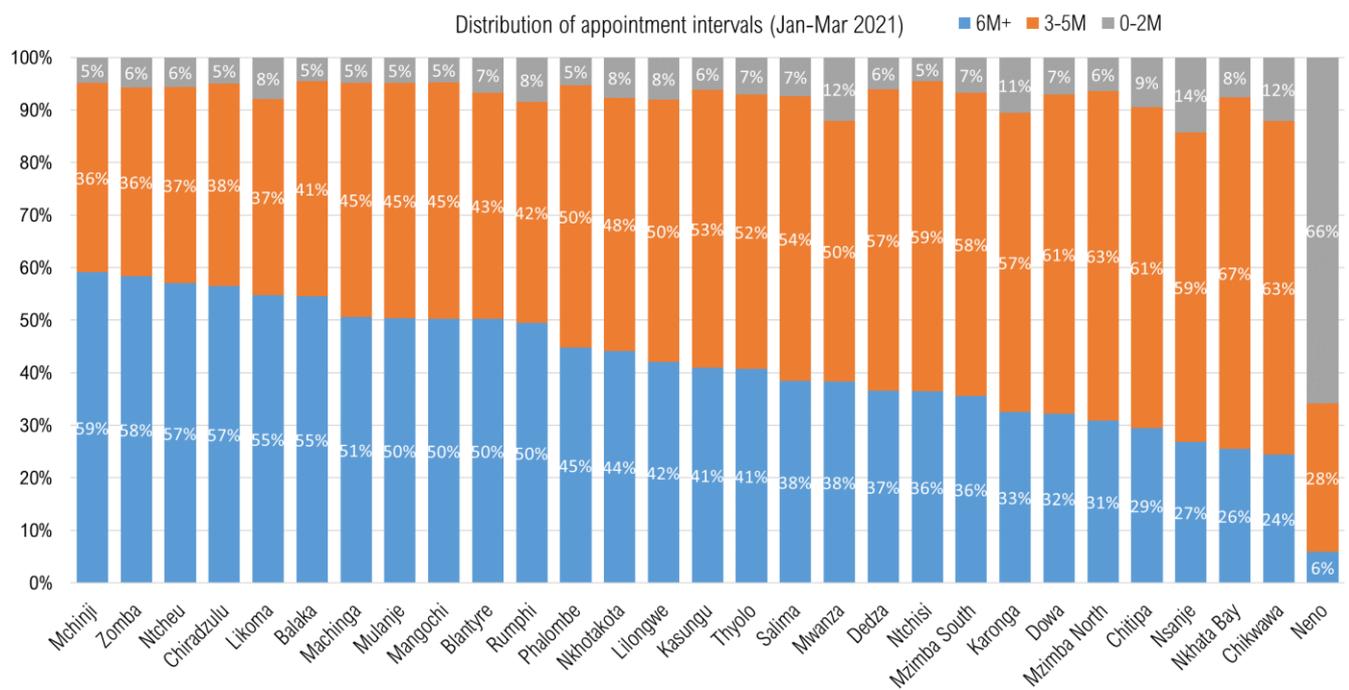
Data on ART dispensing and appointment intervals was available for 739 (97%) of 760 ART sites with EMR (both PoC and eMastercard), covering **831,530 (95%)** of 871,098 patients retained alive on ART. Only **7%** of these received ARVs for less than 3 months (presumably as they had recently started ART or were unstable), **48%** for 3-5 months and **372,206 (45%)** received ARVs for  $\geq 6$  months. As a social distancing measure during Covid-19, the DHA recommended an enhanced implementation of 6-month ARV dispensing for almost all patient groups as one way of decongesting the facilities. **Figure 11** below shows the distribution of the 739 ART facilities by proportion of patients who were given 6 months ARVs at their last recent visit during Q4 2020. This shows that implementation of 6-month dispensing was widespread; **236 (32%)** of the 739 facilities had given  $\geq 6$  months of ARVs to more than half of their patients.

**Figure 11 Number of ART sites by proportion of patients who received 6 month of ARVs at their last clinic visit**

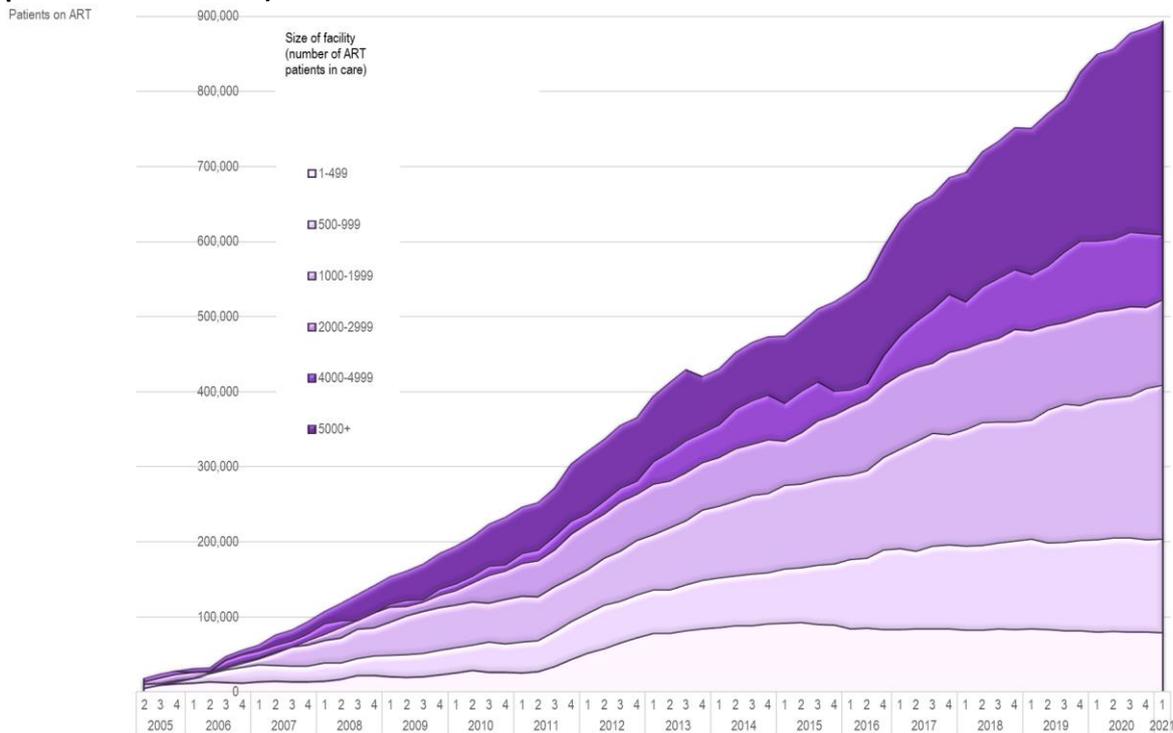


**Figure 12** below shows the distribution of the ART dispensing and appointment intervals by district. Mchinji, Zomba, Ntcheu, Likoma, Balaka, Machinga, Mulanje, Mangochi, Blantyre and Rumphi had given 6-month dispensing appointments to more than half of their patients while 6-month dispensing coverage was only around 20% in Chitipa, Nsanje, Nkhatabay and Chikwawa. Uptake of 6-month dispensing was lowest in Neno at 6%.

**Figure 12**



**Figure 13: Patients alive on ART at the end of each quarter, stratified by size of facility (number of patients alive on ART)**



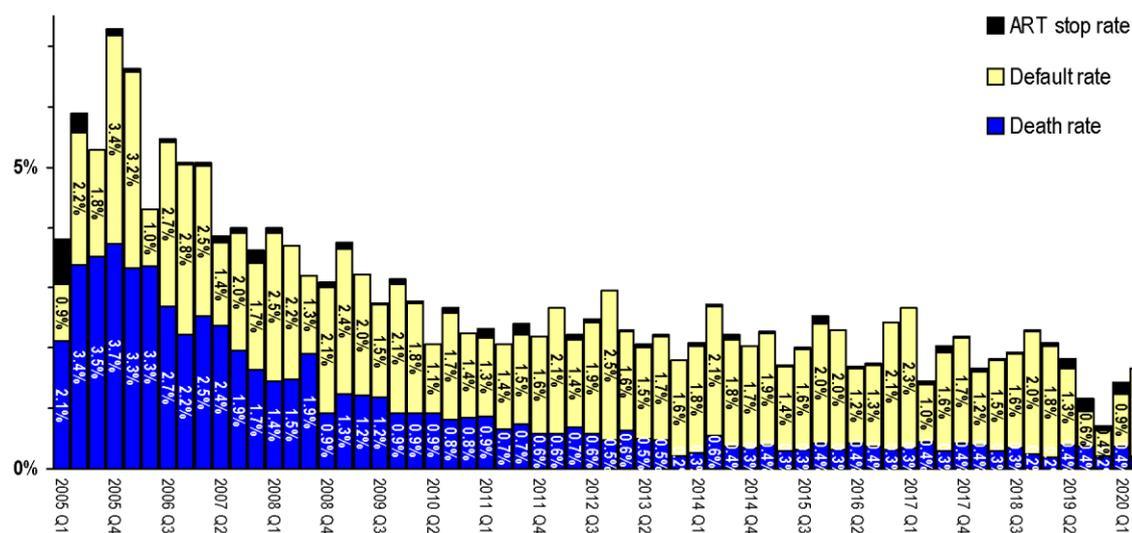
**Figure 13** shows the decentralization of Malawi’s ART program that followed the opening of over 300 new ART sites with the introduction of Option B+ in Q3 2011. During 2012 and 2013, the greatest increase in ART patient numbers was seen at sites with fewer than 500 patients alive on ART. However, patient numbers at the high and ultra-high burden sites have continued to increase considerably in the more recent quarters. By the end of March 2021, **43%** of the national ART patient cohort was in care at sites with fewer than 2,000 patients.

**Figure 14**

**Quarterly rates of ART drop out (ART stop, defaulters and deaths)**

Numerator: new ART stops, new defaulters and new deaths in the respective quarter

Denominator: total patients retained alive at the end of the previous quarter plus new patients registered in the respective quarter)



**Figure 14** shows the considerable decrease of ART drop-out rates since the start of the national program, most of which was contributed by reduction in mortality. Quarterly defaulter rates appeared to have stabilized around 1.8% over the last 5 years, but the calculated attrition rates have fluctuated considerably since 2019. These changes are mainly explained by active tracing efforts organized by implementing partners that have resulted in many patients who were previously reported as LTFU being re-classified as “transferred out” or “died”. Previous active tracing efforts were usually unable to track down patients who were lost more than a few months ago and it is difficult to confirm the validity of this recent large-scale reclassification of follow-up outcomes at the program level.

However, this quarter there has been an increase in the calculated defaulter rate (0.90%) from 0.30% in 2020 Q3. Loss to follow-up (‘defaulters’) include undocumented ‘silent’ transfers, undocumented mortality and patients actually stopping treatment. Efforts to harmonize strategies for patient retention are currently ongoing, including national standard operating procedures (SOPs) and tools for linkage and retention aiming to better track patients who miss appointment and document outcomes.

At national level, there were **2,495** net new deaths, **7,974** net new lost to follow-up and **803** net new confirmed stops in Q1 2021. This translates into a quarterly death rate of **0.28** and a defaulter rate of **0.90 %** among the patients alive and on treatment in this quarter.

**12.4 ART Cohort Survival Analysis**

A 12 month ‘**cohort outcome survival analysis**’ was conducted for patients registered in Q1 of 2020, respectively. A separate 12-month cohort outcome analysis was conducted for children who were under 15 years at the time of ART initiation and who registered for ART in Q1 2020. A further subgroup analysis was done for women who started ART while pregnant or breastfeeding (Option B+).

**76% of adults and 77% of children** were retained alive on ART after 12 months on treatment. 12-month retention rates were lower for adults (73%) and children (76%) in the previous quarter. These programmatic monitoring results remain below the WHO target of 85%, but actual retention rates are thought to be about **10%** higher due to this misclassification of ‘silent transfers’ as ‘defaulters’ in clinic-based survival/retention analysis. A population-based study in Karonga district with individual linkage showed that **92%** of patients started in 2011-2012 were retained after 12 months on ART while routine monitoring data showed **79%** retention rates for the same period.<sup>21</sup>

**6-month group cohort survival** outcomes were known for **4,620** women registered as having started ART under Option B+ in Q3 2020. This is 77 fewer than the number of women registered under Option B+ in the quarterly cohort analysis in Q3 2020. This discrepancy is likely due to errors in data abstraction.<sup>22</sup> The 4,620 women in this cohort survival analysis include 541 (12%) women who transferred between sites. These transfers are double counted and discounted from the denominator (4,079) from the calculation of retention rates.

**3,369 (83%)** women in this cohort were retained at 6 months after registration. Of those not retained, **665 (94%)** were lost to follow-up, **20 (3%)** were known to have stopped ART and **25 (4%)** were known to have died.

**12-month group cohort survival** outcomes were known for **5,598** women registered as having started ART under Option B+ in Q1 2020. This is 22 fewer than the number of women registered under Option B+ in the quarterly cohort analysis in Q1 2020. This discrepancy is likely due to errors in data abstraction.<sup>23</sup> The **5,598** women in this cohort survival analysis include 886 (17%) women who transferred between sites. These transfers are double counted and discounted from the denominator (**4,667**) for the calculation of retention rates.

**3,443 (74%)** of women in this cohort were retained at 12 months after registration. **1,156 (94%)** of those not retained were lost to follow-up, **39 (3%)** were known to have stopped ART and **29 (2%)** were known to have died.

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<sup>21</sup> Koole, O., Houben, R. M. G. J., Mzembe, T., Van Boeckel, T. P., Kayange, M., Jahn, A., Crampin, A. C. (2014). Improved retention of patients starting antiretroviral treatment in Karonga District, northern Malawi, 2005-2012. *Journal of Acquired Immune Deficiency Syndromes* (2014), 67(1), e27–33. doi:10.1097/QAI.0000000000000252

<sup>22</sup> Group cohort survival analyses were not available from some sites with electronic data systems. ‘Reason for starting’ may be reclassified for some patients, leading to minor inconsistencies in patients included in group cohort survival analyses.

<sup>23</sup> Group cohort survival analyses were not available from some sites with electronic data systems. ‘Reason for starting’ may be reclassified for some patients, leading to minor inconsistencies in patients included in group cohort survival analyses.

### 6 month survival OptionB+

#### Survival and retention in ART program

\*

##### ART cohort registration group outcomes

Total ART clinic registrations	4,786	100%
Transfers out (double counted)	700	15%
Total not transferred out (patients in cohort)	4,086	85%
Total alive on ART	3,172	78%
Total not retained	914	22%
Defaulted	872	95%
Stopped ART	23	3%
Died	19	2%

### 12 month survival OptionB+

#### Survival and retention in ART program

\*

##### ART cohort registration group outcomes

Total ART clinic registrations	5,225	100%
Transfers out (double counted)	846	16%
Total not transferred out (patients in cohort)	4,379	84%
Total alive on ART	3,104	71%
Total not retained	1,275	29%
Defaulted	1,217	95%
Stopped ART	25	2%
Died	33	3%

## 12.5 Secondary outcomes of patients retained on ART

871,098 patients who were alive on ART and remained registered at their facilities have documented secondary outcomes.

### ART Regimens

**851,998 (98%)** of patients were on NNRTI- or INSTI-based regimens. Due to the ongoing routine transition of patients from PI-based to DTG-based second line, the number of patients on PI-based 2nd line ART decreased by **2,182** from 20,313 in the previous quarter to **18,131 (2%)** by the end of Q1 2021. **902 (<1%)** patients were on non-standard regimens. Non-standard regimens are not necessarily substandard regimens and include patients continuing an ART regimen that was started outside Malawi, patients in research programmes and patients in specialist care.

Among patients on NNRTI- or INSTI-based regimens, **8,412 (1%)** were on paediatric formulations. Most of these had transitioned from the previous standard first line for children; only **806 (10%)** remained on regimen 2P: AZT/3TC/NVP. A total of **7,217 (86%)** were on regimen 15P: ABC/3TC+DTG. **817,888 (97%)** patients on adult formulations patients on 1<sup>st</sup> line ART were on the new standard first/second line regimen **13A (tenofovir / lamivudine /dolutegravir)** and only **4,338 (1%)** remained on regimen **5A** (tenofovir / lamivudine / efavirenz).

## Adherence to ART

Completeness of adherence reporting has remained very high: **850,463 (98%)** of all patients retained in care had the number of missed doses documented at the most recent visit before end of the quarter evaluated. The classification of adherence levels is based on a combination of physical pill counts and self-reported number of doses missed in the last dispensing interval. **611,707 (72%)** of patients with documented adherence were classified as >95% adherent. The implausibly low proportion with good adherence is inconsistent with the high viral suppression rates in the overall cohort. The classification of 95% adherence based on pill counts has been affected by the long dispensing intervals that are now given to most patients. Therefore, manual and EMR-based classification of dose-adherence may be less reliable.

## ART Side Effects

**851,191 (98%)** patients on ART had information on drug side effects documented at their last clinic visit before end of March 2021. **1,380 (<1%)** of patients with information had documented side-effects. The prevalence of side effects had stabilized at low levels following the full transition to regimen 5A (tenofovir / lamivudine / efavirenz) that started in July 2013 and has declined further following the transition to DTG-based regimens.

### 12.5.1 Viral Load (VL) Monitoring

Routine VL monitoring for patients on ART was introduced in 2012 and the number of patients receiving VL testing has increased considerably over the last few quarters. The programme revised the routine VL monitoring schedules from bi-annual to annual and this means the schedules are at 6 months and 12 months after ART initiation and every year thereafter.

### 12.5.2 Facility data from VL Sample Logbooks and High VL Registers

Facility VL registers were designed to facilitate tracking of samples and results and to improve appropriate follow-up action on high VL results.

**156,729** VL samples were drawn in the reporting period and documented in the facility sample logbook. **133,370 (85%)** of these were for routine/scheduled VL monitoring; **19,233 (12%)** were extra-schedular and **4,126 (1%)** were replacements of lost samples. **20%** of the extra-schedular samples were targeted (suspected treatment failure) and **80%** were follow-up samples after an initial high VL.

Routine reporting of VL results and patient management outcomes is based on a cohort analysis of samples registered 6 months before the reporting period, assuming that all results and follow-up outcomes are complete after this period.

### Final Results from Sample Logbooks

**162,975** samples were drawn by facilities between July and September 2020 and outcomes were documented for **all** of these samples. **50,174 (31%)** results were received at the facility within 4 weeks of sample collection; **37%** were received between 5-8 weeks and **11%** between 9-12 weeks. The remaining **21%** were received after 12 weeks or were still missing. **10%** of patients were notified of their result within 4 weeks of sample collection, **16%** were notified within 5-8 weeks and **19%** within 9-12 weeks. **88,535 (55%)** of 162,975 were either notified after 12 weeks or the notification was still pending. **97%** of the results were printed in the lab

and delivered at the facility and **3%** were electronically transmitted (including point-of-care device results).

**137,744 (85%)** of samples produced valid VL test results. **1,038 (1%)** samples were rejected, or the results were invalid and **24,093 (15%)** of samples had outstanding or missing results. **127,955 (93%)** results were suppressed below 1000 copies/ml and **9,789 (7%)** were high ( $\geq 1000$  copies/ml).

### Outcomes from High VL Registers

Between January and March 2021, **12,218** high VL results ( $\geq 1000$  copies/ml) were received at facilities and entered in the High VL Registers. **10,809 (88%)** of these were from routine monitoring samples, **1,101 (9%)** from targeted samples and **308 (3%)** from repeat samples. **8,006 (66%)** patients had completed intensive adherence support by March 2021 and follow-up samples were drawn for **6,524 (53%)**. Valid results were recorded for **4,671 (72%)** of follow-up samples and **74%** of these were re-suppressed ( $< 1000$  copies/ml).

A final treatment decision was available for **4,387** high VL patients. **3,976 (91%)** were maintained on the current regimen, **365 (8%)** were switched to second line and **46 (<1%)** were referred to HIV specialist.

The overall patient-level impact of the VL monitoring program remained sub-optimal this quarter. The HIV program is planning targeted interventions to reduce turn-around times and to improve health worker capacity for appropriate patient management based on VL results. However, following the mass-transition to DTG-based regimens, there are also implementation challenges with the policy of obtaining a genotype resistance test for all patients with a non-suppressed follow-up VL results on DTG- and PI-based regimens.

### 12.5.3 VL Data from the Laboratory Information Management System (LIMS)

The number of VL results produced decreased slightly from 162,464 in Q3 to **160,166 in Q1 2021**. Malawi now has a total of **13** PCR platforms in **10** molecular labs. All labs used the MOH lab information management system (LIMS) for registration of samples and storage of results. The Diagnostics Department is also piloting the use of point-of-care (POC) VL machines at 10 facilities and the validation results are currently being analysed. The POC data are not included in this report. The following results are based on an analysis of exported LIMS data.

**164,464** VL results were dispatched from the labs to **682 sites** between January and March 2021. **78 sites** accounted for half of all results released this quarter.

**20,733 (13%)** of 162,464 samples processed were plasma and **141,731 (87%)** were DBS.

Lab	Samples Processed			Turn-around Time (Days) <sup>§</sup>
	Plasma	DBS	Total	
DREAM Blantyre	1,033	17,531	<b>18,564</b>	50
DREAM Balaka	158	20,416	<b>20,574</b>	53
Kamuzu CH	5,878	14,904	<b>20,782</b>	64
Mzimba DH	0	6,787	<b>6,787</b>	51
Mzuzu CH	0	13,127	<b>13,127</b>	30
Nsanje DH	0	12,714	<b>12,714</b>	39
Partners in Hope	1,988	21,404	<b>23,402</b>	63
QECH	1,826	9,178	<b>11,004</b>	54
Thyolo DH	0	11,103	<b>11,103</b>	50
Zomba CH	2,666	19,443	<b>22,109</b>	62
<b>Total</b>	<b>13,659</b>	<b>146,507</b>	<b>160,166</b>	<b>54</b>

§ Median days between sample collection and printing of results in lab

Partners in Hope, Zomba CH, Kamuzu CH and DREAM Balaka produced 55 % of all VL results. The median interval between sample collection and printing of results was **54 days** at the national level, ranging from **30 days** at Mzuzu CH to **64 days** at Kamuzu CH. The most significant delays occurred between sample receipt and process run in the lab (median 36 days), while on average only 8 days elapsed between samples draw and sample receipt in the lab. The overall system capacity remains challenged by the high number of samples and competing priorities as the same labs are also handling the Covid-19 samples.

**131,899 (83%)** of VL results released this quarter were classified as *routine scheduled*<sup>24</sup>. This is **61%** of the estimated 217,775 ART patients passing a VL monitoring milestone this quarter. **25,952 (16%)** of samples were classified as *targeted (suspected treatment failure / repeat)* and for **2,315 (1%)** the reason for the sample was 'other' or not specified. **94% (123,953)** of patients with a routine viral load result this quarter achieved viral suppression <1,000 copies/ml. This mean the target for the "3<sup>rd</sup> 95" was slightly missed.

Viral suppression rates were significantly lower for routine samples among children (0-9 yrs: **71%**) and adolescents (10-19 yrs: **81%**) compared with adults in the age groups 20-29, 30-39, 40+ years who had viral suppression rates of **93%, 95% and 95%**, respectively. 93% of routine VL samples were from adults 20+ years. Patient age was not recorded for 2,829 (2%) of routine samples.

Reason	Suppressed		Low-Level Viraemia		Viraemia 1000+		Total
<b>Routine</b>	106,808	<b>81%</b>	17,461	<b>13%</b>	7,630	<b>6%</b>	<b>131,899</b>
<b>Targeted</b>	18,796	<b>72%</b>	4,251	<b>16%</b>	2,905	<b>11%</b>	<b>25,952</b>
<b>Other/unk</b>	1,627	<b>70%</b>	459	<b>20%</b>	229	<b>10%</b>	<b>2,315</b>
<b>Total</b>	<b>127,231</b>	<b>80%</b>	<b>22,171</b>	<b>14%</b>	<b>10,764</b>	<b>7%</b>	<b>160,166</b>

**22,171 (14%)** VL results were classified as low level viraemia (200-999 copies/ml for plasma samples: <839 copies/ml or 840-999 copies/ml for plasma samples). Based on the 2019 national HIV guidelines addendum<sup>25</sup> these results are interpreted as potential treatment

<sup>24</sup> In addition to the reason specified on the lab form, samples were re-classified as 'follow-up' if another sample from the same patient was analysed within 1 year before the current one.

<sup>25</sup> Addendum to the 4<sup>th</sup> Edition of the Malawi Integrated Guidelines and SOPS for Clinical HIV services

failure and therefore in need for enhanced adherence support and a repeat VL sample collection after 3 months. **2,315 (10%) of 25,952** of targeted VL results were  $\geq 1000$  which is indicative of treatment failure and a potential indication for switching to 2<sup>nd</sup> line regimens.

The **25,952** targeted VL results this quarter exceed the 6,525 routine VL results  $\geq 1000$  copies/ml from the previous quarter by a factor of four and this can be attributed to the inclusion of patients with low-level viraemia. Patients with an initial routine VL result  $\geq 1000$  copies/ml are supposed to receive a follow-up VL test after 3 months of intensive adherence support (upon confirmation of good adherence). However, only 6,156 samples were marked as *confirmatory (follow-up)* and 1,472 as *targeted (treatment failure suspected)* on the lab request form. 18,324 were marked as 'routine' and retrospectively classified as *follow-up* due to a previous result collected from the same patient within 1 year before the current sample. This suggests challenges with the classification of reasons for testing, delayed follow-up and/or low utilization of VL results for patient management.

A large proportion of patients with an initial high VL are likely to re-suppress after intensified adherence counselling and the confirmation of treatment failure usually depends on a second VL result of  $\geq 1000$  after 3 months. There was a net decrease of 2,182 patients on protease inhibitor-based (PI) 2<sup>nd</sup> line ART<sup>26</sup> this quarter due to the ongoing routine transition of patients from PI-based to DTG-based 2<sup>nd</sup> line regimens. Regimen lines are no longer distinguishable as PI and INSTI are both used in 1<sup>st</sup> and 2<sup>nd</sup> line ART.

The time on ART was entered for **103,752 (79%)** of 131,899 routine samples registered on the LIMS and only **21,494 (21%)** of these were drawn on schedule (from 1 month before to 3 months after a VL milestone). The proportion of patients with VL  $< 1000$  was **90%, 92%, 94%, 95%** and **95%** at 6, 24, 72, 96 and 120 months on ART respectively. Viral suppression rates of samples drawn on schedule were similar to of 'catch-up' (extra-schedular) samples and samples with unknown timing both at 94%.

## 12.6 TB / HIV Management

**3,331 (99%)** of **3,334** new TB patients had their HIV status ascertained this quarter and **1,427 (43%)** of these were HIV positive. **1,410 (99%)** of HIV positives were already on ART at the time of TB treatment initiation. The number of new ART initiations during TB treatment is tracked by the National TB control program. Total ART coverage among co-infected patients at the end of TB treatment has consistently been  $>95\%$ .

## 13 STI Treatment

This quarter, supervision teams collected STI data from 725 out of 962 facilities offering STI management according to the *2018-19 Malawi Harmonized Health Facility Assessment (HHFA)*<sup>27</sup> in Malawi. The site-level reports included here may therefore only represent 75% of all STI services in Malawi. Supervision teams re-emphasized the importance of complete and accurate documentation at the sites and the data quality is expected to improve further with

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<sup>26</sup> Regimen 13A (tenofovir / lamivudine /dolutegravir) is being used as both 1<sup>st</sup> line and 2<sup>nd</sup> line regimen. Therefore, the classification of first- and second-line patients is no longer clear.

<sup>27</sup> Ministry of Health (2019). Malawi Harmonized Health Facility Assessment 2018-20 Preliminary Report

resumption of regular site supervision for the STI program. The complete set of STI program data collected is included in the Appendix.

### 13.1 Access to STI treatment and coverage

Based on the data collected at the facilities, a total of **85,579** STI cases were treated in Q1 2021. Considering the 75% site-level completeness of reporting, this number is estimated to represent a total of **114,101** STI cases treated. This is equivalent to **41%** of the estimated quarterly 281,075 STI cases in the population (extrapolation from 2015/16 MDHS) <sup>28</sup>.

Out of **86,579** documented clients treated, **36,678 (42%)** were male and **49,901 (58%)** were female. **7,955 (16%)** of female STI clients were pregnant. **11,655 (32%)** of male STI clients were circumcised. **58,356 (67%)** clients were 25 years and above, **20,834 (24%)** were 20-24 years and **7,389 (9%)** were under 20 years old.

### 13.2 Client Type and STI History

**77,501 (90%)** of clients were symptomatic and **9,078 (10%)** were asymptomatic (treated as partners). Among symptomatic clients, **71,269 (92%)** were index cases and **6,232 (8%)** were partners. A total of **21,259** partner notification slips were issued, equivalent to an average of 0.33 slips per index case. Considering the 21,259 partner notification slips issued, **72%** (15,310) of those notified presented to the clinic. **63,584 (73%)** of clients presented with their first lifetime episode of STI; **17,192 (75%)** clients out of 22,995 with previously treated STIs were reported to have had an STI more than 3 months ago and **5,803 (25%)** of clients reported having had an STI within the last three months. Re-occurrence of an STI after a recent episode may be due to re-infection or treatment failure.

### 13.3 HIV Status

HIV status was ascertained for **78,000 (90%)** clients and **13,820 (18%)** of these were HIV positive. **1,609 (12%)** of positives were identified through a new test initiated at the STI clinic, while **12,211 (88%)** presented with a documented previous positive HIV test result. **11,522 (94%)** of clients with a previous positive HIV test result were on ART.

Given the high risk of recent HIV infection among STI clients, all clients with unknown status and those with a new negative test result should be referred for (repeat) HIV testing and counselling. **35,463 (49%)** of the 72,579 STI clients with unknown or new negative test result were referred for repeat HTS. **4,227** patients were reported as “referred for ART”. This exceeds the sum of new positives (1,609) and previous positives not on ART (689) and is likely explained by wrong documentation of ART referrals for patients already on ART.

The rate of HIV status ascertainment at STI clinics has improved considerably over time and high rates have been maintained throughout the COVID-19 period. This is due to increased numbers of dedicated testing staff available at the sites (HDAs). Actual HIV ascertainment rates may be even slightly higher due to weaknesses with back-referral from HIV testing rooms at sites where testing is not provided directly in the STI clinic. It is worth noting that a

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<sup>28</sup> According to the 2015/16 MDHS, 14.7% of women (15-49 years) and 9.6% of men (15-49 years) reported STI symptoms in the past 12 months. A total of 1,124,303 annual STI cases are estimated by applying these proportions to the 4.3 million men and 4.8 million women in these age groups in the 2018 population (NSO projections) for 2021. Quarterly STI cases are assumed as ¼ of the estimated annual cases in the population.

substantial proportion of clients who are aware of their HIV infection present with a new episode of an STI. This may suggest poor translation of positive living strategies promoted during counselling but could also be in small part due to the increased risk of recurrence of HSV-2 and balanitis among HIV-infected clients.

### 13.4 STI Syndromes and Referrals

The most common syndrome was urethral discharge (UD) with **27,208 (29%)** cases, followed by abnormal vaginal discharge (AVD, **26,575**) cases, genital ulcers (GUD, **11,278** cases) and lower abdominal pain (LAP: **9,890** cases). Serologically confirmed syphilis accounted for 11% of the cases. Scrotal swelling, bubo and genital warts each accounted for 1% of cases.

## 14 Supply Chain Management of HIV Program Commodities

### 14.1 Quantification and procurement planning

The routine quarterly quantification and distribution review was based on Q1 2021 ART cohort analysis and physical site level stock data collected during the January 2021 supervision visits. This review informed the quantification of ARVs and test kits and the submission of new orders through Pooled Procurement Mechanism (PPM). The program has also continued to provide quarterly supply planning updates to the Procurement Services Agents (PSA).

Malawi has made significant progress with the planned transition to dolutegravir-based first and second line regimens, which started in January 2019. Out of 871, 098 total patients alive on ART Q1, 845,857 are on Dolutegravir based regimen representing 97% of patients.

In preparation for the planned transition of children <20kg to paediatric DTG 10mg in the 2<sup>nd</sup> half of 2021, the DHA team undertook a detailed quantification for this new product that informed the distribution of the initial limited catalytic procurement (UNITAID/ CHAI) to a subset of high-burden sites and the procurement order for follow-up consignments via WAMBO (Global Fund).

The Department for HIV and AIDS received ARVs and OIs medicine worth **1,405,774** USD from January to March 2021 through I-PLUS Solutions and PFSCM. (Iplus Solutions- 881,813, PFSCM- 440,000 and UNFPA- 83,961)

### 14.2 Quarterly supply chain support during 2021 Q1 integrated supervision

Supply chain and logistics officers from district and central level provided stock management visited 760 sites during the Q1 2021 integrated HIV program site supervision. This included a physical inventory at all sites and ad-hoc mentoring in stock management at health facilities with poor performance. There was a further overall improvement in site-level stock management for HIV commodities. The supply chain team monitored logistics tools documentation including use of Daily Activity Registers and completion of stock cards.

**Table 7** shows the total stocks found at the sites and in the central warehouse, and the estimated consumption rates for all commodities.

### 14.3 Availability of ARVs and test kits

Adequate stock levels of TLD in packs of 30 and 90 tablets were maintained at over 763 sites during this period, with an appropriate ratio of 673,414 packs of 30's and 372,694 packs of 90's. This has enabled sites transition patients eligible for 6-month dispensing with no stock out risk in country.

A global supply shortage of zidovudine caused significant delays in planned shipments of the zidovudine/lamivudine 300/150mg fixed-dose combination in 2020. This resulted in critical shortages at central and facility-level, affecting mainly patients on PI- and DTG-based 2<sup>nd</sup> line treatment. By January 2021, the central level stock covered only 1.4 months of consumption and several facilities stocked out during Q1 2021, requiring rationing through shortened dispensing intervals and relocation of remaining stocks between facilities. Supported by recent findings from the NADIA trial<sup>29</sup>, many facilities substituted patients from zidovudine to tenofovir. The actual number of patients substituted is not available from routine reporting but based on the decline in the total number of patients on AZT-based regimes, about 2,000 patients were affected by this transition. However, towards the end of the quarter 56,623 packs of AZT/3TC (equivalent to 6.6 MoS) were received and the facility supplies have normalized.

Syphilis screening rates at ANC had declined considerably in the previous quarter due to stock-outs at several facilities related to the undocumented use outside of guidelines. Additional supplies through CMST were evidently very low and inadequate. However, syphilis screening rates recovered to 85% this quarter following resupply in distribution round 58, 59 and 60.

### 14.4 Bimonthly distribution of HIV & Malaria Commodities

Two scheduled bimonthly distribution rounds (59 and 60) of HIV commodities including laboratory items were carried out between January and March 2021. All of the remaining packs of tenofovir/lamivudine/efavirenz 300/300/600mg (TLE), equivalent to 1.3 months of stock, were distributed to the facilities.

During Q1 2021, the logistics team at the Department of HIV and AIDS coordinated **2,932 individual commodity transactions** between ART sites to mitigate stock imbalances (44% ARVs; 28% Test kits; 27% Others). All transactions were managed and authorized using the HIV Department Supply Chain Hot Line, a toll-free facility that was set up to facilitate communication between the health facilities and the central level. Health workers could communicate supply chain and other HIV commodities related issues that need to be resolved by the technical team at the department in a timely manner.

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<sup>29</sup> <https://www.croiconference.org/abstract/nucleosides-and-darunavir-dolutegravir-in-africa-nadia-trial-48wks-primary-outcome/>

**Table 7**

Total stocks of HIV program commodities at all sites visited during the 2021 Q1 supportive site supervision. Stock positions are from the date of the visit (between 1-4 weeks after the end of the quarter). Warehouse stock positions are from 31/05/2021

Inventory unit	Item	Sites with any Stock	Total Physical Stock		Consumption/ Month	Months of Stock *	
			At Sites	In Warehouse		At Sites	Wareh.
<b>tins</b>	ABC / 3TC 120 / 60mg tins (30 tabs)	637	201,674	572,631	59,232	3.4	9.7
	ABC / 3TC 600 / 300mg tins (30 tabs)	659	64,571	68,114	13,689	4.7	5.0
	ATV / r 300 / 100mg tins (30 tabs)	595	50,280	33,328	4,785	10.5	7.0
	AZT / 3TC / NVP 300 / 150 / 200mg tins (60 tabs)	498	129,730		383	338.7	
	AZT / 3TC / NVP 60 / 30 / 50mg tins (60 tabs)	631	223,344	4,881	2,015	110.8	2.4
	AZT / 3TC 300 / 150mg tins (60 tabs)	627	27,771	77,444	11,670	2.4	6.6
	AZT / 3TC 60 / 30mg tins (60 tabs)	117	5,483	24,982	558	9.8	44.8
	DRV 600mg tins (60 tabs)	23	2,391	1,850	0	0.0	0.0
	DTG 50mg tins (30 tabs)	622	72,783	124,216	27,947	2.6	4.4
	EFV 200mg tins (90 tabs)	167	1,908	376	18	106.0	20.9
	EFV 600mg tins (30 tabs)	194	5,081	5,677	192	26.5	29.6
	LPV / r 100 / 25mg tins (60 tabs)	540	37,083	75,031	19,306	1.9	3.9
	LPV / r 200 / 50mg tins (120 tabs)	690	13,565	8,703	628	21.6	13.9
	LPV / r 40 / 10mg tins (120 granules)	609	60,277	44,163	7,515	8.0	5.9
	LPV / r 40 / 10mg tins (120 pellets)	10	186		0	0.0	0.0
	NVP 200mg tins (60 tabs)	433	29,225		192	152.2	
	NVP 50mg tins (60 tabs)	5	101		38	2.7	
	r 100mg tins (60 tabs)	27	1,500		148	10.2	
	r 25mg tins (30 tabs)	79	2,521	23,274	1,266	2.0	18.4
	RAL 25mg tins (60 tabs)	44	897	922	0	0.0	0.0
RAL 400mg tins (60 tabs)	0	0		0	0.0	0.0	
TDF / 3TC / DTG 300 / 300 / 50mg tins (30 tabs)	725	815,604	1,021,658	163,578	5.0	6.2	
TDF / 3TC / DTG 300 / 300 / 50mg tins (90 tabs)	729	329,585	1,375,355	218,098	1.5	6.3	
TDF / 3TC / EFV 300 / 300 / 600mg tins (30 tabs)	734	248,717		4,338	57.3		
TDF / 3TC 300 / 300mg tins (30 tabs)	397	26,613	35,849	2,367	11.2	15.1	
<b>bottles</b>	Fluconazole (generic) 50mg / 5ml bottles (35 ml)	12	1,378				
	NVP 50mg/5ml bottles (100 ml)	630	47,058	51,450	6,097	7.7	8.4
<b>vials</b>	Amphotericin B Liposomal 50mg vials (10 each)	46	7,691	343	0	0.0	0.0
	Benzathine Penicillin 144g vials (50 each)	565	86,995	82,400	14,286	6.1	5.8
	Bleomycine 15,000IU vials (1 each)	42	12,012	24,261	28	429.0	866.5
	Ceftriaxone 1g vials (10 each)	352	131,948		163,529	0.8	
	Depo-Provera 150mg/1ml vials (25 each)	498	710,235		236,448	3.0	
	Fluconazole (Diflucan) 2mg / 1 ml vials (10 ml)	41	8,622	9,935	0	0.0	0.0
	Gentamicin 80mg / 2ml vials (50 each)	431	222,417		153,888	1.4	
	Paclitaxel 6mg/ml vials (1 each)	37	3,281	8,255	0	0.0	0.0
	Streptomycin 1 g vials (50 each)	0	0				
	Vincristine 1mg / 1ml vials (1 each)	40	30,462	970	168	181.3	5.8
<b>tabs</b>	Aciclovir 200mg blister packs (500 tabs)	7	34,621		985,751	0.0	
	Aciclovir 200mg tins (100 tabs)	234	354,779	13,608,100	452,971	0.8	30.0
	Azithromycin 500mg blister packs (3 tabs)	487	38,628		3,849	10.0	
	Ciprofloxacin 500mg blister packs (100 tabs)	405	297,990	2,156,600	56,605	5.3	38.1
	Clotrimazole 500mg boxes (1 each)	517	150,749	30,685	8,305	18.2	3.7
	Codeine 30mg tins (100 tabs)	23	409,973				
	Cotrimoxazole 100 / 20mg blister packs (1000 tabs)	656	74,254,463	215,839,000	19,999,372	3.7	10.8
	Cotrimoxazole 400 / 80mg tins (1000 tabs)	565	20,217,280		25,851,140	0.8	
	Cotrimoxazole 960mg blister packs (1000 tabs)	612	22,040,414	46,802,000	25,610,281	0.9	1.8
	Doxycycline 100mg blister packs (500 tabs)	409	1,187,792		9,850,758	0.1	
	Doxycycline 100mg tins (1000 tabs)	251	1,563,415	9,617,000	6,908,757	0.2	1.4

Inventory unit	Item	Sites with any Stock	Total Physical Stock		Consumption/ Month	Months of Stock *	
			At Sites	In Warehouse		At Sites	Wareh.
	E thambutol (E) 100 mg blister packs (100 tabs)	148	119,606				
	E thambutol (E) 400 mg blister packs (672 tabs)	25	23,663				
	Erythromycin 250mg tins (100 tabs)	141	298,243	2,219,500	179,347	1.7	12.4
	Erythromycin 250mg tins (1000 tabs)	77	202,886		6,097,686	0.0	
	Fluconazole (Diflucan) 200mg blister packs (100 ca)	127	216,906	1,823,300	0	0.0	0.0
	Fluconazole (Diflucan) 200mg tins (28 tabs)	79	220,454		0	0.0	0.0
	Flucytosine 500mg blister packs (100 tabs)	36	18,144	125,000			
	Ibuprofen 200mg tins (100 tabs)	116	1,363,172		1,321,423	1.0	
	Isoniazid (H) 100mg blister packs (100 tabs)	290	262,609				
	Isoniazid (H) 300mg blister packs (672 tabs)	491	4,594,109	41,413,344	973,669	4.7	42.5
	Isoniazid (H) 300mg tins (1000 tabs)	8	15,822		25,610,281	0.0	
	Metronidazole 200mg tins (1000 tabs)	462	11,412,298	25,208,000	0	0.0	0.0
	Morphine 10mg blister packs (60 tabs)	45	161,105		336,746	0.5	
	Morphine 30mg blister packs (30 tabs)	23	57,309	67,560	0	0.0	0.0
	Pyridoxine 25mg tins (100 tabs)	536	5,329,179	70,556,400	973,669	5.5	72.5
	RH 150 / 75 mg blister packs (672 tabs)	404	2,104,642				
	RH 75/50mg blister packs (84 tabs)	163	189,847				
	RHZ 75/50/150mg blister packs (84 tabs)	202	142,646				
	RHZE 150/75/400/275mg blister packs (672 tabs)	397	1,285,794				
	Rifapentine 150mg tins (24 tabs)	3	442	1,248,912	591,734	0.0	2.1
<b>sheets</b>	ART pat. card adult (yellow) Ver8 bundles (50 she	497	175,331		57,575	3.0	
	ART pat. card paed. (blue) Ver 8 bundles (50 she	494	34,634		3,892	8.9	
	Exposed child card (pink) Ver2 bundles (50 sheet	520	53,147		4,615	11.5	
	Family HTC Referral Slip bundles (100 sheets)	425	263,242	5,356			
	Polythene sleeve bundles (100 sheets)	52	9,249		14,031	0.7	
	STI Partner Referral Slip bundles (100 sheets)	68	62,578				
<b>tests</b>	Cryptococcal antigen CrAg bundles (50 each)	117	61,191	27,450	0	0.0	0.0
	DBS kit (filter paper, lancet, etc.) 70ul boxes (50 t	701	312,564	151,150	92,649	3.4	1.6
	Determine HIV1/2 boxes (100 each)	614	499,425	540,800	182,517	2.7	3.0
	Determine TB LAM Ag bundles (100 each)	105	26,299	200			
	OraQuick HIV Self-test bundles (25 each)	554	408,041	325,800	104,724	3.9	3.1
	SD Bioline Syphilis boxes (30 each)	486	93,186	1,500	52,544	1.8	0.0
	Uni-Gold HIV1/2 boxes (20 each)	638	82,241	76,760	19,338	4.3	4.0
<b>pieces</b>	Condoms female boxes (1000 each)	356	460,540	3,066	289,378	1.6	0.0
	Condoms male boxes (144 each)	631	20,787,704	10,397,232	6,113,860	3.4	1.7

\* 'Consumption per month' and 'Months of stock' for ARVs, CPT, INH and HIV test kits are based on the respective patient-regimen groups in the standard service reports. Estimates are based on the number of patients on the respective regimen at the end of the quarter evaluated and do not account for potential (positive or negative) growth. Facility stock positions for OI and STI drugs include HIV Program and other supply sources. Total national consumption and MoS estimates are used for these commodity groups. 'Months of stock' is calculated from the day of the physical stock count, which is on average 1 month after the end of the quarter.

## 15 Training and Mentoring

In compliance with Covid-19 guidelines, most planned trainings were suspended and only a few critical ones were conducted as reported below:

### 15.1 HIV Testing Services

62 HTS providers from 9 facilities were trained for the combined field evaluation of the new 3-test algorithm and the ScanForm pilot for the new professional HTS and self-test distribution registers customized for artificial intelligence data abstraction from smartphone images.

72 participants were trained and certified for administration and distribution of self-tests.

## 16 Participants in the Q1 2021 Supervision (12-23 April 2021)

Sophie Bakali (, other)	Primo Chirwa (, MOH)	Elisa Kapundi (NMT, MOH)
Chikondi Banda (, MOH)	Thom Chirwa (, MOH)	Annie Kaseka (RNM, MOH)
Knox Banda (TB Zonal Supervisor, MOH)	Thomson Chirwa (, moh)	Oscar Kasiyamphanje (Nurse, CHAM)
Leonard Banda (, MoH)	Fraser Chisale (, MOH)	Joseph Kasola (CO, MOH, Chitipa DH)
Sam Banda (, moh)	Stella Chitawo (, MOH)	Catherine Kassam (, MOH)
Samuel Banda (, MOH)	Andy Chitsulo (, MOH)	Rodrick Kaulere (CO, CHAM (Sister Tereza))
Wells Banda (CO, MOH)	Samson Chitsulo (, other)	Absalom Kaunda (CO, MOH, Mzimba DHO)
Robert Beston (, MOH)	Madalitso Chiundira (, MoH)	William Kaunda (, Salima)
Thomas Biseck (, MOH)	Dan Chiundu (, MOH)	Mayesero Kauwo (, moh)
Annie Biza (, moh)	Paul Chiwenkha (, moh)	Jean Kayamba (Nurse, MOH)
Felix Botha (, MOH)	Stuart Chuka (CO, MBCA)	Mera Kayira (CO, MOH)
Regina Bwanah (, MOH)	Chama Chungwa (, MoH)	Sydney Kubwalo (, MoH)
Regina Bwanali (, MOH)	Peter Donda (CO, Dedza DH)	Limbani Kumambala (CO, BAYLOR)
Herbert Chafulumira (, MOH)	Mnyila Fainala (, moh)	Hope Kumwenda (, MoH)
Demobry Chagomerana (, MoH)	Lackson Gama (, MoH)	Temweka Kumwenda (, moh)
Dennis Chakhota (, MOH)	Felix Genti (, MSH)	Wongani Kumwenda (, MOH)
Lincy Chalunda (CO, MOH)	Richard George (, MOH)	Charles Kwenje (, Moh)
Rachel Champiti (, MOH)	Sidrick Golden (, MOH)	Johannes Lahoe (, MOH)
Raymond Changamire (, Chemonics)	Bertha Gombeza (, MOH)	Charlie Lawrence (, MOH)
Lawrena Charlie (, moh)	Patrick Gomia (, MOH)	George Lipande (CO, MOH)
Rosemary Chasweka (, MOH)	Grant Gondwe (, NTP)	Jesse Lobeni (Nurse, MOH)
Ronard Chawinga (nurse, MOH)	Sidder Hambisa (ENM, MOH)	Regina Longwe (, MOH)
Chikaiko Chibwana (CO, MOH)	Miriam Hanjahanja (, cham)	Patricia Ludaka (, MoH)
Maggie Chigona (, MoH)	Louis Hawonga (, MOH)	Bertha Luhoma (, MoH)
Margaret Chigona (CO, Blantyre DHO)	Elias Jambo (, moh)	Diana Lweshwa (, MoH)
Patrick Chikafa (, Lilongwe DHO)	Kelvin Jobo (CO, Lighthouse)	Rose Mabviko (, MOH)
Grace Chikhwaya (, MOH)	Emmanuel Jumbe (CO, NGO)	Belito Madetsa (CO, MOH)
Kondwani Chikoti (CO, MOH)	Davie Juwa (, partners in Hope)	Emmanuel Magombo (, MOH)
Patrick Chikuni (, MoH)	John Kabichi (CO, MOH)	Chikayiko Majamanda (Nurse, MOH)
Lusayo Chikuta (, Nkhatabay)	John Kabitchi (, other)	Mercy Makaika (Nurse, MOH)
Victor Chikwapulo (, pvt)	Francis Kachali (, MoH)	Chifundo Makuluni (Nurse, MOH)
Verydear Chilapondwa (, MOH)	Lilian Kachali (Nurse, MOH)	Felix Mala (, MOH)
Dickens Chimatiro (, MOH)	Arlene Kachapira (, MoH)	Lusayo Malanga (, MoH)
Peter Chimphero (CO, MOH)	Ruth Kachitsa (, MoH)	Grey Malata (, MOH)
Patience Chingwalungwalu (, MoH)	Matthews Kadewa (, I-TECH)	Richard Mali (CO, CHAM)
Benjamin Chinoko (, MOH)	Blessings Kadzuwa (, MOH)	Pauline Maluwaya (, MOH)
Yunus Chiosa (, NTP)	Vera Kajawa (Nurse, MOH)	Joe Manje (, MOH)
Diana Chipande (, MOH)	Enipher Kalengamaliro (, MOH)	Cecilia Manyawa (Nurse, MOH)
Grace Chipanga (Nurse, Private)	Joseph Kalino (Clerk, CHAM)	Fatsireni Mapulanga (, MOH)
Clement Chiphotla (CO, MoH)	Mayesero Kaliwa (, MOH)	Angela Masumba (, moh)
Exvin Chipoya (, MoH)	Mike Kalulu (CO, MOH)	Jake Mataya (, moh)
Mary Chipula (, LIGHTHOUSE)	Richard Kamalizeni (, MOH)	Jeke Mataya (, moh)
Esnart Chirambo (, MoH)	Blessings Kamanga (Clerk, MOH)	Yamikani Matiya (, MoH)
Ruth Chirombo (, MOH)	Biziwick Kambewa (, MOH)	Hannock Matupi (ARV clinician, MOH, Rumphu DH)
Patrick Paul J M Chirwa (TB Zonal Supervisor, NTP)	Mary Kamiza (TB Zonal Supervisor, NTP)	Rose Maviko (Nurse, Limbe HC)
	Emmanuel Kampaliro (, MOH)	
	Gift Kamphika (MA, MOH)	
	Jacqueline Kamwana (, Moh)	
	Mercy Kamwela (, supervisor)	
	Mercy Kamwera (, MOH)	
	Towera Kamzuzeni (, MOH)	
	Lameck Kaonga (, Lighthouse)	
	Justice Kaphiri (, NTP)	

Benjamin Mazalo (CO, SUCOMA Clinic)	Harold Mwaleya (MA, MOH)	Joe Nkhonjera (, moh)
Felix Mbalale (CO, MOH)	Innocent Mwaluka (, moh)	Vitu Nkhunga (, MOH)
Nyuma Mbale (, MOH)	Innocent Mwaluluka (, moh)	George Nsitu (, MOH)
Loyd Mbaza (, other)	Miriam Mwansambo (, MoH)	Judith Ntopa (Nurse, Cobbe Barracks)
Kingsley Mbewa (CO, MOH)	Nancy Mwapasa (, MoH)	Aleka Nyasulu (, moh)
Brenda Mbewe (, MoH)	Golden Mwachunga (MA, Press)	Alekazawo Nyasulu (, MOH)
Alice Mdolo (, MOH)	Christina Mwinjiwa (, MOH)	Jotham Nyasulu (, MOH)
Topcy Mdolo (, MOH)	Tuwepo Mwitha (, MOH)	Steven Nyika (, MOH)
Dalitso Midian (, moh)	Riff Mzava (Nurse, MOH)	Feliya Nyirenda (, Machinga)
Dalitso Midiani (PMTCT Officer, MOH)	Peter Mzumala (, Mzimba North)	Janet Nyirenda (, MOH)
Christopher Misomali (Lab Tech, MOH)	Peter Mzumara (ART clinician, MOH)	Mabvuto Nyirenda (, MOH)
Alex Mission (, MOH)	Eric Mzungu (, moh)	Mike Nyirenda (CO, Lighthouse)
Portifer Mission (, moh)	Fred Namalima (MA, MOH)	Veronica Nyirenda (, moh)
Joel Mkandawire (, MoH)	Nelson Namchinga (, Thyolo DHO)	Abdul Richard Onani (, MOH)
Pax Mkupani (Logistics Fellow, MOH)	Nelson Nanchinga (, MOH)	Chrissy Padoko (, MOH)
Chimwemwe Mlenga (, MOH)	Pepsy Nangwale (Nurse, MOH)	Jones Pensulo (, MOH)
Mumberanji Mlengi (, moh)	Leonard Ndhlovu (Nurse, MOH)	Henry Phiri (, MOH)
Daniel Mlongoti (, moh)	Overton Ndhlovu (, MOH)	Linda Phiri (, MOH)
Christopher Mlotha (, MoH)	Overtone Ndhlovu (CO, MOH)	Linna Phiri (, PIH)
Pricaria Mmela (, MOH)	Leonard Ndhovu (, moh)	Mackson Phiri (, PIH)
Yvonne Mnjeza (, MOH)	Joel Ng'ambi (, MOH)	Moffo Eddie Phiri (, COM)
Henry Mphonde (CO, Lighthouse)	Mwai Ng'ambi (, MOH)	Precious Phiri (, MoH)
Tryness Mponda (NMT, MOH)	Youngson Ngonya (, MoH)	Tifera Phiri (, MOH)
Willie Mpute (, MoH)	Mary Ngulama (, MOH)	Stanley Phombo (Nurse, MOH)
Evanca Msiska (, MOH)	Etta Ngulube (, MoH)	Macleod Piringu (ART CORDINATOR, MOH)
Christopher Msomali (, moh)	Chisomo Ngwalo (, COM)	Kelvin Rambiki (Clinic Coordinator, Private)
Catherine Flora Msukwa (, MoH)	Charles Ngwira (, MoH)	Beston Robert (, MOH)
Sosten Mtalika (, Dedza)	Eunice Ngwira (, MOH)	Alice Sajeni (, moh)
Angella Mtambalika (, MOH)	Hislack Ngwira (, MOH)	Dorica Sambo (Nurse, MOH)
Temweka Mtenje (, MoH)	Beatrice Nindi (, MoH)	Oscar Shaibu (, MoH)
Kelvin Mtumodzi (, queens)	Trevor Chifundo Nindi (, Balaka DHO)	Felix Sibande (, MOH)
Dave Muhasuwa (, MoH)	Dumbo Njera (, MOH)	Juliana Soko (ARV nurse, MOH, Livingstonia MH)
Agnes Mulilima (, moh)	Ivone Njeza (, moh)	Delirah Stephano (, MOH)
Dalitso Muonjeza (, supervisor)	Merium Nkangala (, moh)	Ethel Susuwele (MA, MOH)
Fainala Muyila (Nurse, MOH)	Grace Juma Nkhata (Nurse, MOH)	Mark Suzumire (CO, MOH)
Tereza Mvula (, MOH)	Relia Nkhata (, other)	Cecelia Tenesi (Nurse, MOH)
Ruockia Mwachumu (Nurse, MOH Nsanje DHO)	Thomas Nkhata (, MOH)	Biseck Thomas (, MOH)
Jeremiah Mwale (CO, EGPAF)	Angela Nkhoma (Nurse, MOH)	Harry Tsapa (CO, MOH)
Thomas Mwale (, MOH)	Hannah Nkhoma (, MOH)	Annie Tsokalida (, MOH)
		Lloyd Wella (CO, MOH)
		Mabvuto Zondola (, MOH)

We thank all facility staff for their sincere welcome and co-operation with the HIV Department and its partners during these supportive visits. We congratulate all staff for their excellent work.

13<sup>th</sup> July 2021

## 17 Appendix (Full National HIV Program Data)

# HTC site report

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

## Clients at health facility (static)

### HTC client details

\*

#### Total HTC clients served

Total HIV tested	641,270	100%
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#### Sex

Males tested	206,073	32%
Females tested	435,197	68%
Females non-pregnant	261,519	60%
Females pregnant	173,678	40%

#### Age

Children 0-14 yrs	54,442	8%
Children below 12 mths (Age group A)	978	2%
Children 12 mths - 14 yrs (Age group B)	53,464	98%
Adults 15+ years	586,828	92%
Young adults 15-24 years (Age group C)	274,788	47%
Older adults 25+ yrs (Age group D)	312,040	53%

#### HTC access type

PITC	517,827	81%
Family Referral Slip (FRS)	22,916	4%
Other (VCT, etc.) HTC access	100,527	16%

#### HTC first time / repeat

Never tested before	122,499	19%
Previously accessed HTC	518,771	81%
Last negative	496,569	96%
Last positive	21,436	4%
Last exposed infant	309	0%
Last inconclusive	457	0%

#### Counseling session type / Partner present

Counseled with partner / partner present	154,803	24%
Counseled alone / Partner not present	486,467	76%

#### Outcome summary (HIV test)

Single test negative	598,179	93%
Single test positive	5	0%
Test 1&2 negative	929	0%
Test 1&2 positive	40,587	6%
Test 1&2 discordant	1,570	0%

## HTC site report

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### HTC client details

\*

#### Final result given to client

Results among clients never tested / last negative	619,722	97%
New negative	598,992	97%
New positive	19,141	3%
New positive (non-sex dissag)	545	3%
New positive (dissag by sex)	18,596	97%
New positive male	7,771	42%
New positive female	10,825	58%
New inconclusive	1,501	0%
New exposed infants	88	0%
Confirmatory results (previous positive clients)	21,548	3%
Confirmatory positive	21,457	100%
Confirmatory positive (non-sex dissag)	874	4%
Confirmatory positive (dissag by sex)	20,583	96%
Confirmatory positive male	8,585	42%
Confirmatory positive female	11,998	58%
Confirmatory inconclusive	91	0%

#### Partner / Family HTC referral slips

Sum of slips given	28,792	100%
Total clients presenting with referral slip	22,916	80%
Total failed referrals (slips not returned)	5,876	20%

### Clients tested in the community

#### HTC client details

\*

#### Total HTC clients served

Total HIV tested	20,653	100%
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#### Sex

Males tested	7,805	38%
Females tested	12,848	62%
Females non-pregnant	9,405	73%
Females pregnant	3,443	27%

#### Age

Children 0-14 yrs	3,578	17%
Children below 12 mths (Age group A)	19	1%
Children 12 mths - 14 yrs (Age group B)	3,559	99%
Adults 15+ years	17,075	83%
Young adults 15-24 years (Age group C)	9,472	55%
Older adults 25+ yrs (Age group D)	7,603	45%

#### HTC access type

PITC	9,280	45%
Family Referral Slip (FRS)	2,900	14%
Other (VCT, etc.) HTC access	8,473	41%

## HTC site report

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### HTC client details

\*

#### HTC first time / repeat

Never tested before	6,917	33%
Previously accessed HTC	13,736	67%
Last negative	13,448	98%
Last positive	278	2%
Last exposed infant	2	0%
Last inconclusive	8	0%

#### Counseling session type / Partner present

Counseled with partner / partner present	1,363	7%
Counseled alone / Partner not present	19,290	93%

#### Outcome summary (HIV test)

Single test negative	19,739	96%
Single test positive	7	0%
Test 1&2 negative	5	0%
Test 1&2 positive	873	4%
Test 1&2 discordant	29	0%

#### Final result given to client

Results among clients never tested / last negative	20,356	99%
New negative	19,731	97%
New positive	594	3%
New positive (non-sex dissag)	20	3%
New positive (dissag by sex)	574	97%
New positive male	258	45%
New positive female	316	55%
New inconclusive	21	0%
New exposed infants	10	0%
Confirmatory results (previous positive clients)	297	1%
Confirmatory positive	290	98%
Confirmatory positive (non-sex dissag)	3	1%
Confirmatory positive (dissag by sex)	287	99%
Confirmatory positive male	86	30%
Confirmatory positive female	201	70%
Confirmatory inconclusive	7	2%

#### Partner / Family HTC referral slips

Sum of slips given	340	100%
Total clients presenting with referral slip	2,900	853%
Total failed referrals (slips not returned)	-2,560	-753%

### Clients at stand-alone HTC sites

#### HTC client details

\*

#### Total HTC clients served

Total HIV tested	7,678	100%
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#### Sex

Males tested	5,621	73%
Females tested	2,057	27%
Females non-pregnant	1,799	87%
Females pregnant	258	13%

# HTC site report

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

## HTC client details

\*

### Age

Children 0-14 yrs	195	3%
Children below 12 mths (Age group A)	0	0%
Children 12 mths - 14 yrs (Age group B)	195	100%
Adults 15+ years	7,483	97%
Young adults 15-24 years (Age group C)	3,695	49%
Older adults 25+ yrs (Age group D)	3,788	51%

### HTC access type

PITC	4,704	61%
Family Referral Slip (FRS)	51	1%
Other (VCT, etc.) HTC access	2,923	38%

### HTC first time / repeat

Never tested before	2,068	27%
Previously accessed HTC	5,610	73%
Last negative	5,288	94%
Last positive	314	6%
Last exposed infant	2	0%
Last inconclusive	6	0%

### Counseling session type / Partner present

Counseled with partner / partner present	784	10%
Counseled alone / Partner not present	6,894	90%

### Outcome summary (HIV test)

Single test negative	7,002	91%
Single test positive	0	0%
Test 1&2 negative	4	0%
Test 1&2 positive	646	8%
Test 1&2 discordant	26	0%

### Final result given to client

Results among clients never tested / last negative	7,357	96%
New negative	7,004	95%
New positive	327	4%
New positive (non-sex dissag)	10	3%
New positive (dissag by sex)	317	97%
New positive male	164	52%
New positive female	153	48%
New inconclusive	26	0%
New exposed infants	0	0%
Confirmatory results (previous positive clients)	321	4%
Confirmatory positive	319	99%
Confirmatory positive (non-sex dissag)	45	14%
Confirmatory positive (dissag by sex)	274	86%
Confirmatory positive male	123	45%
Confirmatory positive female	151	55%
Confirmatory inconclusive	2	1%

## HTC site report

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### HTC client details

\*

#### Partner / Family HTC referral slips

Sum of slips given	343	100%
Total clients presenting with referral slip	51	15%
Total failed referrals (slips not returned)	292	85%

### Clients returning to facility after self-test

#### HTC client details

\*

#### Total HTC clients served

Total HIV tested	966	100%
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#### Sex

Males tested	397	41%
Females tested	569	59%
Females non-pregnant	471	83%
Females pregnant	98	17%

#### Age

Children 0-14 yrs	15	2%
Children below 12 mths (Age group A)	3	20%
Children 12 mths - 14 yrs (Age group B)	12	80%
Adults 15+ years	951	98%
Young adults 15-24 years (Age group C)	291	31%
Older adults 25+ yrs (Age group D)	660	69%

#### HTC access type

PITC	565	58%
Family Referral Slip (FRS)	34	4%
Other (VCT, etc.) HTC access	367	38%

#### HTC first time / repeat

Never tested before	68	7%
Previously accessed HTC	898	93%
Last negative	522	58%
Last positive	368	41%
Last exposed infant	0	0%
Last inconclusive	8	1%

#### Counseling session type / Partner present

Counseled with partner / partner present	110	11%
Counseled alone / Partner not present	856	89%

#### Outcome summary (HIV test)

Single test negative	564	58%
Single test positive	23	2%
Test 1&2 negative	16	2%
Test 1&2 positive	356	37%
Test 1&2 discordant	7	1%

## HTC site report

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### HTC client details

\*

#### Final result given to client

Results among clients never tested / last negative	611	63%
New negative	588	96%
New positive	16	3%
New positive (non-sex dissag)	0	0%
New positive (dissag by sex)	16	100%
New positive male	5	31%
New positive female	11	69%
New inconclusive	7	1%
New exposed infants	0	0%
Confirmatory results (previous positive clients)	355	37%
Confirmatory positive	339	95%
Confirmatory positive (non-sex dissag)	8	2%
Confirmatory positive (dissag by sex)	331	98%
Confirmatory positive male	155	47%
Confirmatory positive female	176	53%
Confirmatory inconclusive	16	5%

#### Partner / Family HTC referral slips

Sum of slips given	70	100%
Total clients presenting with referral slip	34	49%
Total failed referrals (slips not returned)	36	51%

## HIV self-test (ST) distribution

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### ANC clinic

#### HIV self test client details

\*

##### Total HIV self-test kit

Total HIV self-test kit recipients	7,280	100%
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##### Sex

Male recipients	2,093	29%
Female recipients	5,187	71%
Non-pregnant	2,266	44%
Pregnant	2,921	56%

##### Last HIV test of recipient

Never tested	539	7%
Previously tested	6,741	93%
Last negative	6,545	97%
Last positive	193	3%
Not on ART	15	8%
On art	178	92%
Last inconclusive	3	0%

##### HIV ST kits given: Intended end user attributes

Total self-test kits distributed to end users	10,496	100%
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##### Intended end user distribution type

Self (recipient)	3,623	35%
Secondary distribution	6,873	65%
Sex-partner	5,337	78%
Other	1,536	22%

##### Intended end user sex / age category

Total males	6,448	61%
Boys 13-14 years old	92	1%
Adolescent boys and young men 15-24 years old	1,768	27%
Adolescent boys 15 - 19 years old	494	28%
Young men 20 - 24 years old	1,274	72%
Adults	4,588	71%
Young adults 25 - 35 years old	2,834	62%
Middle adults 36 - 49 years old	1,589	35%
Older adults 50+	165	4%
Total females	4,048	39%
Girls 13-14 years old	226	6%
Adolescent girls and young women 15-24 years	1,741	43%
Adolescent girls 15 - 19 years old	694	40%
Young women 20 - 24 years old	1,047	60%
Adults	2,081	51%
Young adults 25 - 35 years old	1,358	65%
Middle adults 36 - 49 years old	645	31%
Older adults 50+	78	4%

##### Total condoms

Total condoms distributed	15,065	100%
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## HIV self-test (ST) distribution

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### Maternity

#### HIV self test client details

\*

##### Total HIV self-test kit

Total HIV self-test kit recipients	1,793	100%
------------------------------------	-------	------

##### Sex

Male recipients	300	17%
Female recipients	1,493	83%
Non-pregnant	1,490	100%
Pregnant	3	0%

##### Last HIV test of recipient

Never tested	31	2%
Previously tested	1,762	98%
Last negative	1,752	99%
Last positive	10	1%
Not on ART	2	20%
On art	8	80%
Last inconclusive	0	0%

##### HIV ST kits given: Intended end user attributes

Total self-test kits distributed to end users	2,671	100%
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##### Intended end user distribution type

Self (recipient)	469	18%
Secondary distribution	2,202	82%
Sex-partner	1,820	83%
Other	382	17%

##### Intended end user sex / age category

Total males	1,990	75%
Boys 13-14 years old	31	2%
Adolescent boys and young men 15-24 years old	775	39%
Adolescent boys 15 - 19 years old	157	20%
Young men 20 - 24 years old	618	80%
Adults	1,184	59%
Young adults 25 - 35 years old	791	67%
Middle adults 36 - 49 years old	360	30%
Older adults 50+	33	3%
Total females	681	25%
Girls 13-14 years old	22	3%
Adolescent girls and young women 15-24 years	334	49%
Adolescent girls 15 - 19 years old	168	50%
Young women 20 - 24 years old	166	50%
Adults	325	48%
Young adults 25 - 35 years old	217	67%
Middle adults 36 - 49 years old	100	31%
Older adults 50+	8	2%

##### Total condoms

Total condoms distributed	7,444	100%
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## HIV self-test (ST) distribution

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### ART clinic

#### HIV self test client details

\*

##### Total HIV self-test kit

Total HIV self-test kit recipients	5,287	100%
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##### Sex

Male recipients	2,678	51%
Female recipients	2,609	49%
Non-pregnant	2,386	91%
Pregnant	223	9%

##### Last HIV test of recipient

Never tested	834	16%
Previously tested	4,453	84%
Last negative	3,854	87%
Last positive	585	13%
Not on ART	19	3%
On art	566	97%
Last inconclusive	14	0%

##### HIV ST kits given: Intended end user attributes

Total self-test kits distributed to end users	10,949	100%
---	--------	------

##### Intended end user distribution type

Self (recipient)	3,838	35%
Secondary distribution	7,111	65%
Sex-partner	4,128	58%
Other	2,983	42%

##### Intended end user sex / age category

Total males	5,574	51%
Boys 13-14 years old	403	7%
Adolescent boys and young men 15-24 years old	1,597	29%
Adolescent boys 15 - 19 years old	635	40%
Young men 20 - 24 years old	962	60%
Adults	3,574	64%
Young adults 25 - 35 years old	1,937	54%
Middle adults 36 - 49 years old	1,410	39%
Older adults 50+	227	6%
Total females	5,375	49%
Girls 13-14 years old	514	10%
Adolescent girls and young women 15-24 years	2,129	40%
Adolescent girls 15 - 19 years old	912	43%
Young women 20 - 24 years old	1,217	57%
Adults	2,732	51%
Young adults 25 - 35 years old	1,816	66%
Middle adults 36 - 49 years old	868	32%
Older adults 50+	48	2%

##### Total condoms

Total condoms distributed	14,201	100%
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## HIV self-test (ST) distribution

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### HTC room

#### HIV self test client details

\*

##### Total HIV self-test kit

Total HIV self-test kit recipients	76,417	100%
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##### Sex

Male recipients	36,816	48%
Female recipients	39,601	52%
Non-pregnant	34,043	86%
Pregnant	5,558	14%

##### Last HIV test of recipient

Never tested	7,582	10%
Previously tested	68,835	90%
Last negative	66,737	97%
Last positive	2,083	3%
Not on ART	383	18%
On art	1,700	82%
Last inconclusive	15	0%

##### HIV ST kits given: Intended end user attributes

Total self-test kits distributed to end users	125,702	100%
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##### Intended end user distribution type

Self (recipient)	57,725	46%
Secondary distribution	67,977	54%
Sex-partner	50,986	75%
Other	16,991	25%

##### Intended end user sex / age category

Total males	63,240	50%
Boys 13-14 years old	1,433	2%
Adolescent boys and young men 15-24 years old	18,957	30%
Adolescent boys 15 - 19 years old	6,059	32%
Young men 20 - 24 years old	12,898	68%
Adults	42,850	68%
Young adults 25 - 35 years old	24,824	58%
Middle adults 36 - 49 years old	15,700	37%
Older adults 50+	2,326	5%
Total females	62,462	50%
Girls 13-14 years old	2,307	4%
Adolescent girls and young women 15-24 years	27,558	44%
Adolescent girls 15 - 19 years old	10,707	39%
Young women 20 - 24 years old	16,851	61%
Adults	32,597	52%
Young adults 25 - 35 years old	22,005	68%
Middle adults 36 - 49 years old	9,391	29%
Older adults 50+	1,201	4%

##### Total condoms

Total condoms distributed	337,563	100%
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## HIV self-test (ST) distribution

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### Other point in HF

#### HIV self test client details

\*

##### Total HIV self-test kit

Total HIV self-test kit recipients	7,193	100%
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##### Sex

Male recipients	3,455	48%
Female recipients	3,738	52%
Non-pregnant	3,567	95%
Pregnant	171	5%

##### Last HIV test of recipient

Never tested	639	9%
Previously tested	6,554	91%
Last negative	6,381	97%
Last positive	173	3%
Not on ART	14	8%
On art	159	92%
Last inconclusive	0	0%

##### HIV ST kits given: Intended end user attributes

Total self-test kits distributed to end users	13,343	100%
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##### Intended end user distribution type

Self (recipient)	5,263	39%
Secondary distribution	8,080	61%
Sex-partner	6,295	78%
Other	1,785	22%

##### Intended end user sex / age category

Total males	6,873	52%
Boys 13-14 years old	165	2%
Adolescent boys and young men 15-24 years old	1,972	29%
Adolescent boys 15 - 19 years old	732	37%
Young men 20 - 24 years old	1,240	63%
Adults	4,736	69%
Young adults 25 - 35 years old	2,846	60%
Middle adults 36 - 49 years old	1,600	34%
Older adults 50+	290	6%
Total females	6,470	48%
Girls 13-14 years old	263	4%
Adolescent girls and young women 15-24 years	2,833	44%
Adolescent girls 15 - 19 years old	1,199	42%
Young women 20 - 24 years old	1,634	58%
Adults	3,374	52%
Young adults 25 - 35 years old	2,270	67%
Middle adults 36 - 49 years old	974	29%
Older adults 50+	130	4%

##### Total condoms

Total condoms distributed	20,402	100%
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## HIV self-test (ST) distribution

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### VCT stand-alone

#### HIV self test client details

\*

##### Total HIV self-test kit

Total HIV self-test kit recipients	302	100%
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##### Sex

Male recipients	0	0%
Female recipients	302	100%
Non-pregnant	302	100%
Pregnant	0	0%

##### Last HIV test of recipient

Never tested	0	0%
Previously tested	302	100%
Last negative	295	98%
Last positive	7	2%
Not on ART	0	0%
On art	7	100%
Last inconclusive	0	0%

##### HIV ST kits given: Intended end user attributes

Total self-test kits distributed to end users	497	100%
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##### Intended end user distribution type

Self (recipient)	109	22%
Secondary distribution	388	78%
Sex-partner	309	80%
Other	79	20%

##### Intended end user sex / age category

Total males	313	63%
Boys 13-14 years old	1	0%
Adolescent boys and young men 15-24 years old	63	20%
Adolescent boys 15 - 19 years old	14	22%
Young men 20 - 24 years old	49	78%
Adults	249	80%
Young adults 25 - 35 years old	162	65%
Middle adults 36 - 49 years old	85	34%
Older adults 50+	2	1%
Total females	184	37%
Girls 13-14 years old	10	5%
Adolescent girls and young women 15-24 years	98	53%
Adolescent girls 15 - 19 years old	35	36%
Young women 20 - 24 years old	63	64%
Adults	76	41%
Young adults 25 - 35 years old	55	72%
Middle adults 36 - 49 years old	21	28%
Older adults 50+	0	0%

##### Total condoms

Total condoms distributed	0
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## HIV self-test (ST) distribution

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### Workplace formal

#### HIV self test client details

\*

##### Total HIV self-test kit

Total HIV self-test kit recipients	4	100%
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##### Sex

Male recipients	2	50%
Female recipients	2	50%
Non-pregnant	2	100%
Pregnant	0	0%

##### Last HIV test of recipient

Never tested	0	0%
Previously tested	4	100%
Last negative	4	100%
Last positive	0	0%
Not on ART	0	
On art	0	
Last inconclusive	0	0%

##### HIV ST kits given: Intended end user attributes

Total self-test kits distributed to end users	6	100%
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##### Intended end user distribution type

Self (recipient)	4	67%
Secondary distribution	2	33%
Sex-partner	2	100%
Other	0	0%

##### Intended end user sex / age category

Total males	3	50%
Boys 13-14 years old	0	0%
Adolescent boys and young men 15-24 years old	0	0%
Adolescent boys 15 - 19 years old	0	
Young men 20 - 24 years old	0	
Adults	3	100%
Young adults 25 - 35 years old	2	67%
Middle adults 36 - 49 years old	1	33%
Older adults 50+	0	0%
Total females	3	50%
Girls 13-14 years old	0	0%
Adolescent girls and young women 15-24 years	0	0%
Adolescent girls 15 - 19 years old	0	
Young women 20 - 24 years old	0	
Adults	3	100%
Young adults 25 - 35 years old	3	100%
Middle adults 36 - 49 years old	0	0%
Older adults 50+	0	0%

##### Total condoms

Total condoms distributed	0
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## HIV self-test (ST) distribution

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### Workplace informal

#### HIV self test client details

\*

##### Total HIV self-test kit

Total HIV self-test kit recipients	42	100%
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##### Sex

Male recipients	24	57%
Female recipients	18	43%
Non-pregnant	14	78%
Pregnant	4	22%

##### Last HIV test of recipient

Never tested	12	29%
Previously tested	30	71%
Last negative	28	93%
Last positive	2	7%
Not on ART	0	0%
On art	2	100%
Last inconclusive	0	0%

##### HIV ST kits given: Intended end user attributes

Total self-test kits distributed to end users	73	100%
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##### Intended end user distribution type

Self (recipient)	30	41%
Secondary distribution	43	59%
Sex-partner	31	72%
Other	12	28%

##### Intended end user sex / age category

Total males	33	45%
Boys 13-14 years old	1	3%
Adolescent boys and young men 15-24 years old	9	27%
Adolescent boys 15 - 19 years old	6	67%
Young men 20 - 24 years old	3	33%
Adults	23	70%
Young adults 25 - 35 years old	12	52%
Middle adults 36 - 49 years old	8	35%
Older adults 50+	3	13%
Total females	40	55%
Girls 13-14 years old	1	3%
Adolescent girls and young women 15-24 years	14	35%
Adolescent girls 15 - 19 years old	7	50%
Young women 20 - 24 years old	7	50%
Adults	25	63%
Young adults 25 - 35 years old	9	36%
Middle adults 36 - 49 years old	12	48%
Older adults 50+	4	16%

##### Total condoms

Total condoms distributed	660	100%
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## HIV self-test (ST) distribution

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### Hotspot

#### HIV self test client details

\*

##### Total HIV self-test kit

Total HIV self-test kit recipients	242	100%
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##### Sex

Male recipients	242	100%
Female recipients	0	0%
Non-pregnant	0	
Pregnant	0	

##### Last HIV test of recipient

Never tested	1	0%
Previously tested	241	100%
Last negative	239	99%
Last positive	2	1%
Not on ART	2	100%
On art	0	0%
Last inconclusive	0	0%

##### HIV ST kits given: Intended end user attributes

Total self-test kits distributed to end users	245	100%
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##### Intended end user distribution type

Self (recipient)	240	98%
Secondary distribution	5	2%
Sex-partner	2	40%
Other	3	60%

##### Intended end user sex / age category

Total males	245	100%
Boys 13-14 years old	0	0%
Adolescent boys and young men 15-24 years old	175	71%
Adolescent boys 15 - 19 years old	38	22%
Young men 20 - 24 years old	137	78%
Adults	70	29%
Young adults 25 - 35 years old	52	74%
Middle adults 36 - 49 years old	17	24%
Older adults 50+	1	1%
Total females	0	0%
Girls 13-14 years old	0	
Adolescent girls and young women 15-24 years	0	
Adolescent girls 15 - 19 years old	0	
Young women 20 - 24 years old	0	
Adults	0	
Young adults 25 - 35 years old	0	
Middle adults 36 - 49 years old	0	
Older adults 50+	0	

##### Total condoms

Total condoms distributed	240	100%
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## HIV self-test (ST) distribution

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### Other community point

#### HIV self test client details

\*

##### Total HIV self-test kit

Total HIV self-test kit recipients	6,164	100%
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##### Sex

Male recipients	2,477	40%
Female recipients	3,687	60%
Non-pregnant	3,659	99%
Pregnant	28	1%

##### Last HIV test of recipient

Never tested	1,430	23%
Previously tested	4,734	77%
Last negative	4,655	98%
Last positive	77	2%
Not on ART	11	14%
On art	66	86%
Last inconclusive	2	0%

##### HIV ST kits given: Intended end user attributes

Total self-test kits distributed to end users	9,290	100%
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##### Intended end user distribution type

Self (recipient)	5,732	62%
Secondary distribution	3,558	38%
Sex-partner	2,837	80%
Other	721	20%

##### Intended end user sex / age category

Total males	4,038	43%
Boys 13-14 years old	104	3%
Adolescent boys and young men 15-24 years old	1,336	33%
Adolescent boys 15 - 19 years old	514	38%
Young men 20 - 24 years old	822	62%
Adults	2,598	64%
Young adults 25 - 35 years old	1,498	58%
Middle adults 36 - 49 years old	946	36%
Older adults 50+	154	6%
Total females	5,252	57%
Girls 13-14 years old	991	19%
Adolescent girls and young women 15-24 years	2,319	44%
Adolescent girls 15 - 19 years old	1,147	49%
Young women 20 - 24 years old	1,172	51%
Adults	1,942	37%
Young adults 25 - 35 years old	1,314	68%
Middle adults 36 - 49 years old	562	29%
Older adults 50+	66	3%

##### Total condoms

Total condoms distributed	25,608	100%
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# HIV DNA PCR sample log report

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

## DNA PCR samples

\*

### Total DNA PCR samples

Total DNA PCR samples collected	10,908	100%
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### Reason for test

EID initial	10,527	97%
Confirmatory DNA-PCR	243	2%
Confirmatory after initial positive DNA-PCR	161	66%
Confirmatory after initial positive rapid test	82	34%
Tie-breaker	47	0%
Repeat	91	1%

### Sample type

DBS	9,251	85%
Point of care	1,628	15%
Other	29	0%

### Test result

Results received	9,078	83%
Conclusive	9,048	100%
Negative	8,711	96%
Positive	337	4%
Indeterminate	30	0%
Sample rejected	57	1%
Result missing	1,773	16%

### Mother - guardian notification

0 - 4 weeks	4,331	40%
5 - 8 weeks	1,100	10%
9 - 12 weeks	204	2%
13+ weeks	5,273	48%

## Blood safety

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### Infect. disease screening among potential donors

\*

#### HIV screening

HIV testing not done	1,764	23%
Tested for HIV	5,868	77%
HIV negative	5,656	96%
HIV positive	212	4%

#### Hepatitis B screening

HepB testing not done	1,897	25%
Tested for Hepatitis B	5,735	75%
HepB Negative	5,506	96%
HepB Positive	229	4%

#### Hepatitis C screening

HepC testing not done	2,373	31%
Tested for Hepatitis C	5,259	69%
HepC Negative	5,214	99%
HepC Positive	45	1%

#### Syphilis screening

Syphilis testing not done	1,739	23%
Tested for Syphilis	5,893	77%
Syphilis Negative	5,704	97%
Syphilis Positive	189	3%

#### Malaria screening

Malaria testing not done	2,074	27%
Tested for malaria	5,558	73%
Malaria Negative	4,887	88%
Malaria Positive	671	12%

#### Summary screening outcome

Not donated	2,905	38%
Donated	4,727	62%
Screened for at least HIV, HepB and syphilis	4,118	87%
Screened for HIV, HepB, HepC, Syphilis, Malaria	2,994	73%
Screened for HIV, HepB, Syphilis	1,124	27%
Screened for HIV, HepB	0	0%
Screened for HIV only	28	1%
Screened with any other combination of tests	581	12%

### Cross-matching report

\*

#### Blood group typing (for units and patients)

Total blood group typing done	24,755	100%
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#### Blood units cross-matched (by source)

Total blood units cross-matched	16,780	100%
Total units from MBTS (estimated)	12,053	72%
Total units from replacement donors	4,727	28%

#### Blood units cross-matched by patient group

Units cross-matched for maternity	3,499	21%
Units cross-matched for paediatrics	5,075	30%
Units cross-matched for other ward	8,206	49%

## Blood safety

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### Cross-matching report

\*

#### Transfusion reactions

Units transfused without adverse events	16,754	100%
Units with suspected transfusion reactions	9	0%
Units with confirmed transfusion reactions	17	0%

# HIV exposed child follow-up

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

## Age 2 months

### Age cohort outcomes

\*

#### Total children in birth cohort

Total children registered	11,235	100%
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#### CPT status

On CPT	9,743	87%
Not on CPT	1,492	13%

#### HIV status

Current HIV infection status unknown	2,996	27%
HIV infection not confirmed, not ART eligible	2,994	100%
HIV infection not confirmed, ART eligible (PSHD)	2	0%
Current HIV infection status known	8,239	73%
Confirmed not infected	8,167	99%
Confirmed infected (ART eligible)	72	1%

#### ART eligibility summary

Not eligible for ART	11,161	99%
ART eligible	74	1%
ART not initiated	9	12%
Initiated ART	65	88%

#### Primary follow-up outcome

Discharged uninfected	21	0%
Continue follow-up	9,742	95%
Started ART	65	1%
Defaulted	421	4%
Died	32	0%

#### Transfers between sites

Total not transferred out	10,281	92%
Transferred out	954	8%

## Age 12 months

### Age cohort outcomes

\*

#### Total children in birth cohort

Total children registered	12,451	100%
---------------------------	--------	------

#### CPT status

On CPT	9,506	76%
Not on CPT	2,945	24%

#### HIV status

Current HIV infection status unknown	3,166	25%
HIV infection not confirmed, not ART eligible	3,163	100%
HIV infection not confirmed, ART eligible (PSHD)	3	0%
Current HIV infection status known	9,285	75%
Confirmed not infected	9,126	98%
Confirmed infected (ART eligible)	159	2%

# HIV exposed child follow-up

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

## Age cohort outcomes

\*

### ART eligibility summary

Not eligible for ART	12,289	99%
ART eligible	162	1%
ART not initiated	15	9%
Initiated ART	147	91%

### Primary follow-up outcome

Discharged uninfected	84	1%
Continue follow-up	9,503	85%
Started ART	147	1%
Defaulted	1,270	11%
Died	114	1%

### Transfers between sites

Total not transferred out	11,118	89%
Transferred out	1,333	11%

## Age 24 months

### Age cohort outcomes

\*

#### Total children in birth cohort

Total children registered	11,846	100%
---------------------------	--------	------

#### CPT status

On CPT	306	3%
Not on CPT	11,540	97%

#### HIV status

Current HIV infection status unknown	3,938	33%
HIV infection not confirmed, not ART eligible	3,935	100%
HIV infection not confirmed, ART eligible (PSHD)	3	0%
Current HIV infection status known	7,908	67%
Confirmed not infected	7,701	97%
Confirmed infected (ART eligible)	207	3%

### ART eligibility summary

Not eligible for ART	11,636	98%
ART eligible	210	2%
ART not initiated	21	10%
Initiated ART	189	90%

### Primary follow-up outcome

Discharged uninfected	7,542	73%
Continue follow-up	255	2%
Started ART	189	2%
Defaulted	2,263	22%
Died	152	1%

### Transfers between sites

Total not transferred out	10,401	88%
Transferred out	1,445	12%

## Antenatal Care

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### New ANC registrations in reporting period

\*

#### Women with first visit in reporting period

New women registered	159,430	100%
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### ANC cohort analysis

\*

#### HIV status ascertainment

HIV status not ascertained	4,773	3%
HIV status ascertained	154,657	97%
Valid previous test result	8,335	5%
Previous negative	1,587	19%
Previous positive	6,748	81%
New test at ANC	146,322	95%
New negative	144,156	99%
New positive	2,166	1%

#### HIV status summary

Total women HIV negative	145,743	94%
Total women HIV positive	8,914	6%

#### PMTCT regimen mother

No ARVs	66	1%
Any ARVs	8,848	99%
ART (by time of initiation)	8,848	100%
Already on ART when starting ANC	6,704	76%
Started ART at 0-27 weeks of pregnancy	1,950	22%
Started ART at 28+ weeks of preg.	194	2%

### ANC women after 6 months

#### ANC cohort analysis

\*

#### Total women completing ANC in the reporting period

Total women in booking cohort	157,743	100%
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#### Syphilis status

Not tested for syphilis	23,625	15%
Tested for syphilis	134,118	85%
Syphilis negative	130,671	97%
Syphilis positive	3,447	3%

#### HIV status ascertainment

HIV status not ascertained	2,171	1%
HIV status ascertained	155,572	99%
Valid previous test result	9,284	6%
Previous negative	1,083	12%
Previous positive	8,201	88%
New test at ANC	146,288	94%
New negative	143,765	98%
New positive	2,523	2%

#### HIV status summary

Total women HIV negative	144,848	93%
Total women HIV positive	10,724	7%

## Antenatal Care

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### ANC cohort analysis

\*

#### CPT status (among HIV pos)

Not on CPT	169	2%
On CPT	10,555	98%

#### PMTCT regimen mother

No ARVs	112	1%
Any ARVs	10,612	99%
ART (by time of initiation)	10,612	100%
Already on ART when starting ANC	8,249	78%
Started ART at 0-27 weeks of pregnancy	2,141	20%
Started ART at 28+ weeks of preg.	222	2%

#### Baby's ARVs dispensed

No ARVs dispensed for infant	307	3%
ARVs dispensed for infant	10,417	97%

# Maternity

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

## Maternal details

\*

### Admissions in the reporting period

Total admissions (referrals double-counted)	139,169	100%
Not referred to other site (total women)	130,405	94%
Referred out before delivery (multiple admissions)	8,764	6%

### HIV status ascertainment

HIV status not ascertained	7,605	5%
HIV status ascertained	131,564	95%
Valid previous test result	9,185	7%
Previous negative	35	0%
Previous positive	9,150	100%
New test at maternity	122,379	93%
New negative	122,142	100%
New positive	237	0%

### HIV status summary

Total women HIV negative	122,177	93%
Total women HIV positive	9,387	7%

### ARVs during pregnancy (among HIV pos)

No ARV in pregnancy	68	1%
Any ARVs	9,319	99%
ART (by time of initiation)	9,319	100%
ART initiated before pregnancy	9,003	97%
ART initiated in 1st / 2nd trimester	148	2%
ART initiated in 3rd trimester	42	0%
ART initiated during labour	126	1%

## Infant details

\*

### Single babies / multiple deliveries

Total babies delivered	133,121	100%
Single babies	128,629	97%
Twin / multiple babies	4,492	3%

### Infant survival

Total live births	130,719	98%
Discharged alive	129,883	99%
Neonatal deaths	836	1%
Stillbirths	2,402	2%
Stillbirth, fresh	1,187	49%
Stillbirth, macerated	1,215	51%

### HIV exposure / ARV proph. (among discharged alive)

Infants with unknown HIV exposure status	4,869	4%
Infants with known HIV exposure status	125,014	96%
Not HIV exposed	115,724	93%
HIV exposed	9,290	7%
Received no ARVs	700	8%
Received ARVs	8,590	92%
Nevirapine	8,590	100%

# ART cohort analysis

Malawi (National)

2021 Q1 (Quarter)

## Registration details

\*

### ART clinic registrations

Total ART clinic registrations	28,204	100%
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### Registration type

ART initiations, first time (total patients)	19,682	69%
ART initiations, first time (non sex-disagg.)	65	0%
ART initiations, first time (by sex)	19,617	100%
ART initiations, first time, males	7,897	40%
ART initiations, first time, females	11,720	60%
ART initiations, first time, females non-pregnant	8,973	77%
ART initiations, first time, females pregnant	2,747	23%
ART re-initiations	250	1%
ART transfers in	8,415	30%

### Sex

Males	11,076	39%
Females	17,128	61%
Non-pregnant	13,475	79%
Pregnant	3,653	21%

### Age at ART initiation

Adults 15+ yrs	26,226	93%
Children 0-14 yrs	1,978	7%
Children 2-14 yrs	1,393	70%
Children below 24 mths	585	30%

### Reason for starting ART

Presumed severe HIV Disease	20	0%
Confirmed HIV infection	28,184	100%
WHO stage 1 or 2	24,723	88%
CD4 below threshold	1,602	6%
CD4 unknown or >threshold	23,121	94%
PCR infants	90	0%
Children 12-59 mths	426	2%
Pregnant women	3,605	16%
Breastfeeding mothers	814	4%
Asymptomatic / mild	18,186	79%
WHO stage 3	2,624	9%
WHO stage 4	794	3%
Unknown / reason outside of guidelines	43	0%

### TB at ART initiation

Never TB / TB > 24 months ago	27,633	98%
TB within the last 24 months	268	1%
Current episode of TB	303	1%

### Kaposi's sarcoma at ART initiation

No KS	28,134	100%
Patients with KS	70	0%

# ART cohort analysis

Malawi (National)

2021 Q1 (Cumulative)

## Registration details

\*

### ART clinic registrations

Total ART clinic registrations	1,901,328	100%
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### Registration type

ART initiations, first time (total patients)	1,507,135	79%
ART initiations, first time (non sex-disagg.)	298,416	20%
ART initiations, first time (by sex)	1,208,719	80%
ART initiations, first time, males	456,935	38%
ART initiations, first time, females	751,784	62%
ART initiations, first time, females non-pregnant	600,928	80%
ART initiations, first time, females pregnant	150,856	20%
ART re-initiations	26,443	1%
ART transfers in	363,983	19%

### Sex

Males	709,331	37%
Females	1,191,997	63%
Non-pregnant	958,538	80%
Pregnant	233,459	20%

### Age at ART initiation

Adults 15+ yrs	1,744,711	92%
Children 0-14 yrs	156,617	8%
Children 2-14 yrs	117,936	75%
Children below 24 mths	38,681	25%

### Reason for starting ART

Presumed severe HIV Disease	4,469	0%
Confirmed HIV infection	1,896,859	100%
WHO stage 1 or 2	1,162,563	61%
CD4 below threshold	366,401	32%
CD4 unknown or >threshold	796,162	68%
PCR infants	4,619	1%
Children 12-59 mths	22,641	3%
Pregnant women	220,711	28%
Breastfeeding mothers	67,906	9%
Asymptomatic / mild	480,285	60%
WHO stage 3	592,025	31%
WHO stage 4	127,992	7%
Unknown / reason outside of guidelines	14,279	1%

### TB at ART initiation

Never TB / TB > 24 months ago	1,826,345	96%
TB within the last 24 months	36,714	2%
Current episode of TB	38,269	2%

### Kaposi's sarcoma at ART initiation

No KS	1,880,895	99%
Patients with KS	20,433	1%

# ART cohort analysis

Malawi (National)

2021 Q1 (Cumulative)

## ART outcomes

\*

### Primary follow-up outcomes

Total alive on ART	871,098	61%
Alive on ART at site of last registration	871,098	100%
Defaulted	418,807	29%
Stopped ART	14,508	1%
Total died	133,988	9%
Died month 1	24,877	19%
Died month 2	15,172	11%
Died month 3	10,042	7%
Died month 4+	83,897	63%

### Transfers between sites

Total not transferred out	1,438,420	76%
Transferred out	462,908	24%

# ART cohort analysis

Malawi (National)

2021 Q1 (Cumulative)

## ART outcomes

\*

### ART regimens

First line regimens	851,981	98%
Adult formulation	843,569	99%
Regimen 0A	46	0%
Regimen 2A	383	0%
Regimen 4A	84	0%
Regimen 5A	4,338	1%
Regimen 6A	192	0%
Regimen 13A	817,888	97%
Regimen 14A	8,337	1%
Regimen 15A	12,185	1%
Regimen 16A	8	0%
Regimen 17A	108	0%
Paed. formulation	8,412	1%
Regimen 0P	15	0%
Regimen 2P	806	10%
Regimen 4P	15	0%
Regimen 14P	208	2%
Regimen 15P	7,217	86%
Regimen 16P	139	2%
Regimen 17P	12	0%
Second line regimens	18,131	2%
Adult formulation	5,472	30%
Regimen 7A	1,608	29%
Regimen 8A	3,177	58%
Regimen 9A	440	8%
Regimen 10A	116	2%
Regimen 11A	72	1%
Regimen 12A	59	1%
Paed. Formulation	12,659	70%
Regimen 9P Tabs	9,472	75%
Regimen 9P Gran	2,889	23%
Regimen 11P Tabs	181	1%
Regimen 11P Gran	117	1%
Other regimen (adult / paed)	902	0%

### Adherence

Adherence unknown (not recorded)	20,543	2%
Adherence recorded	850,463	98%
0-3 doses missed	611,997	72%
4+ doses missed	238,466	28%

### ART side effects

Side effects unknown (not recorded)	19,815	2%
Side effects recorded	851,191	98%
No side effects	849,811	100%
Any side effects	1,380	0%

# ART cohort analysis

Malawi (National)

2021 Q1 (Cumulative)

## ART outcomes

\*

### Current TB status among ART patients (ICF)

ICF not done (Current TB status unknown/ not circ)	6,863	1%
ICF done	864,157	99%
TB not suspected	859,431	99%
TB suspected	2,350	0%
TB confirmed	2,376	0%
TB confirmed, not on treatment	32	1%
TB confirmed, on TB treatment	2,344	99%

### Pregnant / Breastfeeding

Pregnant females	871,020	100%
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# Viral load monitoring cohort report

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

## VL samples collected in the reporting period

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### VL samples collected

Total VL samples	156,729	100%
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### Reason for VL test

Routine / scheduled monitoring	133,370	85%
Extra-schedular	19,233	12%
Targeted (clinical suspicion of failure)	3,751	20%
Follow-up after high VL	15,482	80%
Replacement of lost sample / missing result	4,126	3%

## Results for VL samples collected 6 months ago

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### Total VL samples with outcomes

Total VL samples collected 6 months ago	162,875	100%
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### VL test results

Valid results	137,744	85%
<1000 copies / ml	127,955	93%
1000+ copies / ml	9,789	7%
Rejected samples / invalid results	1,038	1%
Missing / outstanding results	24,093	15%

### Result transmission type

Paper results	136,708	97%
Electronic results	4,781	3%

### Time from sample collection to receipt of results

0-4 Weeks	50,174	31%
5-8 Weeks	60,310	37%
9-12 Weeks	17,461	11%
13+ Weeks / still missing	34,930	21%

### Time from sample collection to client notification

0-4 Weeks	16,770	10%
5-8 Weeks	26,827	16%
9-12 Weeks	30,743	19%
13+ Weeks / pending	88,535	54%

## Patients with high VL: outcome after 6 months

\*

### Patients in high VL cohort

Total high VL patients evaluated after 6 months	12,218	100%
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### Initial high VL: reason for test

Routine / scheduled monitoring	10,809	88%
Targeted (clinical suspicion of failure)	1,101	9%
Repeat sample	308	3%

### Intensive adherence counselling

3 Sessions completed	8,006	66%
Sessions not completed	4,212	34%

# Viral load monitoring cohort report

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

## Patients with high VL: outcome after 6 months

\*

### Follow-up VL test

Follow-up sample collected	6,524	53%
Valid results	4,671	72%
<1000 copies / ml	3,435	74%
1000+ copies / ml	1,236	26%
Rejected samples / invalid results	20	0%
Missing / outstanding results	1,833	28%
Follow-up sample pending	5,694	47%

### Preliminary opinion

Conclusion made	4,844	40%
Continue current regimen	4,455	92%
Switch to 2nd line ART	389	8%
Conclusion pending	7,374	60%

### Final treatment decision (2nd line prescriber)

Decision made	4,387	36%
Continue current regimen	3,976	91%
Switch to 2nd line ART	365	8%
Refer to HIV specialist	46	1%
Decision pending	7,831	64%

# STI site report

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

## STI clients treated in the reporting period

\*

### Total STI clients

Total STI clients treated	86,579	100%
Index patients treated (symptomatic)	71,269	82%
Partners treated	15,310	18%

### Sex

Males	36,678	42%
Males Non-circumcised	25,023	68%
Males Circumcised	11,655	32%
Females	49,901	58%
Non-pregnant	41,946	84%
Pregnant	7,955	16%

### Age group

Age group A (0-19 years)	7,389	9%
Age group B (20-24 years)	20,834	24%
Age group C (25+ years)	58,356	67%

### Client type

Symptomatic cases	77,501	90%
Index cases	71,269	92%
Partners symptomatic	6,232	8%
Partners asymptomatic	9,078	10%

### STI treatment history

Never treated for STI	63,584	73%
Previously treated for STI	22,995	27%
Old >3 months ago	17,192	75%
Recent ≤3 months ago	5,803	25%

### STI syndromic diagnosis

GUD	11,278	12%
UD	27,208	29%
AVD	26,572	28%
Low risk	7,713	29%
High risk	18,859	71%
LAP	9,890	10%
SS	925	1%
BU	653	1%
BA	1,251	1%
NC	412	0%
Genital Warts	586	1%
Syphilis RPR VDRL	10,339	11%
Other STI	6,127	6%

### STI partner notification

Total partner notification slips issued	21,259	100%
Total partners returned	15,310	72%
Total partners not seen	5,949	28%

## STI site report

Malawi (National)

2021 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### STI clients treated in the reporting period

\*

#### HIV test / ART status

HIV status not ascertained	8,579	10%
HIV status ascertained	78,000	90%
HIV negative (new test)	64,180	82%
HIV positive	13,820	18%
New positive	1,609	12%
Previous positive	12,211	88%
Not on ART	689	6%
On ART	11,522	94%

#### STI clients referred for services

Lab	1,924	4%
Gynae review	671	1%
Surgical review	786	2%
Repeat HTC	35,462	74%
ART (for assessment)	4,227	9%
Other (service referrals)	2,485	5%
VMMC	2,212	5%