



*Government of Malawi Ministry of Health*

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# **Integrated HIV Program Report January -March 2019**

- *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 2019)

- Scale-up of integrated HIV services had reached the following number of sites:
  - **759** static and **112** outreach HIV testing sites
  - **744** (static) ART sites; **636** of these started at least one pregnant or breastfeeding woman and **715** started asymptomatic patients (Test & Treat) this quarter
  - **680** sites with HIV-exposed children in follow-up
- **1,117,587** persons were tested for HIV and received their results; **247,550 (22%)** accessed HIV testing for the first time; **870,037 (78%)** were repeat testers and **35,483 (3%)** of these received confirmatory testing (after having tested positive in the past). **32,313 (3%)** clients received a positive result for the first time<sup>1</sup>.
- **22,971 (89%)** of 24,763 blood units collected were screened for (at least) HIV, hepatitis B and syphilis.
- **152,908 (98%)** of 156,104 women at ANC had their HIV status ascertained; **10,973 (7%)** of these were HIV positive. **129,526(95%)** of 136,653 at maternity had their HIV status ascertained **10,018(8%)** of these were HIV positive.
- **41,868** patients started ART this quarter; **79%** were classified as asymptomatic / in WHO stage 1 and started under the “Test & Treat” policy.
- **810,245** patients were alive and on ART by end of March 2019. This means that **76%** of the estimated 1,062,622 HIV positive population was on ART. <sup>2</sup> ART coverage was **64%** (44,992 / 69,987) for children<sup>3</sup> and **77%** (765,253 / 992,635) for adults.
- **76,326 (90%)** of **85,127** 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 **59%** and **92%**, respectively.
- **74%** of adults and **79%** of children were retained alive on ART at 12 months after initiation.<sup>4</sup>
- Out of **744,835** patients on first line adult ART **427,130 (57%)** were on TDF/3TC/EFV and **284,816 (38%)** had transitioned to TDF/3TC/DTG.
- **13,000** <sup>5</sup> (**119%**) of an estimated 10,932 <sup>2</sup> HIV infected pregnant women in Malawi were on ART this quarter. **9,312(72%)** of these were already on ART when getting pregnant and **3,688 (28%)** started ART during pregnancy/delivery.
- An additional **1,480** <sup>2</sup> breastfeeding women started ART in WHO stage 1 or 2.
- **75%, 71%** of women started while pregnant or breastfeeding were retained on ART at **6 and 12 months** after initiation, respectively.
- **9,377 (8%)** of infants discharged alive from maternity were known to be HIV exposed, **9,086 (96%)** of these received ARV prophylaxis (nevirapine).

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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> 2019 Spectrum Model estimates for the HIV population in December 2019.

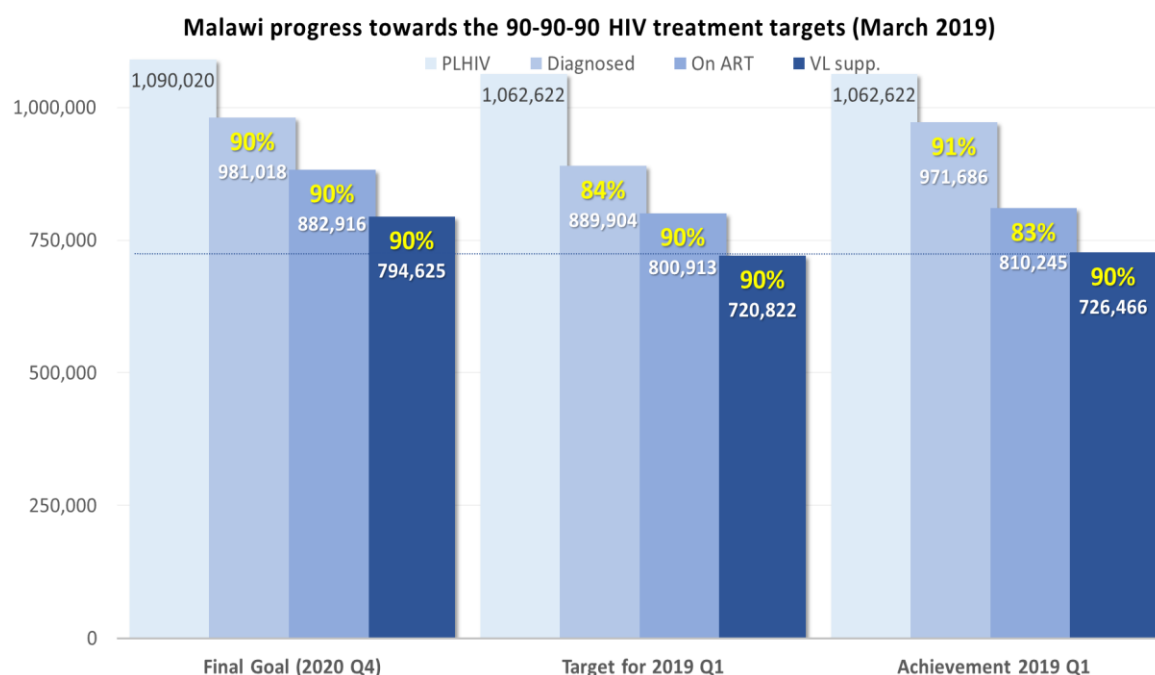
<sup>3</sup> Number of children (0-14 years) on ART extrapolated from age-disaggregated cohort reports from sites with electronic medical record systems (see section 12.3 on page 25).

<sup>4</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)

<sup>5</sup> Adjusted for double counting due to patient transfers / ‘failed ART initiations’ among women lost to follow-up within 6 months of ART registration.

- A total of **14,451** HIV exposed children were newly enrolled for follow-up this quarter; **11,005 (76%)** of these were enrolled before age 2 months.
  - Out of the total 1,062,622 estimated PLHIV by end March r 2019:
    - An estimated **91%** of PLHIV knew their status (diagnosed)
    - **83%** of whom were on ART
    - **90%** of whom were virally suppressed.<sup>6</sup>
  - This means that the Q1 2019 scale-up target for the population diagnosed was exceeded. The estimated proportion of PLHIV who know their status was similar with previous quarter (91%) and was based on a new estimation method for the “first 90” (UNAIDS “Shiny90” model). The new estimate implies that undisclosed repeat testers account for 46% of clients reported as “new positive” in routine HTS data between 2016 and 2019.
  - The lower estimate for PLHIV diagnosed (971,686) has also reduced the gap for the number of people diagnosed but not on ART to 161,441 individuals. Given the consistently high proxy linkage rates from HIV testing to ART initiation each quarter, most PLHIV diagnosed but not on ART are thought to have started but discontinued treatment.

**Figure 1**



<sup>6</sup> Estimation methods for progress towards the 90-90-90 treatment targets

**‘First 90’** (971,686 diagnosed): 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 (1,024,444 x 76.8% = 786,773); add: 231,411 = 54% of 428,540 people reported as newly diagnosed between April 2016 – January 2019 (HTS program data adjusted for an estimated 46% of repeat testers misclassified as newly diagnosed); subtract: 40,510 (63%) of 64,302 estimated deaths among all PLHIV (2019 Spectrum model) between April 2016 – March 2019 to account for deaths among the diagnosed population (on ART and not on ART).

**‘Second 90’** (810,245 on ART): patients retained alive on ART by end Q1 2019 from routine ART program reports.

**‘Third 90’** (726,466 virally suppressed): extrapolated from the 90% of patients with a routine VL monitoring result <1000 copies/ml this quarter, applied to the 810,245 patients on ART.

## 2 Integrated HIV Program Overview

Malawi's National HIV Program has undergone several important policy changes since its inception in 2004. The 4th Edition of the Malawi Integrated Clinical HIV Guidelines was published in July 2018 and training for nationwide implementation is underway. Key new policies include:

- **Introduction of dolutegravir- (DTG) based first line ART regimens:** Transition of new and existing eligible patient groups from January 2019.
- **CD4 counts as routine baseline** (if available) and targeted investigation.
- Routine screening for disseminated TB and cryptococcal infection in severely ill PLHIV using **urine LAM** and **CrAg** rapid tests.
- **Paclitaxel** as primary chemotherapy for Kaposi sarcoma (KS).
- Introduction of standard **3rd line ART** using a backbone of darunavir, ritonavir and dolutegravir.
- Four weeks of TDF/3TC/DTG as standard post-exposure prophylaxis regimen (PEP).

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

## 3 Supportive Site Supervision

### 3.1 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.

### 3.2 Supervision Outcomes

754 public and private sector facilities were visited for **clinical HIV program supervision** between 8<sup>th</sup> and 19 of April 2019.

The large number of sites was covered by **250** supervisors working in **32** teams that spent a total of **2,133 working hours** at the sites. Each site visit lasted on average 2.8 hours, but up to 2 days were spent at the busiest sites. **515 (68%)** sites were awarded a *certificate for excellent performance*. This number is higher than the previous quarter (512). **83(11%)** 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 2019 Q1

Zone	Total facil. visited*	Supervision hours spent at facilities		Performance (# and % of sites)	
		Total	Average per site	Excellent perform.	Mentoring needed
NZ	132	335	2.6	95 72%	16 12%
CEZ	106	271	2.6	83 78%	12 11%
CWZ	171	471	2.8	118 69%	18 11%
SEZ	169	535	3.2	99 59%	14 8%
SWZ	176	521	3	120 68%	23 13%
<b>Malawi</b>	<b>754</b>	<b>2,133</b>	<b>2.8</b>	<b>515 68%</b>	<b>83 11%</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. **220** sites had cumulatively registered more than 2,000 ART patient and **78** of these had registered more than 5,000. **112 (51%)** of these high burden sites were using electronic data systems, but EMR was also in use at 10 lower burden sites. Some NGO supported sites were using custom tools compatible with the national standard reporting requirements.

## 4 Inventory of Sites and Services

### 4.1 Sites and Services

There were **759** static and **112** outreach HIV testing sites in Q1 2019.

**Table 2**

Facilities with integrated HIV services in the 5 Zones. Availability of services defined by performance (at least 1 patient enrolled) during 2019 Q1

Zone	Total fac.(1)	Facilities providing HIV services				CD4 count machines (2)		
		Exp. child	Pre-ART	PMTCT B+	ART	Installed	Functional	Results
SEZ	169	159 94%	0 0%	153 91%	163 96%	8 5%	2 25%	768
SWZ	176	159 90%	10 6%	143 81%	174 99%	11 6%	7 64%	594
CWZ	172	146 85%	0 0%	140 81%	170 99%	9 5%	4 44%	900
CEZ	106	103 97%	0 0%	94 89%	106 100%	1 1%	0 0%	0
NZ	136	121 89%	0 0%	106 78%	131 96%	4 3%	1 25%	2
<b>Malawi</b>	<b>759</b>	<b>688 91%</b>	<b>10 1%</b>	<b>636 84%</b>	<b>744 98%</b>	<b>33 4%</b>	<b>14 42%</b>	<b>2,264</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 **759** sites designated to provide clinical HIV services in Q1 2019, by zone. At the national level, there were **744** (static) sites with at least one patient on ART; **636** sites had enrolled women under PMTCT Option B+; **688** 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 33 sites, and **13** (31%) of these had produced at least 1 result during Q1 2019. The total number of CD4 results produced (**2,264**) increased from the previous quarter (1,376). With the introduction of the 'Test & Treat' policy, routine CD4 count testing to determine when to start ART has become obsolete. However, the 2019 Malawi HIV guidelines introduced routine baseline CD4 counts at ART initiation where available and outputs are expected to increase further.

## 4.2 Staffing of HIV Services

### 4.2.1 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. Logbooks are routinely reviewed during quarterly supervision and key performance data for each provider are summarized on the site supervision forms.



**Table 3**

	2018 Q2		2018 Q3		2018 Q4		2019 Q1	
Sites visited	747		755		755		754	
Sites with any tests done	714	96%	715	95%	720	95%	711	94%
Sites with registered HTC staff	672	90%	687	91%	647	86%	660	88%
<b>Total HTC staff at visited sites</b>	<b>4,232</b>		<b>4,165</b>		<b>4,288</b>		<b>4,288</b>	
Providers with any DBS (VL) samples collected	1,882	44%	1,887	45%	1,924	45%	1,837	43%
Providers with any DBS (EID) samples collected	1,455	34%	1,840	44%	1,879	44%	1,477	34%
Providers with any Syphilis test done	1,840	43%	1,879	45%	1,895	44%	1,815	42%
Providers with any HIV test done	2,728	64%	2,711	65%	2,828	66%	2,597	61%
Providers with 300+ HIV tests done this quarter	1,085	31%	1,075	31%	1,056	31%	1,027	29%
Logbooks reviewed	3,502	83%	3,488	84%	3,410	80%	3,540	83%
Providers participating in PT this quarter	1,437	41%	431	12%	2,741	80%	2,675	76%
<b>Total DBS (VL) Samples</b>	<b>67,874</b>		<b>82,233</b>		<b>72,769</b>		<b>59,147</b>	
<b>Total DBS (EID) Samples</b>	<b>9,278</b>		<b>9,268</b>		<b>10,139</b>		<b>9,608</b>	
<b>Total Syphilis tests</b>	<b>145,011</b>		<b>150,711</b>		<b>126,668</b>		<b>106,147</b>	
<b>Total HIV tests (HTC register)</b>	<b>1,132,011</b>		<b>1,210,048</b>		<b>1,106,090</b>		<b>1,117,587</b>	
HIV tests accounted for by individual staff	833,088	74%	838,939	69%	844,128	76%	783,986	70%
Source: logbooks	794,754	95%	802,856	96%	789,003	93%	745,303	95%
Source: HTC register	38,334	5%	36,083	4%	55,125	7%	38,683	5%
Total tests by staff with 300+ tests	669,533	80%	671,343	80%	664,223	79%	619,309	79%

**660 (88%)** of the 754 visited facilities had registered HIV testing providers and **711 (94%)** sites had performed at least one test during Q1 2019. **3,540 (83%)** of 4,288 providers had their logbooks available for review. This is a slight increase from the previous quarter (80%). Based on the reviewed logbooks **2,597 (61%)** had done at least one HIV test during the quarter; **1,815 (42%)** at least one syphilis test; **1,837 (43%)** had collected at least one VL sample; and **1,477 (34%)** had collected at least EID sample.

The national HIV reference laboratory organizes PT rounds every 6 months for all practising HIV testing providers (in Q1 and Q3). According to the 3,410 reviewed logbooks, **2,675 (76%)** testing providers had participated in proficiency (panel) testing (PT) this quarter. Documentation of PT may be incomplete given that not all logbooks were available for review.

**783,986 (70%)** of all **1,117,578** HTS tests conducted this quarter (according to HTC register reports) were accounted for by individual HTS staff working at the visited sites. **745,303(95%)** of these tests were documented in the reviewed logbooks and an additional **38,683 (5%)** could be attributed to individual providers from staff codes in the HTS registers. **1,027 (29%)** of 2,828 providers with documented activity had tested 300 clients or more this quarter. A dedicated full-time HTC provider is expected serve 300 clients per quarter (average of 5 clients per day for 60 working days per quarter). The **1,027 staff** who met or exceeded this target provided **619,309 (79%)** of the total number of tests accounted for by individual staff this quarter.

#### 4.2.2 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 150 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 been fairly consistent over the last 3 quarters. However, the number of ART clinicians increased by 70 from 848 to 887 from the previous quarter.

Among the other cadres, **1,325** were nurses and **948** were auxiliary staff (health surveillance assistants, clerks, etc.)

**Table 4**

	2018 Q2		2018 Q3		2018 Q4		2019 Q1	
Clinicians	766	25%	777	25%	848	27%	887	28%
Nurses	1,240	40%	1,271	41%	1,272	41%	1,325	41%
Pharmacy staff	50	2%	51	2%	44	1%	47	1%
Auxiliary Staff	1,025	33%	1,038	33%	927	30%	948	30%
<b>Total</b>	<b>3,081</b>		<b>3,137</b>		<b>3,091</b>		<b>3,207</b>	

An estimated 3.9 million ART patient visits are currently managed at the 747 ART sites per annum, based on 810,245 patients alive on ART and an average dispensing interval of 2.5 months. With 260 working days per year, an average of 14,958 patient visits is therefore managed by the ART sites per working day. At current staffing levels, this translates into an average of 17 ART patient visits per clinician and **11** 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 8 on page 29).

## 5 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' 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 the facilities they are supporting.

## 5.1 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.

**641 (90%)** of the 711 active testing sites had documented at least 1 QC set this quarter and **448 (63%)** had recorded the minimum of 12 sets (one for each week). At **624 (88%)** of sites, all samples produced the expected result.

## 5.2 HIV Testing and Counselling Outputs

**1,117,587** people<sup>7</sup> were tested and counselled for HIV between January and March 2019. This is an increase of 1% decrease from the previous quarter (**1,106,090**). Similar to previous quarters, the high outputs were owed to the deployment of dedicated testing staff (HIV Diagnostic Assistants, HDAs) at about 200 facilities. HDAs are currently hired by PEPFAR implementing partner organizations and seconded to public sector facilities, primarily to ensure routine provider-initiated HIV testing for patients.

1,085,510 (97%) of all tests were performed at health facilities, 3,851 (<1%) were done in stand-alone HTC sites and 28,226 (3%) were done outside of facilities / in the community. 32,313 people were reported as newly diagnosed with HIV this quarter. Out of these, 31,071 (97%) were diagnosed at health facilities; 145 (<1%) at stand-alone HTC sites; and 1,097 (3%) through community-based testing. The reported 'yield' for new diagnoses was 3.0% (excluding clients who disclosed a previous positive result from the denominator).

However, based on the triangulation of MPHIA results and program data for the 90-90-90 coverage estimates, **at least 46%** of all clients classified as "new positive" in HTS registers are assumed to be undisclosed repeat testers. Discounting 46% from the 32,313 reported "new positives" results in an estimated 14,301 genuine new diagnoses this quarter. This reduces the true 'yield' in the HTS program to **1.4%**.

## 5.3 HIV testing access type

**823,026 (74%)** of people tested were patients receiving provider-initiated testing and counselling (PITC); **279,325 (25%)** accessed voluntary testing and counselling, door-to-door,

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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.

community-based testing, etc.; and **14,797 (1%)** came for testing with a *Family HTC Referral Slip* (FRS) that was issued to a family member at a prior HTS encounter. Based on a total of 61,426 FRS issued to index clients this quarter, the successful referral rate for family members was **25%** (14,797/ 61,426). Issuance and utilization of FRS have increased considerably over the last quarters

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

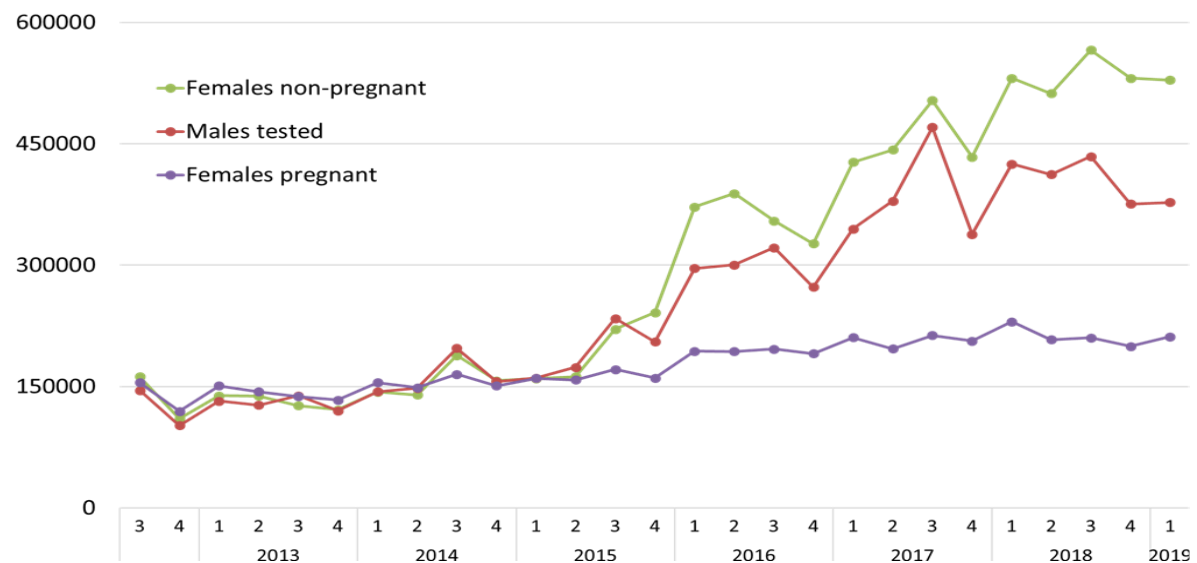
Out of **1,117,587 people** tested and counselled, **34%** were males and **66%** were females. **29%** of females were pregnant. The ratio of males (**43%**) to non-pregnant females (**57%**) has decreased slightly. Testing among pregnant women is almost entirely provider-initiated and there is no comparable access route targeting males.

201,900(18%) of all people tested accessed HTC with their partners (as a couple).

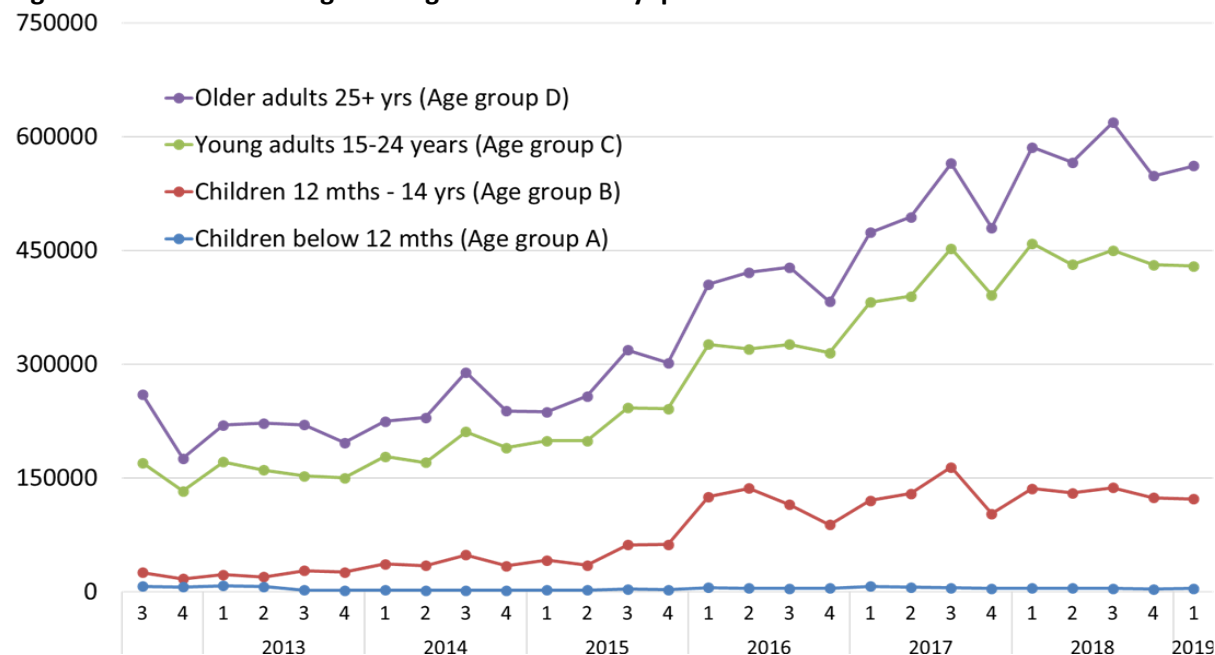
58% of all people tested and counselled were 25 years and above, 38% were adolescents or young adults (15-24 years) and 11% were children (<15 years). 4,402 (<1%) of rapid tests done were among infants.

Figure 2 and Figure 3 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 Q4 2018 to Q1 2019, the number of males, non-pregnant females and pregnant women tested decreased by 15%, 10% and 1%, respectively.

**Figure 2: Distribution of sex and pregnancy status among clients tested by quarter**



**Figure 3: Distribution of age among clients tested by quarter**



### 5.5 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. However, roll-out of this new policy has been delayed due to the slow progress with refresher trainings.

**247,550 (22 %)** of all clients tested accessed testing for the first time and **849,366 (76%)** were repeat testers. Based on the cumulative number of people who accessed HTC for the first time, a total of **10,905,469** 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.

**32,313 (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 (**175**) and inconclusive test results (**182**) both accounted for **<1 %** of new results given to clients.

**832,930 (98%)** of 849,366 **repeat** testers reported a *last negative* result. **35,894 (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. *Confirmatory test results (35,655)* exceeded the number of previous positive clients by 239. This may be explained by clients who only disclosed their previous positive status after receiving another positive result. **34,777 (99%)** of 40,537 confirmatory test results were concordant positive and **215(<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,

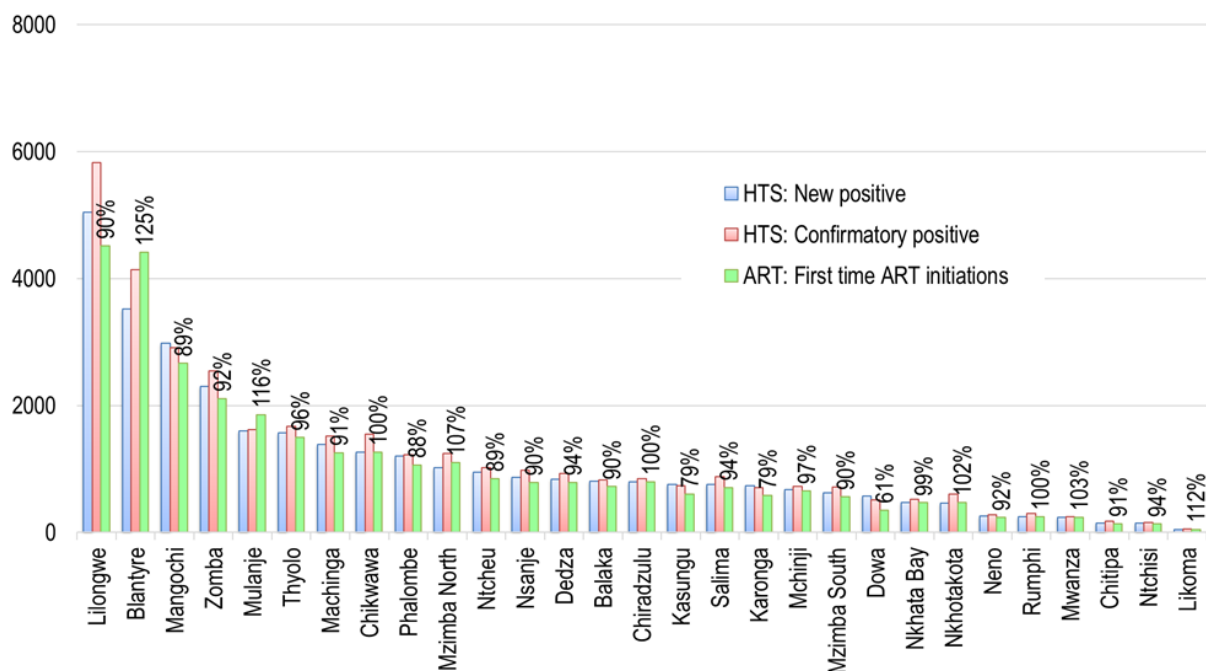
but it also underscores the importance of routine confirmatory testing before ART initiation and the need to strengthen quality assurance

## 5.6 Linkage from HIV diagnosis to ART

**Figure 4** shows a triangulation of HIV testing and ART program data by district. At the national level, the **28,858** patients who initiated ART this quarter represent **96%** of the **32,313** clients tested positive for the first time. Proxy linkage rates ranged from 61% in Dowa to 125% in Blantyre. Lilongwe had the highest number of new diagnoses (**5,044**) and ART initiations (**4,516**), implying a district-level linkage of **90%**. Very high or low linkage rates suggest that cross border access to testing and ART was seen in several districts (e.g. Salima, Likoma, Neno, Karonga, etc.).

The number of confirmatory positives exceeded the number of new positives by 3,170 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 (780) of confirmatory positives compared with the number of new positives. Lilongwe, Blantyre, Zomba, Mzimba North, Nkhotakota and Machinga accounted for **2,135** (67%) out of the 3,688 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 4,388 (14%).

**Figure 4: Number of new positives, confirmatory positives and new ART initiations in Q1 2019 by district (percentages represent ART initiations over new positives for each district)**



The full national HIV testing data are presented in the **Appendix**.

## 6 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.

606 (88%) of 686 sites with HIV exposed children in follow-up had collected and recorded at least 1 DNA-PCR sample during Q1 2019. A total of 11,063 DNA-PCR samples were collected and recorded. By the time the logbooks were reviewed (between 1 and 3 weeks after the end of the quarter), results had been received at the sites for **8,649(78%)** of these specimens and **4,997 (58%)** of these results had been communicated to the mother. The proportion of results received at the sites was 89 %, **87 %** and **57%** for samples collected in January, February and March , respectively. A total of **366 (5%)** results received at the sites were positive.

The **10 laboratories** registered the **receipt** of **8,880** DNA-PCR samples that were collected during 2019Q1 2019. This represents % of the 11,063 samples recorded in the logbooks at the sites.

A total of 8,880 valid DNA-PCR results were dispatched from the labs in Q1 2019. **6,724 (76%)** of the dispatched results were from samples collected in 2019Q1 2019, while 2,156 (24%) were from samples collected in the previous quarters. The median time between sample collection and dispatch of the result was **17 days**; 50% of results were dispatched between 13 and 23 days after sample collection.

**5,806 (65%)** of all results were from infants under 2 months old at the time of sample collection. 2,141 (24%) were 2-5 months; 604 (7%) were 6-11 months; 122 (1%) were 12-17 months; and 73 (<1%) were 18 months or older. The date of birth and/or specimen collection was missing for 134 samples, some of which may include ‘tie-breaker’ samples for patients with inconclusive rapid test results.

The number of positive DNA-PCR results has increased considerably since April 2016 when the new policy of routine confirmatory PCR testing for all children started on ART below age 2 years was introduced. Reliable identification of these confirmatory DNA-PCR results is currently not possible from the LIMS, leading to double counting of children with initial positive results.

Age at sample collection	Tot. Results	Positives	
<2 months	5,807	8 109	1.9%
2-5 months	2,140	1146	6.85%
6-11 months	604	1140	23.1%
12-17 months	1 122	768	55.7.0%
18 months +	873	347	64.3%
(missing)	2134	216	12.0%
<b>Total</b>	<b>8,880</b>	<b>526</b>	<b>5.4%</b>

**5526 (5.9%)** of all results dispatched were positive. The age-specific number (%) of positive results is shown on the left. Receipt of the DNA-PCR result at the health facility is a prerequisite to updating of patient records and for appropriate clinical management. Considering the delays between sample collection and dispatch of the test result from the lab, the child’s age at the time of dispatch of the result

from the lab is a useful indicator for early infant diagnosis and treatment. The table below shows the distribution of ages when results were dispatched from the lab. **Table 6**

Age when result sent from lab	Tot. Res.	(Col %)	Positives	(Col %)
<2 months	2,201	23%	120	33%
2-5 months	65,611	63%	1215	41%
6-11 months	7704	8%	1147	30%
12-17 months	1147	2%	75	14%
18 months +	83	1%	53	910%
(missing)	2134	2%	16	3%
<b>Total</b>	<b>98,880</b>	<b>100%</b>	<b>5526</b>	<b>100%</b>

Out of **526** positive results dispatched, only **20(3%)** were sent before the child was 2 months old. A total of **235 (45%)** positive results were sent before the child was 6 months old and **382 (73%)** were sent before the child was 12 months old. A total

of **127** infants were started on ART in WHO stage 1 or 2 on the basis of confirmed HIV infection (see ART section below). Due to the potential for double counting of positive infants in the lab data, this ratio can no longer be interpreted for early infant ART linkage.

## 7 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 25,763 +blood units were collected in Malawi during Q1 2019. MBTS collected **18,459 (72%)** of these, **100%** of which were screened comprehensively for the relevant TTIs (HIV, Hepatitis B, Hepatitis C, syphilis, malaria). In addition, **60** hospitals in Malawi collected a total of 4,422 units from replacement donors. **3,492 (79%)** of these units were screened for at least the 3 key TTIs (HIV, HepB and syphilis) and **2,387(68%)** of these were also screened for HepC and malaria. This means that a total of **25,029 (99.5%)** 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, 774 were screened with any other combination of tests for TTIs.

A total of **4,422** potential replacement donors were documented in the blood donor registers at the facilities and **4,422 (100%)** 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 TTs may have only been carried out for donors who passed the screening for more common conditions. In total, 79% of potential donors were



tested for HIV, 79% for HepB, 80% for syphilis, 69% for malaria and 51% for HepC. Detailed data on outcomes of individual tests among all potential blood donors are presented in the Appendix.

## 8 Preventive Services

### 8.1 Post Exposure Prophylaxis (PEP)

A total of 2,719 persons received PEP during Q1 2019. This is a drop from the previous quarter (3,374).

### 8.2 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 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 7** shows that **87,640 (21%)** of 418,741 women received Depo-Provera from ART clinics in Q1 2019. The south east zone had achieved the highest coverage. Patient coverage was similar with the previous quarter. 252 (33%) of ART/PMTCT sites had stocks of Depo-Provera in April 2019. This is a further decline from the previous quarter with 361 sites with Depo in January 2019.<sup>8</sup> The HIV Program is no longer supplementing FP supplies through procurement and distribution of additional Depo-Provera to sites.

### 8.3 Cotrimoxazole Preventive Therapy (CPT)

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%.

There were 132,276 HIV exposed children in follow-up between January and March 2019. Out of these 98,745 (75%) were on CPT. CPT coverage was lowest in North zone (68%) and highest in South East zone (77%).

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<sup>8</sup> Many Mission hospitals do not provide family planning.

#### 8.4 Isoniazid Preventive Therapy (IPT), Family Planning and BP Screening

ART patients with a negative screening outcome for TB symptoms in the 5 districts with the highest TB burden (Lilongwe, Blantyre, Chiradzulu, Thyolo, Zomba) are currently eligible for continuous IPT.

**Table 7** shows that **244,504 (71%)** of the 343,347 ART patients in the 5 districts were on IPT by the end of Q1 2019. IPT coverage ranged from **65 %** in Thyolo to **81%** in Zomba.

**628,815 (78%)** of 806,823 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. **198,458 (32%)** of 628,815 were screened for hypertension at least once in 2019.

**Table 5**

Zone District	Patients on ART (all)					Women (18-49) on ART			Adults (30+) on ART		
	Total	On CPT		On IPT		Total	Given FP*		Total	BP screened**	
<b>Malawi (National)</b>	<b>806,823</b>	717,142	89%	244,504	30%	<b>418,741</b>	87,640	21%	<b>628,515</b>	198,458	32%
Northern Zone	<b>80,601</b>	72,568	90%	0	0%	<b>41,832</b>	10,086	24%	<b>62,788</b>	23,256	37%
Chitipa	<b>6,185</b>	5,209	84%	0	0%	<b>3,210</b>	1,140	36%	<b>4,818</b>	1,789	37%
Karonga	<b>13,753</b>	12,417	90%	0	0%	<b>7,138</b>	1,689	24%	<b>10,714</b>	3,812	36%
Nkhata Bay	<b>9,799</b>	9,177	94%	0	0%	<b>5,086</b>	247	5%	<b>7,633</b>	2,238	29%
Rumphi	<b>8,373</b>	7,993	95%	0	0%	<b>4,346</b>	1,669	38%	<b>6,523</b>	3,019	46%
Mzimba North	<b>26,211</b>	21,831	83%	0	0%	<b>13,604</b>	2,520	19%	<b>20,418</b>	8,155	40%
Mzimba South	<b>15,568</b>	15,272	98%	0	0%	<b>8,080</b>	2,702	33%	<b>12,127</b>	4,092	34%
Likoma	<b>712</b>	669	94%	0	0%	<b>370</b>	118	32%	<b>555</b>	150	27%
Central East Zone	<b>64,058</b>	60,549	95%	0	0%	<b>33,246</b>	4,918	15%	<b>49,901</b>	15,645	31%
Nkhotakota	<b>12,239</b>	11,540	94%	0	0%	<b>6,352</b>	1,049	17%	<b>9,534</b>	2,376	25%
Kasungu	<b>17,504</b>	15,963	91%	0	0%	<b>9,085</b>	250	3%	<b>13,636</b>	3,385	25%
Ntchisi	<b>4,763</b>	4,616	97%	0	0%	<b>2,472</b>	319	13%	<b>3,710</b>	962	26%
Dowa	<b>13,022</b>	12,247	94%	0	0%	<b>6,758</b>	1,716	25%	<b>10,144</b>	4,132	41%
Salima	<b>16,530</b>	16,182	98%	0	0%	<b>8,579</b>	1,583	18%	<b>12,877</b>	4,791	37%
Central West Zone	<b>165,878</b>	139,384	84%	67,949	41%	<b>86,091</b>	14,892	17%	<b>129,219</b>	51,381	40%
Lilongwe	<b>102,785</b>	82,930	81%	67,949	66%	<b>53,345</b>	11,704	22%	<b>80,070</b>	42,786	53%
Mchinji	<b>17,333</b>	16,603	96%	0	0%	<b>8,996</b>	1,238	14%	<b>13,502</b>	1,573	12%
Dedza	<b>19,133</b>	13,905	73%	0	0%	<b>9,930</b>	309	3%	<b>14,905</b>	3,085	21%
Ntcheu	<b>26,627</b>	25,946	97%	0	0%	<b>13,819</b>	1,640	12%	<b>20,742</b>	3,937	19%
South West Zone	<b>252,155</b>	215,569	85%	133,000	53%	<b>130,868</b>	24,104	18%	<b>196,429</b>	48,177	25%
Chiradzulu	<b>39,621</b>	33,507	85%	30,003	76%	<b>20,563</b>	5,510	27%	<b>30,865</b>	1,687	5%
Blantyre	<b>92,351</b>	77,099	83%	67,195	73%	<b>47,930</b>	6,774	14%	<b>71,941</b>	21,611	30%
Mwanza	<b>6,176</b>	1,651	27%	0	0%	<b>3,205</b>	438	14%	<b>4,811</b>	851	18%
Thyolo	<b>54,729</b>	50,265	92%	35,802	65%	<b>28,404</b>	7,899	28%	<b>42,634</b>	8,264	19%
Chikwawa	<b>29,043</b>	23,585	81%	0	0%	<b>15,073</b>	387	3%	<b>22,624</b>	6,050	27%
Nsanje	<b>21,811</b>	21,246	97%	0	0%	<b>11,320</b>	835	7%	<b>16,991</b>	3,502	21%
Neno	<b>8,424</b>	8,215	98%	0	0%	<b>4,372</b>	2,261	52%	<b>6,562</b>	6,213	95%
South East Zone	<b>244,131</b>	229,072	94%	43,555	18%	<b>126,704</b>	33,639	27%	<b>190,178</b>	59,999	32%
Mangochi	<b>51,706</b>	49,228	95%	0	0%	<b>26,835</b>	10,775	40%	<b>40,279</b>	16,904	42%
Machinga	<b>29,713</b>	27,005	91%	0	0%	<b>15,421</b>	2,562	17%	<b>23,146</b>	5,345	23%
Zomba	<b>53,861</b>	49,774	92%	43,555	81%	<b>27,954</b>	4,043	14%	<b>41,958</b>	17,446	42%
Mulanje	<b>53,837</b>	50,725	94%	0	0%	<b>27,941</b>	11,684	42%	<b>41,939</b>	15,623	37%
Phalombe	<b>33,708</b>	31,658	94%	0	0%	<b>17,494</b>	4,240	24%	<b>26,259</b>	3,025	12%
Balaka	<b>21,306</b>	20,681	97%	0	0%	<b>11,058</b>	335	3%	<b>16,597</b>	1,656	10%

\* 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.

## 8.5 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.

**785,323 (97%)** of all patients retained on ART were screened for TB at their last visit before end of March 2019. Out of these, **9,351 (1%)** patients were classified as new TB suspects. **2,091 (<1)** patients were confirmed to have TB (clinical or lab based) and **1,954 (93%)** of these were on TB treatment; the remaining **353** had either not yet started or interrupted TB treatment. An excerpt from the data in the **Annex (Cumulative ART outcomes)** is shown below.

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

ICF not done (Current TB status unknown/ not circ)	21,433	3%
ICF done	785,323	97%
TB not suspected	773,881	99%
TB suspected	9,351	1%
TB confirmed	2,091	0%
TB confirmed, not on treatment	137	7%
TB confirmed, on TB treatment	1,954	93%

## 9 HIV-Related Diseases

**Table 8** shows the number of patients treated for key HIV-related indicator diseases. **4,073** patients were started on TB treatment this quarter and HIV status was ascertained for **4,073 (99)**; **1,874 (47%)** of these were HIV positive and **1,801 (96%)** of all HIV positives were already on ART when starting TB treatment. In 2019 Q1, **271** and **611** patients received Diflucan for acute cryptococcal meningitis and oesophageal candidiasis, respectively. **130** 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, CM = cryptococcal meningitis, OC = oesophageal candidiasis).

	TB				KS *	CM *	OC *
	Tot. cases	HIV status asc.	HIV positive	Already on ART	Tot. cases	Tot. cases	Tot. cases
2018 Q2	3,972	3,870 97%	1,808 47%	1,688 93%	121	705	856
2018 Q3	3,908	3,798 97%	1,878 49%	1,711 91%	137	434	1,011
2018 Q4	3,954	3,854 97%	2,001 52%	1,892 95%	138	574	738
2019 Q1	4,073	4,018 99%	1,874 47%	1,801 96%	130	271	611

## 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

**14,451** HIV exposed children were newly enrolled into follow-up during Q1 2019; **11,495 (80%)** of these were under the age of 2 months. The total number of new enrolments (14,451) exceeds by 5,077 (54) the total number of known HIV exposed children discharged from maternity (9,377). 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 **11,005** infants in the **2-month age cohort**. **8,393 (76%)** had received a DNA-PCR result. **120(1%)** of these were confirmed HIV infected. An additional **15** infants were

diagnosed with *presumed severe HIV disease*, which means that a total of **135** infants were eligible for ART. **92(68)** of these had started ART. This is a slight drop from the previous quarter (72%). Out of the entire 2-month age cohort, **9,603 (94%)** were retained in exposed child follow-up, **92 (1)** had started ART and **10 (<1)** were discharged confirmed uninfected<sup>9</sup>. **48 (<1%)** were known to have died and **492 (4%)** had been lost to follow-up.

There were 12,466 children in the **12-month age cohort**. Current HIV infection status was known for **9,351 (75%)** children (DNA-PCR or rapid antibody test) and **205 (2%)** of these were confirmed HIV infected. **16 (<1%)** additional children had been diagnosed with *presumed severe HIV disease*, which means that a total of 221 children were eligible for ART. **191 (86%)** had started ART. The proportion of positives starting ART was similar in the previous quarter (87%). Out of the entire age cohort, **9,531 (84%)** were retained in exposed child follow-up, **191 (2%)** had started ART and **132 (<1)** were discharged confirmed uninfected.<sup>9</sup> **1,449(13%)** were lost to follow-up and **94 (1%)** were known to have died.

There were **11,147** children in the **24-month age cohort**. Current HIV infection status was known for **7,845 (70%)** children (DNA-PCR or rapid antibody test) and **278 (4%)** of these were confirmed HIV infected. **4** additional children had been diagnosed with *presumed severe HIV disease*, which means that a total of **282** children were eligible for ART. **246 (87%)** of these had started ART. Out of the entire age cohort, **267 (3%)** were retained in exposed child follow up, **246 (2)** had started ART and **7,345 (72%)** were discharged confirmed uninfected. **2,186 (21%)** were lost to follow-up and **133(1%)** were known to have died.

**Confirmed HIV-free survival at age 24 months** in this quarter was **72%**. This was related to the fact that only 70% in this cohort had a known HIV status. 3,302 (30%) children were classified as '*current HIV infection status unknown*' and many of these may be among the 2,186 children lost to follow-up and the 133 children who had died. Only 267 (3%) 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

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<sup>9</sup> A small number of children may be rightfully discharged as 'confirmed uninfected' by 2 or 12 months of age, provided that HIV exposure through breast milk has definitely stopped (e.g. maternal death) and a negative HIV test was obtained at least 6 weeks thereafter.

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 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 of the known HIV infected women deliver at health facilities. ART coverage among known positives is therefore reliably calculated from maternity reports. Women admitted at maternity who are referred to another facility before / after delivery are double counted in aggregated maternity data. Assuming the probability of referral is independent of ART status, the number of women already on ART when getting pregnant is therefore **adjusted** by the overall proportion of referrals among women admitted to maternity.



**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: 2019 Spectrum model for Malawi). There are an estimated 10,932 HIV infected pregnant women in the population per quarter (1/4 of 43,728 in 2019).<sup>10</sup>

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

**13,000(119%)** of the estimated 10,932 HIV infected pregnant women in Malawi this quarter were on ART. This is based on **9,312**<sup>10</sup> women at maternity who were already on ART when getting pregnant and **3,688**<sup>11</sup> women who newly initiated ART in pregnancy. ART coverage was higher than last quarter(89%) .This> 100% coverage is explained by the reduced numbers of women who need PMTCT from the modelled estimates of 2019..

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<sup>10</sup> 9,880 women who started ART before pregnancy admitted at maternity; reduced by 5.8% to adjust for double-counting of 7,858 referrals among 136,653 total admissions.

<sup>11</sup> 4,721 women registered at ART clinics who were pregnant at the time of starting ART; a) 13.5% are discounted to adjust for double-counting of transfers based on 974 of 7,209 women who transferred within 12 months of registration (12-month Option B+ survival analysis); b) 21.5% are discounted to account for presumed failed ART initiations based on 1,407 of 7,010 women lost to follow-up within 6 months of registration (6-month Option B+ survival analysis).



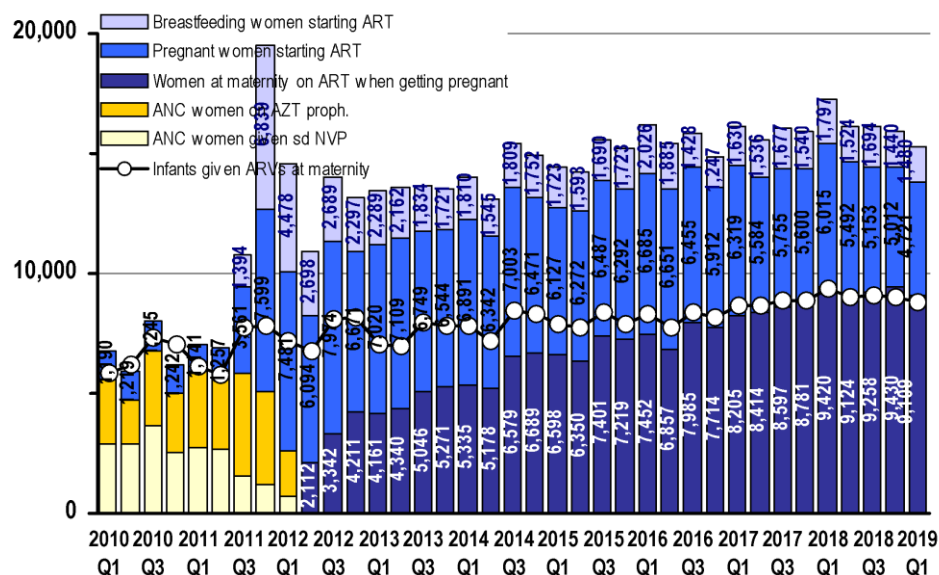
An additional **1,280**<sup>12</sup> breastfeeding women started ART while breastfeeding (in WHO clinical stage 1 or 2), bringing the total number newly started on ART while pregnant or breastfeeding to **4,083**. Most women starting ART while breastfeeding were probably identified late in maternity or early in the postnatal period, but this group may also include some women who re-initiated after interrupting ART in pregnancy. **8,789** infants were confirmed to have started NVP prophylaxis at maternity.

**Figure 4** shows the transition from prophylactic ARV regimens for HIV infected mothers to universal ART under **Option B+** which has now been superseded by universal ART (registration data; not adjusted as above). 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 4**

### Transition from prophylactic ARV regimens for PMTCT to Option B+ 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. Data on women already on ART when getting pregnant are only available from Q2 2012.



## 11.3 HIV Services at ANC

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

### 11.3.1 HIV Ascertainment and ART Coverage

#### Booking cohort:

**164,380** women attended ANC for their first visit between January and March 2019. This is 103% of the estimated 160,169 pregnant women in the 2019 population during one quarter.<sup>13</sup> **159,425 (97%)** of women in this cohort had their HIV status ascertained at the first visit. Out

<sup>12</sup> 1,480 women registered at ART clinics who were breastfeeding at the time of starting ART; reduced by 13.5% to adjust for double-counting of transfers based on 974 of 7,209 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.

of these, **10,200 (2%)** presented with a valid previous test result and **149,225 (94%)** received a new test. A total of **10,0386%** of women were found HIV positive: **7,024 (69%)** of these from a documented previous test and **3,014 (2%)** from a new test. **9,845 (98%)** of all positives were on ART: **6,951(71%)** of these were already on ART when starting ANC and **2,576 (26%)** newly started ART at their first ANC visit. Out of these, **2,318 (98%)** were in their 1<sup>st</sup> or 2<sup>nd</sup> trimester and **318 (3%)** were in the 3<sup>rd</sup> trimester of pregnancy

#### **Outcome cohort:**

**156,104** women had started ANC between July and August 2019 and their outcomes were reported between January and March 2019.

**1152,808 (98%)** of the outcome cohort had their HIV status ascertained at least once in the course of ANC. This is similar to the previous quarter (98%). **11,205(7%)** presented with a valid documented previous HIV test result and **141,603 (93%)** received a new HIV test result at ANC. A total of **10,973 (7%)** women were found HIV positive. This is slightly lower than the latest Spectrum projections (8.4% HIV prevalence among pregnant women in 2019).<sup>10</sup>

**110,827(99%)** of (known) HIV infected women were on ART by the end of ANC. This represents **99%** coverage of the estimated 10,932 HIV positive pregnant women per quarter at the population level. Of the **10,827** ANC women who were known to receive ART **7,633(70%)** were already on ART when starting ANC, **2,791 (26%)** initiated before 28 weeks of pregnancy and **403 (4%)** initiated during the last trimester of pregnancy. **10,764 (98%)** of HIV infected women at ANC were on Cotrimoxazole Preventive Therapy. **10,361 (94%)** of known HIV infected women attending ANC received the infant dose of ARVs (nevirapine syrup) to take home.

#### **11.3.2 Syphilis Screening**

**135,247 (87%)** of women in the outcome cohort were tested for syphilis and **1,430 (1%)** were syphilis positive. The syphilis testing rate has improved considerably over the last few quarters and the proportion of positive syphilis test results is consistent with syphilis prevalence estimated from the 2010 ANC sentinel surveillance round.

#### **11.4 HIV Services at Maternity**

Between January and March 2019, 136,653 women were admitted for delivery to maternity; **7,858** of these were referred to another facility before delivery, resulting in **128,795** total admissions to maternity during 2Q1 2019.<sup>13</sup>

A total of **131,915** babies were born, **127,407 (97%)** were singletons and **4,508 (3%)** were twins/multiples. There were **129,830 (98%)** live births and **2,085 (2%)** stillbirths. **128,856 (99%)** of babies born alive were discharged alive and **974 (1%)** died before discharge. The full national data from maternity are presented in the **Appendix**.

### 11.4.1 HIV Ascertainment at Maternity

**129,256 (95%)** women had their HIV status ascertained at maternity. Out of these, **42,897 (33%)** presented with a valid previous HIV test result and **86,692 (67%)** received a new test. A total of **10,018 (7%)** women were HIV positive and **119,508 (92%)** were negative. The **129,256** women whose HIV status was ascertained at maternity represent **81%** of the expected 160,169 women delivering in the population.

HIV exposure status was ascertained for **123,765 (96%)** out of 129,830 babies born and discharged alive. **9,377 (7%)** of these were born to a known HIV positive mother

### 11.4.2 ARV Coverage at Maternity

A total of **9,880 (99%)** of known HIV infected women admitted to maternity received ART. Out of these, **9,109 (92%)** had started ART before pregnancy, **386(4%)** initiated ART during the 1<sup>st</sup> or 2<sup>nd</sup> trimester, **172 (2%)** initiated during the 3<sup>rd</sup> trimester and **213 (1%)** initiated ART at maternity.

A total of **8,787 (94%)** of 9,377 infants who were known HIV exposed and discharged alive started daily NVP prophylaxis at maternity. This represents **80%** coverage of the estimated 10,932 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 2019

By the end of March 2019, there were 750 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 7**). The new policy for universal ART eligibility (“**Test & Treat**”) was introduced in **May 2016**. This policy has led to an unprecedented increase in ART initiations in Q3 2016 when almost all remaining pre-ART patients-initiated ART.

A total of **31,145** patients-initiated ART for the first time in Q1 2019. The total number of patients newly initiated on ART represents 93% of the 32,313 people recorded as newly diagnosed with HIV during the quarter.

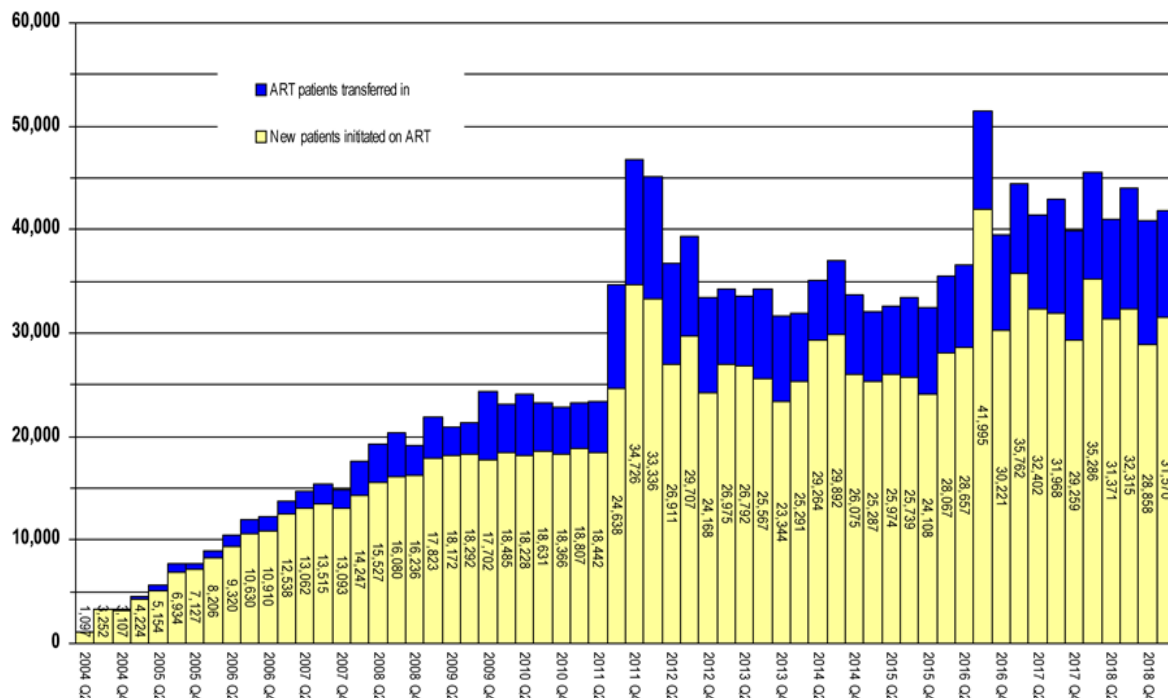
Among all new ART clinic registrations<sup>13</sup> in Q1 2019, **40%** were males and **60%** were females. **4,721 (19%)** of the registered females were pregnant at the time of starting ART.

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<sup>13</sup> These proportions include the 31,145 patients newly initiating ART, but also 10,218 patients previously started on ART who transferred between sites and 505 patients who re-initiated ART after treatment interruption.

**Figure 5**  
**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 **36,213 (87%)** of all patients registered started in WHO stage 1 or 2 and **27,343 (79%)** of these started as 'asymptomatic' under universal ART eligibility policy. **4,075 (10%)** of patients registered started in WHO stage 3 and **1,102 (3%)** started in stage 4.

**22,608** children were registered at ART sites in Q1 2019. **721(28%)** of these were children aged 12-59 months in WHO stage 1 or 2. **63 (2%)** children started ART with presumed severe HIV disease. **127** infants in WHO stage 1 or 2 started due to confirmed HIV infection through DNAPCR. Early infant treatment has remained at about half of the estimated infected infants seen at maternity: considering that 9,377 HIV exposed infants were identified at maternity and assuming a 2% transmission rate among the 95% of HIV positive mothers at maternity who received ART (and 20% transmission in the 5% who did not receive ART)<sup>14</sup>, only about 226 of these known HIV exposed infants may have been infected perinatally during Q1 2019. However, considering the projected 834 new infant HIV infections in the 2019 population per quarter<sup>10</sup>, early infant treatment coverage remains low at an estimated **15%** (127/ 834). The most significant bottleneck for early infant treatment remains the identification of HIV (probably mostly recently) infected pregnant / breastfeeding women.

**7537 (2%)** out of all ART clinic registrations were patients with TB: **311 (1%)** had a current and **226 (1%)** a recent history of TB. **130 (<11%)** of patients registered had Kaposi's sarcoma.

<sup>14</sup> UNAIDS Reference Group on Estimates Modelling and Projections (2011). Working paper on mother-to child-transmission rates for use in Spectrum. Geneva, UNAIDS.

## 12.2 Cumulative ART Registrations up to March 2019

By the end of March 2019, there were a cumulative total of **1,638,431** clinic registrations, **1,375,251 (79%)** of whom were patients newly initiated on ART; **323,391 (19%)** were patients who transferred between clinics; 29,605 (**2%**) 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

**810,245 patients were alive on ART** by the end of March 2019. This is equivalent to **76% ART coverage** among the estimated 1,062,622 HIV positive population in Malawi in 2019 and it means that the national ART scale-up target for March 2019 (76% coverage) has been achieved. The number of patients on ART includes an estimated 3,422 patients in transit between sites: given the standard 3 month dispensing interval, 50% of the 6,843 patients newly registered as transferred out at sites across the country are assumed to be in transit at the end of the quarter.

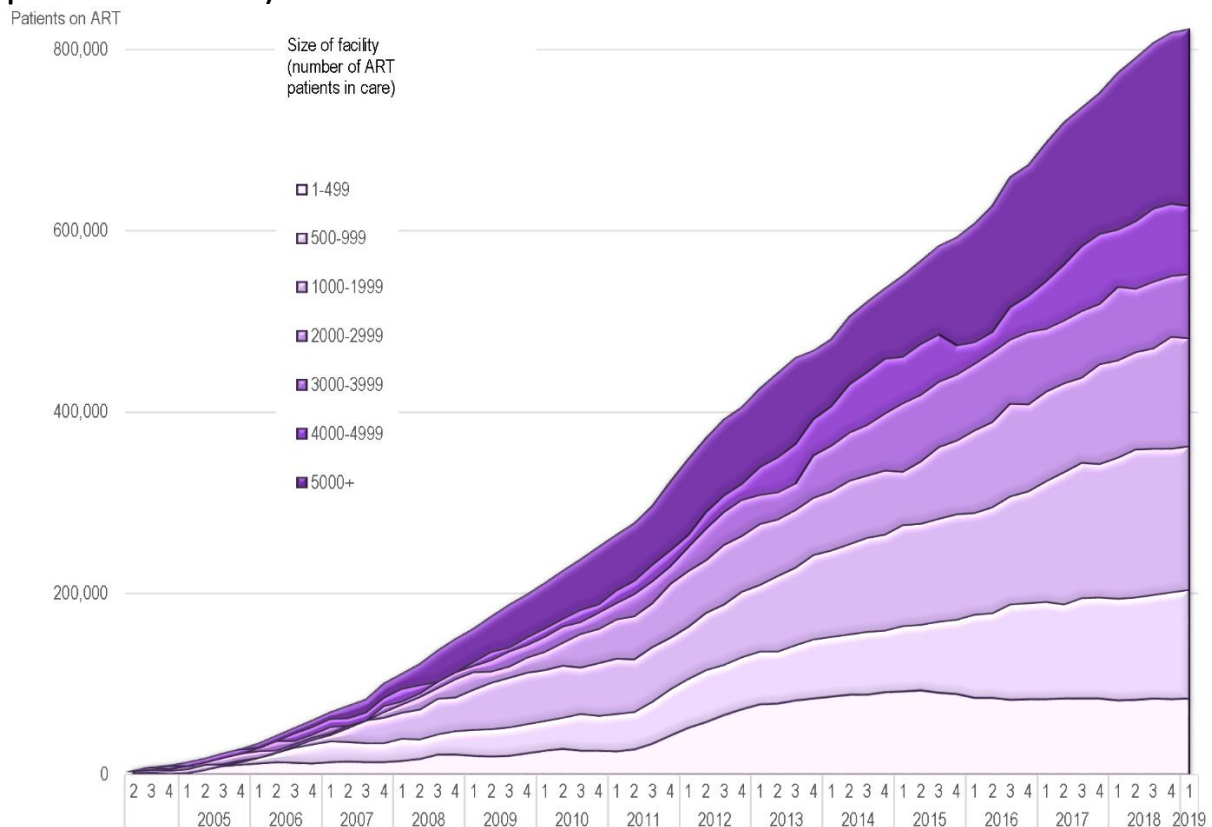
Out of the 1,357,251 patients ever initiated on ART, **810,245 (60%)** were retained alive on ART, **114,212 (9%)** were known to have died, **365,725(28%)** were lost to follow-up and **7,042 (1%)** were known to have stopped ART.

An estimated **765,253** adults and **44,992** children (<15 years)<sup>15</sup> were alive on ART by the end of March 2019. This represents **64%** (44,992/ 69,987) and **77%** (765,253 / 992,635) ART coverage among children and adults, respectively.

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<sup>15</sup> The total national number of ART patients with current age <15 years is extrapolated from the proportion of patients at EMR sites who were <15 years at the end of Q1 2019.

**Figure 6: Patients alive on ART at the end of each quarter, stratified by size of facility (number of patients alive on ART)**



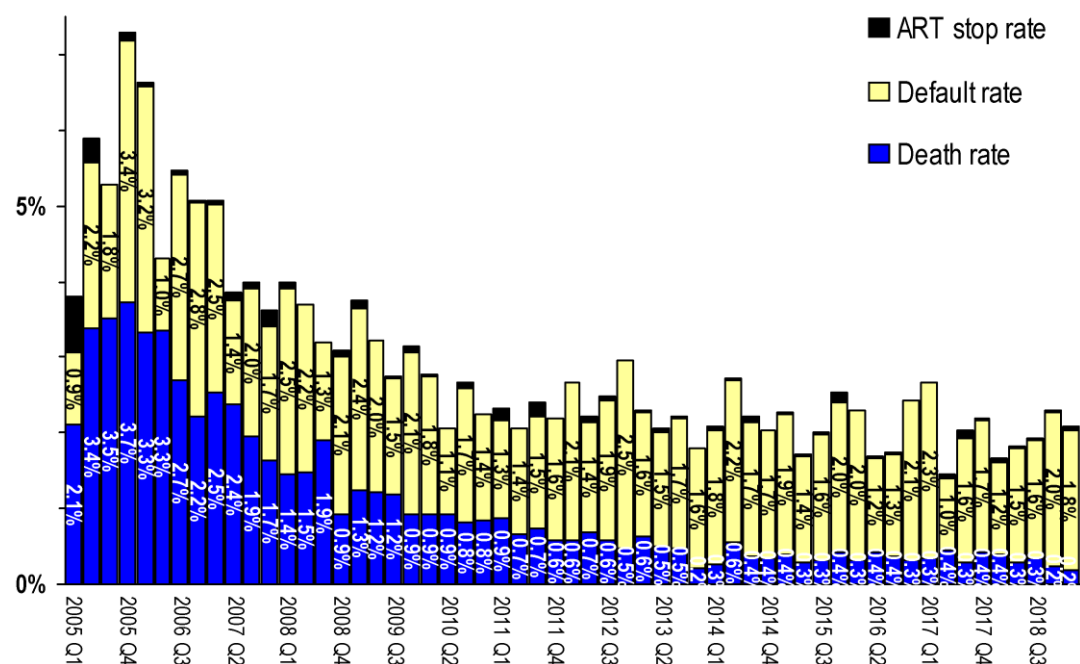
**Figure 8** shows the increase of patients alive on ART by the end of each quarter, stratified by facility volume. The net increase of **4,991** patients alive on ART between January and March 2019 was lower than last quarter which was also the lowest quarterly growth since the introduction of the “Test and Treat” policy in 2016. This was due to the increasing attrition rates over the last 4 quarters (see **Figure 9** below).

**Figure 8** also 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 2019, **44%** of the national ART patient cohort was in care at sites with fewer than 2,000 patients.



**Figure 7**  
**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)

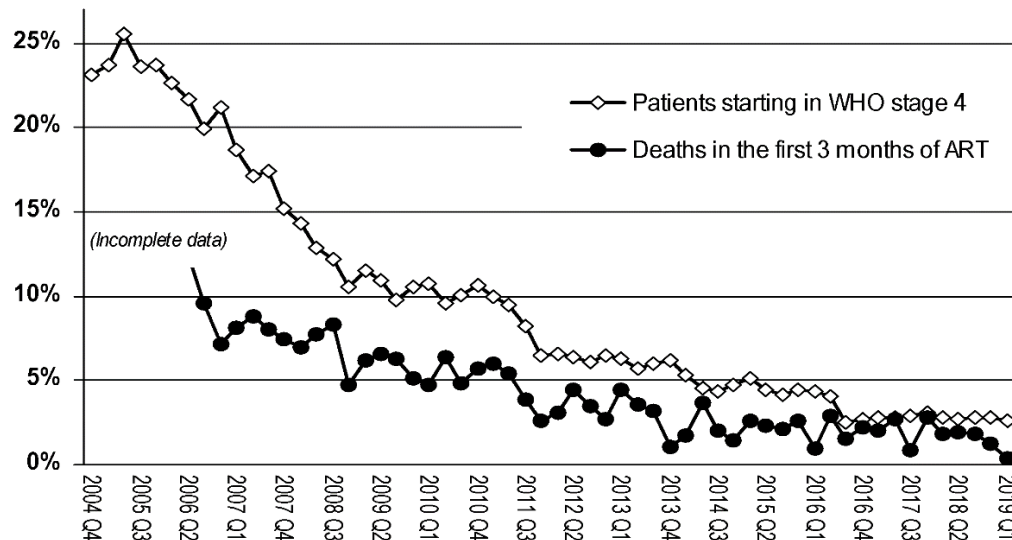


**Figure 9** shows the considerable decrease of ART drop-out rates since the start of the national program, most of which was contributed by reduction in mortality. Quarterly defaulter rates appeared to have stabilized around 1.8% over the last 5 years. However, there was a continuous increase from 1.2% in Q1 to 2.0% in Q4 2018 before slightly dropping to 1.8% this quarter. . Loss to follow-up ('defaulters') include undocumented 'silent' transfers, undocumented mortality and patients actually stopping treatment. Targeted investigations at sites with high loss to follow-up this quarter revealed that some patients who were actually retained had been misclassified as lost to follow-up because their most recent visit was not entered in the electronic medical records system due to system down-time. However, it was also confirmed that some facilities, such as Namitambo and Milepa Health Centers witnessed a real increase in patients who had missed their appointment. 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 **1,524** new deaths, **15,344** new defaulters and **445** new confirmed stops in Q1 2019. This translates into a quarterly death rate of **0.2%** and a defaulter rate of **1.8%** among the patients alive and on treatment in this quarter.

**Figure 8**

Patients starting ART in WHO stage 4 and deaths in the first 3 months after ART initiation. (Shown as proportions among new patients registered each quarter)



**Figure 9** 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. However, there was a continuous increase from 1.2% in Q1 to 2.0% in Q4 2018 before slightly dropping to 1.8% this quarter. . Loss to follow-up (‘defaulters’) include undocumented ‘silent’ transfers, undocumented mortality and patients actually stopping treatment. Targeted investigations at sites with high loss to follow-up this quarter revealed that some patients who were actually retained had been misclassified as lost to follow-up because their most recent visit was not entered in the electronic medical records system due to system down-time. However, it was also confirmed that some facilities, such as Namitambo and Milepa Health Centers witnessed a real increase in patients who had missed their appointment. 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 **1,524** new deaths, **15,344** new defaulters and **445** new confirmed stops in Q1 2019. This translates into a quarterly death rate of **0.2%** and a defaulter rate of **1.8%** among the patients alive and on treatment in this quarter.

Figure 8 shows the considerable decline in **early mortality** since the start of the program. In Q2 2006, 22% of patients started ART in WHO stage 4 and 12% of all new patients died within the first 3 months of ART. Early mortality on ART has since declined significantly as patients were diagnosed and started on ART in less advanced stages of HIV infection. In the past 5 years, early mortality has consistently been below 5% and seems to have stabilized below 2%. The “Test and Treat” policy for all may result in a further decline in early mortality.



## 12.4 ART Cohort Survival Analysis

A 12, 24, 36, 48, 60, 72, 84 and 96-month ‘**cohort outcome survival analysis**’ was conducted for patients registered in Q1 of 2010 to 2018, 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 2018. A further subgroup analysis was done for women who started ART under **Option B+** in Q4 of 2014, 2015, 2016 and Q3 of 2018.

**72% of adults** and **75% of children** were retained alive on ART after 12 months on treatment. Retention was similar for both adults (72%) and children (72%) when compared with 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>16</sup>

**6-month group cohort survival** outcomes were known for **6,728** women registered as having started ART under Option B+ in Q4 2018. This exceeds by 1,769 (26%) the number of women registered under Option B+ in the quarterly cohort analysis in Q4 2018. This discrepancy is likely due to errors in data abstraction.<sup>20</sup> The 6,728 women in this cohort survival analysis include 651 (10%) women who transferred between sites. These transfers are double counted and discounted from the denominator (6,017) for the calculation of retention rates. **44,582 (75%)** women in this cohort were retained at 6 months after registration. Of those not retained, **1,444(97%)** were lost to follow-up, **6 (<1%)** were known to have stopped ART and **45 (3%)** were known to have died.

**12-month group cohort survival** outcomes were known for 7,209 women registered as having started ART under Option B+ in Q1 2018. This exceeds by 2,269 (31%) the number of women registered under Option B+ in the quarterly cohort analysis in Q1 2018. This discrepancy is likely due to errors in data abstraction.<sup>17</sup> The **7,209** women in this cohort survival analysis include 974 (14%) women who transferred between sites. These transfers are double counted and discounted from the denominator (**6,235**) for the calculation of retention rates.

**4,419 (71%)** of women in this cohort were retained at 12 months after registration. **1,743 (96%)** of those not retained were lost to follow-up, **17 (1%)** were known to have stopped ART and **56 (3%)** were known to have died.

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<sup>16</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-

<sup>17</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.

## ART survival analysis

Malawi (National)

2019 Q1 (Quarter)

### 6 month survival OptionB+

#### Survival and retention in ART program

\*

##### ART cohort registration group outcomes

Total ART clinic registrations	6,728	100%
Transfers out (double counted)	651	10%
Total not transferred out (patients in cohort)	6,077	90%
Total alive on ART	4,582	75%
Total not retained	1,495	25%
Defaulted	1,444	97%
Stopped ART	6	0%
Died	45	3%

### 12 month survival OptionB+

#### Survival and retention in ART program

\*

##### ART cohort registration group outcomes

Total ART clinic registrations	7,209	100%
Transfers out (double counted)	974	14%
Total not transferred out (patients in cohort)	6,235	86%
Total alive on ART	4,419	71%
Total not retained	1,816	29%
Defaulted	1,743	96%
Stopped ART	17	1%
Died	56	3%

#### 12.4.1 Secondary outcomes of patients retained on ART

806,823 patients who were alive on ART and remained registered at their facilities have documented secondary outcomes. Secondary outcomes are not known for patients in transit.

#### ART Regimens

**767,718 (95%)** of patients were on first line regimens. The number of patients on 2<sup>nd</sup> line ART increased by 1,487 from 22,746 in the previous quarter, reaching **24,220 (3%)** of patients on ART at the end of Q1. **14,885 (2%)** patients were on non-standard regimens. This was an increase by 89% from last quarter's 1,608. This increase is attributed to the EMR's ART module update with new guidelines where in some sites, the system was unable to properly update patients who transitioned from 5A to 13A and categorized these patients as receiving the non-standard regimens. Efforts were taken to sort out the issue and the next quarter will have a clear picture. 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 first line regimens, **22,915 (3%)** were on paediatric formulations and **21,820 (95%)** of these were on the standard first line for children (regimen 2P: AZT/3TC/NVP). The great majority of patients on 1<sup>st</sup> line ART were on regimen **5A** (tenofovir / lamivudine / efavirenz) **427,130 (57%)**

**284,784 (38%)** had transitioned to the new standard first line regimen **13A (tenofovir / lamivudine / dolutegravir)** of all new and existing eligible patients from January 2019 as per updated ART guidelines

### **Adherence to ART**

Facilities are doing very well documenting patient adherence. **741,190 (92%)** of all patients retained in care had documented the number of missed doses at each visit and **577,420 (78%)** of these were classified as >95% adherent. 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. There was a marked difference in reported adherence levels between EMR and paper-based sites with **70.5%** and **98.5%** of ART patients with good adherence in Q1 2019, respectively.

### **ART Side Effects**

**803,525 (>99%)** patients on ART had information on drug side effects documented at their last clinic visit before end of March 2019. **2,310 (<1%)** of patients with information had documented side-effects. The prevalence of side effects seems to have stabilized at very low levels following the full transition to regimen 5A (tenofovir / lamivudine / efavirenz) that started in July 2013.

## **12.5 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. However, due to resource and staffing constraints at the sites and in the labs, the program has maintained a routine monitoring schedule at 6 and 24 months after ART initiation and every 2 years thereafter.

### **12.5.1 Facility data from VL Sample Logbooks and High VL Registers**

**83,661** VL samples were drawn in the reporting period and documented in the facility sample logbook. **75,054(90%)** of these were for routine/scheduled VL monitoring; **7,458 (9%)** were extraschedular and **1,149(1%)** were replacements of lost samples. **37%** of the extra schedular samples were targeted (suspected treatment failure) and **63%** 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.

### **Results from Sample Logbooks**

**110,299** samples were drawn by 700 facilities between July and September 2018 and results were documented for **104,233 (95%)** of these. **38,840 (37%)** results were received at the facility within 4 weeks of sample collection; **44%** were received between 5-8 weeks and **7%** between 9-12 weeks. The remaining **12%** were received after 12 weeks or were still missing. **16%** of patients were notified of their result within 4 weeks of sample collection, **22%** were notified within 5-8 weeks and **13%** within 9-12 weeks. **50,866 (49%)** of 104,233 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. **3%** were electronically transmitted to the facility. **95,965 (92%)** of samples produced valid VL test results. **301 (<1%)** samples were rejected or the results were invalid and **7,967 (8%)** of samples had outstanding or missing results. **84,146 (88%)** results were suppressed below 1000 copies/ml and **11,819 (12%)** were high ( $\geq 1000$  copies/ml).

### Outcomes from High VL Registers

Between January and March 2019, **10,786** high VL results ( $\geq 1000$  copies/ml) were received at facilities and entered in the High VL Registers. **9,952 (92%)** of these were from routine monitoring samples, **620 (6%)** from targeted samples and **214 (2%)** from repeat samples. **5,940 (55%)** patients had completed intensive adherence support by March 2019 and follow-up samples were drawn for **4,560 (42%)**. Valid results were recorded for **3,242 (71%)** of follow-up samples and **40%** of these were re-suppressed ( $< 1000$  copies/ml).

A final treatment decision was available for **3,830** high VL patients. **1,694 (61%)** were maintained on the current regimen, **1,068 (39%)** were switched to second line and **12 (<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

### 12.5.2 VL Data from the Laboratory Information Management System (LMIS)

The number of VL results produced slightly increased from 98,202 in Q4 of 2018 to **99,873** Q1 in 2019. Malawi now has a total of **13** 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.

**98,208** VL results were dispatched from the labs to **643** sites between January and March 2019. 77 sites accounted for half of all results released this quarter.

**8,575 (9%)** of 98,208 samples processed were plasma and **91,298 (91%)** were DBS

Lab	Samples Processed			Turn-around Time (Days) <sup>§</sup>
	Plasma	DBS	Total	
DREAM Blantyre	1,780	2,479	4,259	22
DREAM Balaka	460	10,093	10,553	25
Kamuzu CH	3,787	9,086	12,873	21
Mzimba DH	0	4,634	4,634	15
Mzuzu CH	0	10,622	10,622	48
Nsanje DH	0	5,895	5,895	19
Partners in Hope	1,209	9,460	10,669	21
QECH	1,339	20,744	22,083	48
Thyolo DH	0	5,883	5,883	28
Zomba CH	0	5,022	5,022	24
<b>Total</b>	<b>8,575</b>	<b>91,298</b>	<b>99,873</b>	<b>28</b>
<b>§ Median days between sample collection and printing of results in lab</b>				

Kamuzu CH, Queen Elizabeth CH, DREAM Balaka and Zomba CH and Partners in Hope labs produced 61 % of all VL results. The median interval between sample collection and printing of results was 28 days at the national level, ranging from 15 days at Mzimba DH to 48 days at Queen Elizabeth CH. The most significant delays occurred between sample receipt and process run in the lab (median 12 days), while on average only 7 days elapsed between samples draw and sample receipt in the lab. The overall system capacity remains challenged by the high number of samples.

Reason	0-999		1000+		Total
<b>Routine</b>	<b>76,334</b>	90%	<b>8,787</b>	10%	<b>85,121</b>
<b>Targeted</b>	<b>9,791</b>	70%	<b>4,093</b>	29%	<b>13,884</b>
<b>Other/unk</b>	<b>494</b>	57%	<b>366</b>	42%	<b>860</b>
<b>Total</b>	<b>86,615</b>	87%	<b>12,160</b>	12%	<b>99,873</b>

**85,112(85%)** of VL results released this quarter were classified as *routine scheduled*<sup>18</sup>. This is **44%** of the estimated 193,000 ART patients passing a VL monitoring milestone this quarter **13,884 (14%)** of samples were classified as *targeted (suspected treatment failure / repeat)* and for **863 (1%)** the reason for the sample was 'other' or not specified. **90% (76,330)** of patients with a routine viral load result this quarter achieved viral suppression (i.e. <1,000 copies/ml). This mean the target for the "3<sup>rd</sup> 90" was met.

Viral suppression rates were significantly lower for routine samples among children (0-9 yrs: **53%**) and adolescents (10-19 yrs: **69%**) compared with adults in the age groups 20-29, 30-39, 40+ years who had viral suppression rates of **90%, 91%** and **93%**, respectively. 90% of

<sup>18</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.

routine VL samples were from adults 20+ years. Patient age was not recorded for 5,430 (6%) of routine samples.

The **13,884** targeted VL results this quarter represent 61% of the 8,590 routine VL results  $\geq 1000$  copies/ml from the previous quarter. 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 1,462 samples were marked as *confirmatory (follow-up)* and 992 as *targeted (treatment failure suspected)* on the lab request form. 11,430 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 increase of 1,462 patients on 2<sup>nd</sup> line ART this quarter which is equivalent to 17% of the 8,590 routine VL results  $\geq 1000$  copies/ml from the previous quarter. The facility VL registers were designed to facilitate tracking of samples and results and to improve appropriate follow-up action on high VL results.

The time on ART was entered for only **36,201 (43%)** of 85,112 routine samples registered on the LIMS and only **23,430 (28%)** 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%, 91%, 90%, 91%, 89%** and **90%** at 6, 24, 48, 72, 96 and 120 months on ART respectively. Viral suppression rates of samples drawn on schedule and that of 'catch-up' (extra-scheduler) samples were both 90% while 89% of samples with unknown timing were  $< 1000$  copies/ml.

## 12.6 TB / HIV Management

**4,018 (99%)** of 4,073 new TB patients had their HIV status ascertained this quarter and **1,874 (47%)** of these were HIV positive. **1,801 (96%)** 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 745 out of 928 facilities offering STI management according to the *2013-14 Service Provision Assessment*<sup>19</sup> in Malawi. The site level reports included here may therefore only represent 80% 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 resumption of regular

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<sup>19</sup> Ministry of Health, & ICF International. (2015). Malawi Service Provision Assessment (SPA) 2013-14. Lilongwe, Malawi and Rockville, Maryland, USA. Retrieved from <http://dhsprogram.com/pubs/pdf/SPA20/SPA20.pdf>

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 **101,943** STI cases were treated in Q1 2019. Considering the 88% site-level completeness of reporting, this number is estimated to represent a total of **115,844** STI cases treated. This is equivalent to **48%** of the estimated quarterly 241,725 STI cases in the population (extrapolation from 2015/16 MDHS)<sup>20</sup>.

Out of **101,943** documented clients treated, **39,905** (39%) were male and **62,038** (61%) were female. **9,300** (15%) of female STI clients were pregnant. **11,290** (28%) of male STI clients were circumcised. **69,538** (68%) clients were 25 years and above, **23,407** (23%) were 20-24 years and **8,998** (9%) were under 20 years old.

### 13.2 Client Type and STI History

**90,097** (88%) of clients were symptomatic and **11,846** (11%) were asymptomatic (treated as partners). Among symptomatic clients, **83,189** (92%) of were index cases and **6,908** (8%) were partners. A total of **29,393** partner notification slips were issued, equivalent to an average of 0.23 slips per index case. Considering the 29,393 partner notification slips issued, **64%** (18,754) of those notified presented to the clinic. **77,046** (76%) of clients presented with their first lifetime episode of STI, **18,314** (74%) clients reported to have had an STI more than 3 months ago and **6,583** (26%) 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 **90,651** (89%) clients and **15,944** (14%) of these were HIV positive. **2,345** (15%) of positives were identified through a new test initiated at the STI clinic, while **13,599** (85%) presented with a documented previous positive HIV test result. **12,720** (94%) of clients with a previous positive HIV test result were on ART.

The rate of HIV status ascertainment at STI clinics has improved considerably over time. This is likely due to increased numbers of dedicated testing staff available at the sites (HDAs). Actual HIV ascertainment rates may be 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 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 due to the increased risk of recurrence of HSV-2 and balanitis among HIV-infected clients.

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<sup>20</sup> According to the 2015/16 MDHS, 14.7% of women (15-49 years) and 9.6% of men (15-64 years) reported STI symptoms in the past 12 months. A total of 966,900 annual STI cases are estimated by applying these proportions to the 4.1 million men and 3.9 million women in these age groups in the 2016 population (NSO projections). Quarterly STI cases are assumed as ¼ of the estimated annual cases in the population.



## 13.4 STI Syndromes and Referrals

The most common syndrome was abnormal vaginal discharge (AVD) with **35,965** (32%) cases, followed by urethral discharge (UD, **26,104** cases), genital ulcers (GUD, 15,381 cases) and lower abdominal pain (LAP, **14,466** cases). Serologically confirmed syphilis accounted for 7% of the cases. Scrotal swelling, bubo and genital warts each accounted for 1% of cases.

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. **37,982 (44%)** of the 85,999 STI clients with unknown or new negative test result were referred for repeat HTS. **3,408 (105%)** of 3,224 new positives and previous positives not on ART were referred for ART. The low ART referral rate is due to protocol deviation among providers

## 14 Supply Chain Management of HIV Program Commodities

### 14.1 Quantification and procurement planning

The program conducted a quarterly quantification review using Q1 2019 ART Cohort analysis, stock data and WHO Safety guidance for use of Dolutegravir based regimens. This enabled the program to process orders for ARVs and test kits orders Pooled Procurement Mechanism (PPM). The program has also continued to provide quarterly supply planning updates to the Procurement Services Agents (PSA).

In preparation for transition to dolutegravir based regimen in January 2019, **5.3 million packs of tenofovir/lamivudine/dolutegravir 300/300/50mg (TLD)** and **3.9 million packs of tenofovir/lamivudine/efavirenz 300/300/600mg (TLE)** have been processed through PPM for delivery from August to December 2018. The program has so far received over 3.2 million packs (8 months of stock) of dolutegravir based fixed dose formulation (TLD). This will enable a seamless transition with 8 months of stock secured in country. To maintain adequate stocks in the pipeline and hence ensure uninterrupted supply for subsequent orders, the MOHP initiated orders for ARVs, OI, RDTs, Condoms and other related commodities through Partnership for Supply Chain Management (ARVs and RDTs), UNFPA (male condoms) and IDA Foundation (laboratory commodities and medicines for opportunistic infections) valued at **USD 106 million**. This will ensure uninterrupted availability of all critical HIV commodities required for attainment of the 90-90-90 targets and smooth transition to dolutegravir based regimens.

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

District and central level Supply Chain and Logistics Officers provided stock management support at **742 sites** during the Q1 2019 integrated ART/PMTCT site supervision. This included a physical inventory at all sites and ad-hoc mentoring in stock management at health facilities. There was a further overall improvement in the logistics management of ARVs and medicines for OI medicines however we had the following challenges noted i.e. Inadequate DHMT supervision to the health facilities affects the quality of data available for the decision making, The newly installed SIABs have issues with air conditioners functionality ranging from not



working to malfunctioning and not cooling and There is space challenge in most CHAM facilities who have not been provided with alternative storage space and these were the recommendations; Lobby support from Partners and MOH to construct or expand drugs stores to ease storage space challenges in CHAM facilities and Supply chain team to continue supportive supervision and mentorship as a way of building capacity **Table 7** shows the total medicine stocks found at the sites and the estimated consumption patterns.

### **14.3 Availability of standard first line ARVs**

**750,477 (94%)** of the 798,864 patients not transferred out from their site of last registration were on first line adult regimens and **689,148 (92%)** these were on the standard first line regimen (5A: tenofovir / lamivudine / efavirenz). The physical stock count carried out during supportive supervision in January 2019 confirmed that **739 (98.7%)** of 749 ART sites with patients on this regimen had available stocks. This translates into a stock out rate of 1.3% at ART sites with any patients on 5A. Stock-out events are invariably short and managed actively through ad-hoc stock relocations between the affected facility and hub site and the program coordinated 2907 ( 52% ARVs;14% Test kits;34% Others) individual commodity transactions through the toll-free lines.

### **14.4 Bimonthly distribution of HIV & Malaria Commodities**

Two scheduled bimonthly distribution round of HIV & Malaria commodities including laboratory items and cervical cancer equipment (Distribution Rounds 41 and 42) took place during Q1 2019.

Logistics monitoring and supply chain trail visits for distribution round 41 and 42 were conducted at **72 selected health facilities** to review performance of the third-party logistics provider and site-level stock management documentation. All health facilities visited received their supplies as per allocation and no discrepancies were noted on the delivery notes. The supply chain team conducted a physical inventory, mentorship in stock management and M&E tools documentation including use of Daily Activity Registers and completion of stock cards. Challenges and recommendations documented in section 14.2 were similar to those encountered during supply chain trail.

**Table 7**

Total stocks of HIV program commodities at all sites visited during the 2019 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 08/04/2019

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 60 / 30mg tins (60 tabs)	420	35,425	31,493	13,083	2.7	2.4
	ABC / 3TC 600 / 300mg tins (30 tabs)	394	23,710	55,627	39,390	0.6	1.4
	ATV / r 300 / 100mg tins (30 tabs)	535	55,216	152,069	18,528	3.0	8.2
	AZT / 3TC / NVP 300 / 150 / 200mg tins (60 tabs)	708	214,964	82,036	22,567	9.5	3.6
	AZT / 3TC / NVP 60 / 30 / 50mg tins (60 tabs)	685	295,311	272,544	54,550	5.4	5.0
	AZT / 3TC 300 / 150mg tins (60 tabs)	721	46,539	88,372	13,660	3.4	6.5
	AZT / 3TC 60 / 30mg tins (60 tabs)	587	22,855	48,588	2,923	7.8	16.6
	DRV 600mg tins (60 tabs)	15	465	433	20	23.3	21.7
	DTG 50mg tins (30 tabs)	343	27,843	26,897	52,144	0.5	0.5
	EFV 200mg tins (90 tabs)	230	3,287	95	456	7.2	0.2
	EFV 600mg tins (30 tabs)	360	20,500	13,481	641	32.0	21.0
	ETV 100mg tins (120 tabs)	9	282	107	0	0.0	0.0
	LPV / r 100 / 25mg tins (120 tabs)	68	2,469		11,934	0.2	
	LPV / r 100 / 25mg tins (60 tabs)	309	22,665	1,231	11,934	1.9	0.1
	LPV / r 200 / 50mg tins (120 tabs)	324	20,599	7,344	1,694	12.2	4.3
	LPV / r 40 / 10mg tins (120 pellets)	22	5,776	11,545	0	0.0	0.0
	NVP 200mg tins (60 tabs)	673	62,710	13,910	8,056	7.8	1.7
	NVP 50mg tins (60 tabs)	230	6,882	567	1,598	4.3	0.4
	r 100mg tins (60 tabs)	17	367	565	0	0.0	0.0
	RAL 400mg tins (60 tabs)	6	215	126	0	0.0	0.0
TDF / 3TC / DTG 300 / 300 / 50mg tins (30 tabs)	749	1,970,192	2,051,424	238,950	8.2	8.6	
TDF / 3TC / EFV 300 / 300 / 600mg tins (30 tabs)	745	1,371,942	1,396,774	427,130	3.2	3.3	
TDF / 3TC 300 / 300mg tins (30 tabs)	735	112,412	43,560	15,398	7.3	2.8	
<b>bottles</b>	Fluconazole (Diflucan) 50mg / 5ml bottles (50 ml)	1	118		50	2.4	
	NVP 100mg/ml bottles (100 ml)	597	31,452		6,996	4.5	
<b>vials</b>	Benzathine Penicillin 144g vials (50 each)	594	55,363	161,300	1,882	29.4	85.7
	Bleomycine 15,000IU vials (1 each)	26	2,854	6,120	0	0.0	0.0
	Ceftriaxone 1g vials (10 each)	261	108,133		151,469	0.7	
	Depo-Provera 150mg/1ml vials (25 each)	505	421,455		72,617	5.8	
	Fluconazole (Diflucan) 2mg / 1 ml vials (100 ml)	6	3,375	899	0	0.0	0.0
	Gentamicin 80mg / 2ml vials (50 each)	665	1,579,367		66,049	23.9	
	Streptomycin 1 g vials (50 each)	42	16,108				
	Vincristine 1mg / 1ml vials (1 each)	35	6,789	2,109	0	0.0	0.0
<b>tabs</b>	Aciclovir 200mg blist packs (500 tabs)	667	2,347,375		913,052	2.6	
	Azithromycin 500mg blist packs (3 tabs)	422	21,491	16,641	19,217	1.1	0.9
	Ciprofloxacin 500mg blist packs (100 tabs)	550	810,561	2,790,600	0	0.0	0.0
	Clotrimazole 500mg boxes (1 each)	583	52,497	52,352	0	0.0	0.0
	Codeine 30mg tins (100 tabs)	12	243,812		0	0.0	0.0
	Cotrimoxazole 100 / 20mg blist packs (1000 tabs)	660	85,265,402	46,959,000	15,139,186	5.6	3.1
	Cotrimoxazole 400 / 80mg tins (1000 tabs)	698	70,405,630	73,204,000	23,944,633	2.9	3.1
	Cotrimoxazole 960mg blist packs (1000 tabs)	738	98,552,846	266,049,000	23,721,537	4.2	11.2
	Doxycycline 100mg tins (1000 tabs)	677	8,059,190		379,017	21.3	
	E thambutol (E) 100 mg blist packs (100 tabs)	150	170,223				
	E thambutol (E) 400 mg blist packs (672 tabs)	17	18,709				
	Erythromycin 250mg tins (100 tabs)	150	269,789	5,000	121,069	2.2	0.0
	Erythromycin 250mg tins (1000 tabs)	353	1,550,428	635,000	0	0.0	0.0
	Fluconazole (Diflucan) 200mg tins (28 tabs)	168	1,009,828	454,944	0	0.0	0.0
	Ibuprofen 200mg tins (100 tabs)	296	3,499,950		1,223,968	2.9	
	Isoniazid (H) 100mg blist packs (100 tabs)	325	3,847,354		0	0.0	0.0

Inventory unit	Item	Sites with any Stock	Total Physical Stock		Consumption/ Month	Months of Stock *	
			At Sites	In Warehouse		At Sites	Wareh.
	Isoniazid (H) 300mg blist packs (672 tabs)	245	48,782,185	26,528,544			
	Isoniazid (H) 300mg tins (1000 tabs)	8	1,941,644		0	0.0	0.0
	Metronidazole 200mg tins (1000 tabs)	678	12,166,274	11,553,000	0	0.0	0.0
	Morphine 10mg blist packs (60 tabs)	48	387,643		311,912	1.2	
	Pyridoxine 25mg tins (100 tabs)	365	32,563,288	6,453,800			
	RH 150 / 75 mg blist packs (672 tabs)	258	1,506,779				
	RH 75/50mg blist packs (84 tabs)	144	464,998				
	RHE 150 / 75/ 275 mg blist packs (1000 tabs)	5	5,023				
	RHZ 75/50/150mg blist packs (84 tabs)	60	77,416				
	RHZE 150/75/400/275mg blist packs (672 tabs)	266	852,074				
<b>sheets</b>	ART pat. card adult (yellow) Ver6 bundles (50 she	598	442,214				
	ART pat. card paed. (blue) Ver6 bundles (50 shee	365	40,842	12,900	45,178	0.9	0.3
	Exposed child card (pink) Ver2 bundles (50 sheet	473	44,785	159,300	4,815	9.3	33.1
	Family HTC Referral Slip bundles (100 sheets)	405	226,150				
	Polythene sleeve bundles (100 sheets)	107	11,530		18,773	0.6	
	STI Partner Referral Slip bundles (100 sheets)	138	20,816	1,868,500			
<b>tests</b>	DBS kit (filter paper, lancet, etc.) 70ul boxes (50 t	694	273,818	300,350	86,464	3.2	3.5
	Determine HIV1/2 boxes (100 each)	716	1,865,875	288,800	392,674	4.8	0.7
	OraQuick HIV Self-test bundles (25 each)	132	111,316	151,750			
	SD Biline Syphilis boxes (30 each)	589	210,892	597,120	34,057	6.2	17.5
	Uni-Gold HIV1/2 boxes (20 each)	671	157,198	58,020	30,856	5.1	1.9
<b>pieces</b>	Condoms female boxes (1000 each)	547	359,241				
	Condoms male boxes (144 each)	668	41,473,687	27,879,408			

\* '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

### 15.1 ART/PMTCT

A total of **444** health workers were trained in the 2018 Clinical HIV Guidelines during Q1 2019. **42** of these were clinicians, **213** nurses, **52** medical assistants, **10** medical doctors, **98** community midwife assistants and **1** lab technician. The cadre was not recorded for **3** participants.

## 16 Participants in the Q1 2019 Supervision (8-19 April 2019)

Richard Abudul (CO, MOH)  
 Blessings Banda (MA, MOH)  
 Knox Banda (TB Zonal Supervisor, MOH)  
 Leonard Banda (,MoH)  
 Lucy Banda (,MoH)  
 Wells Banda (CO, MOH)  
 Semu Bangelo (,MoH)  
 Thomas Biseck (,MoH)  
 Annie Biza (Nurse, MDF)  
 Menard Bvumbwe (, NGO)  
 Regina Bwanali (,MoH)  
 Faith Chabwera (, DIGNITAS)  
 Herbert Chafulumira (,MoH)  
 Duncan Chakana (,MoH)  
 Lincy Chalunda (CO, MOH)  
 Rachel Champiti (,MoH)  
 Rachel Champiti (,MoH)  
 Raymond Changamire (, Chemonics)  
 Bernadette Chibwana (,MoH)  
 Chikaiko Chibwana (CO, MOH)  
 Maggie Chigona (,MoH)  
 Margaret Chigona (CO, Blantyre DHO)  
 Grace Chikhwaya (,MoH)  
 Kondwani Chikoti (CO, MOH)  
 Lusayo Chikuta (, Nkhatabay)  
 Verydear Chilapondwa (,MoH)  
 Chimwemwe Chimaliro (,MoH)  
 Spain Chimaliro (,MoH)  
 Tiwonge Chimbandule (,MoH)  
 Peter Chimphero (CO, MOH)  
 Matthews Chimtenga (, Lighthouse)  
 Yunus Chiosa (, NTP)  
 Diana Chipande (,MoH)  
 Grace Chipanga (Nurse, Private)  
 Clement Chiphota (CO, MoH)  
 Elvin Chipoya (,MoH)  
 Esnat Chirambo (,MoH)  
 Samson Chitsulo (, other)  
 Brown Chiwandira (MA, MOH)  
 Madalitso Chosalawa (,MoH)  
 Stuart Chuka (CO, MBCA)  
 Peter Donda (CO, Dedza DH)  
 Bonaventure Dzanjalimodzi (,MoH)  
 Michael Eliya (PMTCT Program Officer, MOH)  
 Lackson Gawani (,MoH)  
 Symon Goliath (, Dignitas)  
 Patrick Gomani (, TB Challenge)  
 Suave Gombwa (, CHAM)  
 Andrew Gompho (Clinician, MOH)  
 Grant Gondwe (, NTP)  
 Paul Gondwe (,MoH)  
 Sidder Hambisa (ENM, MOH)  
 Mirriam Hanjahanja (, cham)  
 Rhoda Jamu (, CHAM)  
 Mataya Jeke (, Zomba Central)  
 Haswell Jere (CO, MOH)  
 John Kabichi (CO, MOH)  
 Rabson Kachala (,MoH)  
 Francis Kachali (,MoH)  
 Lilian Kachali (Nurse, MOH)  
 Arlene Kachapira (,MoH)  
 Dennis Kacheche (, I-TECH)  
 Gabriel Layout Kachere (clinician, MOH)  
 Tisunge Kachere (, I-TECH)  
 Innocent Kafakalawa (, EGPAF)  
 Vera Kajawa (Nurse, MOH)  
 Bannet Kalebe (Logistics, MOH)  
 Enipher Kalengamaliro (,MoH)  
 Rose Kalinde (Nurse, Lighthouse)  
 Agnes Kalitsiro (Nurse, Mlambe Mission Hospital)  
 Jonathan Kalua (,MoH)  
 Ethel Kaluluma (Nurse, MOH)  
 Richard Kamalizeni (Nurse, MOH)  
 Blessings Kamanga (Clerk, MOH)  
 Maltilda Kamanga (, MAFCO)  
 Alex Kambanga (,MoH)  
 Chipulumutso Kambanje (, PIH)  
 Mary Kamiza (TB Zonal Supervisor, NTP)  
 Emmanuel Kampaliro (,MoH)  
 Gift Kamphika (MA, MOH)  
 Thokozani Kamvamgomo (,MoH)  
 Mercy Kamweka (,MoH)  
 Lucy Kamwela (MA, MOH)  
 Cornelias Kang'ombe (, NTP)  
 Cornelius Kang'ombe (, NTP)  
 Annie Kanyemba (Nurse, MOH)  
 Henry Kanyerere (TB/HIV Program Officer, MOH)  
 Martin Kapito (,MoH)  
 Elsie Kasambwe (, I-TECH)  
 Fredrick Kasanga (Nurse, MOH)  
 Matias Kaselema (Nurse, MOH)  
 Benard Kasinja (CO, I-TECH)  
 Catherine Kassam (,MoH)  
 Margaret Katumbi (Nurse, MOH)  
 Rodrick Kaulere (CO, CHAM (Sister Tereza))  
 Absalom Kaunda (CO, MOH, Mzimba DHO)  
 William Kaunda (, Salima)  
 Kondwani Kautsa (,MoH)  
 Jean Kayamba (Nurse, MOH)  
 Daniel Kazingachire (,MoH)  
 Andy Kisyombe (, other)  
 Sydney Kubwalo (,MoH)  
 Aubrey Kudzala (,MoH)  
 Tolani Kumwenda (,MoH)  
 Charles Kwenje (,MoH)  
 George Lipande (CO, MOH)  
 Jesse Lobeni (Nurse, MOH)  
 Wezzie Luhanga (,MoH)  
 Molly Lungu (Nurse, MOH)  
 Malumbo Luwinda (Logistics, Kamuzu Central)  
 Willard Lwasha (, Chiradzulu DHO)  
 Rose Mabviko (,MoH)  
 Mphatso Machika (co, MOH)  
 Belito Madetsa (CO, MOH)  
 Felix Magwira (Clinical Coordinator, indep NGO)  
 Chikayiko Majamanda (Nurse, MOH)  
 Mercy Makaika (Nurse, MOH)  
 Fanuel Makalaundi (, Mzuzu Central)  
 Linda Makata (,MoH)  
 Ellen Makawa (,MoH)  
 Innocent Makawa (,MoH)  
 Geoffrey Makhallira (, NTP)  
 Chifundo Makuluni (Nurse, MOH)  
 Grey Malata (,MoH)  
 Beatrice Malonje (Nurse, MOH)  
 Cecilia Manyawa (Nurse, MOH)  
 Fatsireni Mapulanga (,MoH)  
 Davie Maseko (CO, SOS)  
 Angela Masumba (,MoH)  
 Jeke Mataya (,MoH)  
 Steven Matewera (, Chichiri Prison Clinic)  
 Hannock Matupi (ARV clinician, MOH, Rumphu DH)  
 Martin Maulidi (CO, I-TECH)  
 Rose Maviko (Nurse, Limbe HC)  
 Felix Mbalale (CO, MOH)  
 Nyuma Mbale (,MoH)  
 Loyd Mbaza (Nurse, MOH)  
 Kingsley Mbewa (CO, MOH)  
 Stony Mbiriyawanda (,MoH)  
 Alice Mdolo (,MoH)

Topcy Mdolo (.MoH)  
 Dalitso Midiani (PMTCT Officer, MOH)  
 Portifer Mission (.MoH)  
 Stanford Miyango (Pharmacist, MOH)  
 Towera Mjimapemba (.MoH)  
 Chimwemwe Francis Mkandawire (IT Fellow, I-TECH)  
 Taonga Mkandawire (.MoH)  
 Tawonga Mkandawire (.MoH)  
 Merium Mkangala (.MoH)  
 Hermes Mlambe (, Chemonics)  
 Lameck Mlauzi (, NTP( MOH))  
 Happy Mpawa (.MoH)  
 Henry Mphande (.MoH)  
 Joseph Mphasa (.MoH)  
 Noel Mphasa (TB Zonal Supervisor, NTP)  
 Cecilia Mphika (.MoH)  
 Henry Mphonde (CO, Lighthouse)  
 Tryness Mponda (NMT, MOH)  
 Damison Msiska (CO, Dwangwa)  
 Edwin Msiska (.MoH)  
 Tiya Msiyaboza (, milepa)  
 Tiyamike Msyamboza (, other)  
 Bahat Mtambo (, Mzuzu Central)  
 Erick Mtemang'ombe (CO, CHAM)  
 Temweka Mtenje (.MoH)  
 Clement Mtika (CO, MOH, Mzuzu CH)  
 William Mtonga (CO, CHAM)  
 Andraida Mtoseni (Nurse, MOH)  
 Dave Muhasuwa (.MoH)  
 Yamikani Mulore (.MoH)  
 Maxon Musama (CO, Lighthouse)  
 Tereza Mvula (.MoH)  
 Thomas Mwale (.MoH)  
 Henry Mwamatembe (.MoH)  
 Patrick Mwamlima (.MoH)  
 Nancy Mwapasa (.MoH)  
 Golden Mwathunga (MA, Press)  
 Ettah Mwaungulu (, Private)  
 Anne Mwenye (, Private)  
 Timothy Mwenyedini (MA, MOH)  
 Tuwepo Mwitha (.MoH)  
 Riff Mzava (Nurse, MOH)  
 Alfred Mzumara (, Dignitas)  
 Peter Mzumara (ART clinician, MOH)  
 Austins Namondwe (CO, CHAM)  
 Pepsy Nangwale (Nurse, MOH)  
 Leonard Ndhlovu (Nurse, MOH)  
 Overton Ndhlovu (.MoH)  
 Offrey Nduwila (.MoH)  
 Mwai Ng'ambi (.MoH)  
 Stanley Ngoma (CO, MOH)  
 Hannock Ngwena (, NGO)  
 Charles Ngwira (.MoH)  
 Eunice Ngwira (.MoH)  
 Beatrice Nindi (.MoH)  
 Trevor Chifundo Nindi (, Balaka DHO)  
 Joseph Njala (Program Officer, MOH, Department of HIV and AIDS)  
 Merium Nkangala (.MoH)  
 Grace Juma Nkhata (Nurse, MOH)  
 Rellia Nkhata (.MoH)  
 Relia Nkhata Mandindi (Logistics, HIV Dept)  
 Angela Nkhoma (Nurse, MOH)  
 Joe Nkhonjera (.MoH)  
 Vitu Nkhunga (.MoH)  
 Sam Nowa (Pharmacist, MOH)  
 George Nsitu (.MoH)  
 Evaristo Nthete (.MoH)  
 Judith Ntopa (Nurse, Cobbe Barracks)  
 Ishmael Nyasulu (, Other (W.H.O))  
 Jotham Nyasulu (.MoH)  
 Paul Nyasulu (CO, I-TECH)  
 Misonzi Nyatuka (Nurse, MOH)  
 Steven Nyika (.MoH)  
 Feliya Nyirenda (, Machinga)  
 Janet Nyirenda (.MoH)  
 Mike Nyirenda (CO, Lighthouse)  
 Abdul Richard Onani (.MoH)  
 Chrissy Padoko (.MoH)  
 Laura Pangani (.MoH)  
 Paul Peterson (.MoH)  
 Bright Phiri (, QECH)  
 Tifera Phiri (.MoH)  
 Stanley Phombo (Nurse, MOH)  
 Beaton Robert (.MoH)  
 Enock Sabola (Nurse, MOH)  
 Alice Sajeni (.MoH)  
 Dorica Sambo (Nurse, MOH)  
 Bangelo Semu (.MoH)  
 Kondwani Shaba (.MoH)  
 Gabriel Simwanza (MA, MOH)  
 Aleka Simwela (.MoH)  
 Juliana Soko (ARV nurse, MOH, Livingstonia MH)  
 Joel Sosola (.MoH)  
 Issa Sulemani (.MoH)  
 Mark Suzumire (CO, MOH)  
 Moses Tambala (, NGO)  
 Andrea Tembo (Nurse, Dignitas)  
 Harrison Tembo (CO, MOH)  
 Vuso Tembo (.MoH)  
 Edith Thaulo (Nurse, MOH)  
 Mirriam Thindwa (Clinician, Limbe H/C)  
 Matilda Thomas (.MoH)  
 Harry Tsapa (CO, MOH)  
 Linda Vito (.MoH)  
 Gladson Waluza (, Machinga DHO)  
 Gladson Waluza (, Dowa DHO)  
 Mwiza Wankhama (, CHAM)  
 Lloyd Wella (CO, MOH)  
 Shaibu Witman (.MoH)  
 Lightwell Zomba (.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.

10<sup>th</sup> July 2019

## **17 Appendix (Full National HIV Program Data)**

# HTC site report

Malawi (National)

2019 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	1,085,510	100%
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#### Sex

Males tested	364,848	34%
Females tested	720,662	66%
Females non-pregnant	512,162	71%
Females pregnant	208,500	29%

#### Age

Children 0-14 yrs	121,828	11%
Children below 12 mths (Age group A)	4,360	4%
Children 12 mths - 14 yrs (Age group B)	117,468	96%
Adults 15+ years	963,682	89%
Young adults 15-24 years (Age group C)	415,998	43%
Older adults 25+ yrs (Age group D)	547,684	57%

#### HTC access type

PITC	812,482	75%
Family Referral Slip (FRS)	13,997	1%
Other (VCT, etc.) HTC access	259,031	24%

#### HTC first time / repeat

Never tested before	237,910	22%
Previously accessed HTC	847,600	78%
Last negative	811,285	96%
Last positive	35,115	4%
Last exposed infant	451	0%
Last inconclusive	749	0%

#### Counseling session type / Partner present

Counseled with partner / partner present	199,772	18%
Counseled alone / Partner not present	885,738	82%

#### Outcome summary (HIV test)

Single test negative	1,016,891	94%
Single test positive	55	0%
Test 1&2 negative	820	0%
Test 1&2 positive	65,471	6%
Test 1&2 discordant	2,273	0%



## HTC site report

Malawi (National)

2019 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	1,050,677	97%
New negative	1,017,313	97%
New positive	31,071	3%
New positive (non-sex dissag)	0	0%
New positive (dissag by sex)	31,071	100%
New positive male	13,078	42%
New positive female	17,993	58%
New inconclusive	2,126	0%
New exposed infants	167	0%
Confirmatory results (previous positive clients)	34,833	3%
Confirmatory positive	34,661	100%
Confirmatory positive (non-sex dissag)	0	0%
Confirmatory positive (dissag by sex)	34,661	100%
Confirmatory positive male	14,466	42%
Confirmatory positive female	20,195	58%
Confirmatory inconclusive	172	0%

#### Partner / Family HTC referral slips

Sum of slips given	60,441	100%
Total clients presenting with referral slip	13,997	23%
Total failed referrals (slips not returned)	46,444	77%

### Clients tested in the community

#### HTC client details

\*

#### Total HTC clients served

Total HIV tested	28,226	100%
------------------	--------	------

#### Sex

Males tested	10,741	38%
Females tested	17,485	62%
Females non-pregnant	15,144	87%
Females pregnant	2,341	13%

#### Age

Children 0-14 yrs	4,712	17%
Children below 12 mths (Age group A)	39	1%
Children 12 mths - 14 yrs (Age group B)	4,673	99%
Adults 15+ years	23,514	83%
Young adults 15-24 years (Age group C)	11,854	50%
Older adults 25+ yrs (Age group D)	11,660	50%

#### HTC access type

PITC	8,708	31%
Family Referral Slip (FRS)	1,207	4%
Other (VCT, etc.) HTC access	18,311	65%

## HTC site report

Malawi (National)

2019 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### HTC client details

\*

#### HTC first time / repeat

Never tested before	8,864	31%
Previously accessed HTC	19,362	69%
Last negative	18,699	97%
Last positive	651	3%
Last exposed infant	4	0%
Last inconclusive	8	0%

#### Counseling session type / Partner present

Counseled with partner / partner present	1,536	5%
Counseled alone / Partner not present	26,690	95%

#### Outcome summary (HIV test)

Single test negative	26,415	94%
Single test positive	1	0%
Test 1&2 negative	8	0%
Test 1&2 positive	1,760	6%
Test 1&2 discordant	42	0%

#### Final result given to client

Results among clients never tested / last negative	27,554	98%
New negative	26,425	96%
New positive	1,097	4%
New positive (dissag by sex)	1,097	100%
New positive male	447	41%
New positive female	650	59%
New inconclusive	24	0%
New exposed infants	8	0%
Confirmatory results (previous positive clients)	672	2%
Confirmatory positive	663	99%
Confirmatory positive (dissag by sex)	663	100%
Confirmatory positive male	263	40%
Confirmatory positive female	400	60%
Confirmatory inconclusive	9	1%

#### Partner / Family HTC referral slips

Sum of slips given	807	100%
Total clients presenting with referral slip	1,207	150%
Total failed referrals (slips not returned)	-400	-50%

### Clients at stand-alone HTC sites

#### HTC client details

\*

##### Total HTC clients served

Total HIV tested	3,851	100%
------------------	-------	------

##### Sex

Males tested	1,956	51%
Females tested	1,895	49%
Females non-pregnant	1,320	70%
Females pregnant	575	30%

# HTC site report

Malawi (National)

2019 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

## HTC client details

\*

### Age

Children 0-14 yrs	217	6%
Children below 12 mths (Age group A)	3	1%
Children 12 mths - 14 yrs (Age group B)	214	99%
Adults 15+ years	3,634	94%
Young adults 15-24 years (Age group C)	1,580	43%
Older adults 25+ yrs (Age group D)	2,054	57%

### HTC access type

PITC	1,836	48%
Family Referral Slip (FRS)	32	1%
Other (VCT, etc.) HTC access	1,983	51%

### HTC first time / repeat

Never tested before	776	20%
Previously accessed HTC	3,075	80%
Last negative	2,946	96%
Last positive	128	4%
Last exposed infant	1	0%
Last inconclusive	0	0%

### Counseling session type / Partner present

Counseled with partner / partner present	592	15%
Counseled alone / Partner not present	3,259	85%

### Outcome summary (HIV test)

Single test negative	3,540	92%
Single test positive	0	0%
Test 1&2 negative	3	0%
Test 1&2 positive	304	8%
Test 1&2 discordant	4	0%

### Final result given to client

Results among clients never tested / last negative	3,691	96%
New negative	3,542	96%
New positive	145	4%
New positive (dissag by sex)	145	100%
New positive male	49	34%
New positive female	96	66%
New inconclusive	4	0%
New exposed infants	0	0%
Confirmatory results (previous positive clients)	160	4%
Confirmatory positive	159	99%
Confirmatory positive (dissag by sex)	159	100%
Confirmatory positive male	56	35%
Confirmatory positive female	103	65%
Confirmatory inconclusive	1	1%

### Partner / Family HTC referral slips

Sum of slips given	178	100%
Total clients presenting with referral slip	32	18%
Total failed referrals (slips not returned)	146	82%

## Blood safety

Malawi (National)

2019 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	1,480	21%
Tested for HIV	5,734	79%
HIV negative	5,482	96%
HIV positive	252	4%

#### Hepatitis B screening

HepB testing not done	1,513	21%
Tested for Hepatitis B	5,701	79%
HepB Negative	5,447	96%
HepB Positive	254	4%

#### Hepatitis C screening

HepC testing not done	3,513	49%
Tested for Hepatitis C	3,701	51%
HepC Negative	3,438	93%
HepC Positive	263	7%

#### Syphilis screening

Syphilis testing not done	1,456	20%
Tested for Syphilis	5,758	80%
Syphilis Negative	5,488	95%
Syphilis Positive	270	5%

#### Malaria screening

Malaria testing not done	2,235	31%
Tested for malaria	4,979	69%
Malaria Negative	4,514	91%
Malaria Positive	465	9%

#### Summary screening outcome

Not donated	2,792	39%
Donated	4,422	61%
Screened for at least HIV, HepB and syphilis	3,494	79%
Screened for HIV, HepB, HepC, Syphilis, Malaria	2,387	68%
Screened for HIV, HepB, Syphilis	1,107	32%
Screened for HIV, HepB	17	0%
Screened for HIV only	137	3%
Screened with any other combination of tests	774	18%

### Cross-matching report

\*

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

Total blood group typing done	33,127	100%
-------------------------------	--------	------

#### Blood units cross-matched (by source)

Total blood units cross-matched	20,066	100%
Total units from MBTS (estimated)	15,644	78%
Total units from replacement donors	4,422	22%

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

Units cross-matched for maternity	3,286	16%
Units cross-matched for paediatrics	6,199	31%
Units cross-matched for other ward	10,581	53%

## Blood safety

Malawi (National)

2019 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### Cross-matching report

\*

#### Transfusion reactions

Units transfused without adverse events	20,041	100%
Units with suspected transfusion reactions	13	0%
Units with confirmed transfusion reactions	12	0%

# HIV exposed child follow-up

Malawi (National)

2019 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	11,005	100%
---------------------------	--------	------

#### CPT status

On CPT	9,626	87%
Not on CPT	1,379	13%

#### HIV status

Current HIV infection status unknown	2,612	24%
HIV infection not confirmed, not ART eligible	2,597	99%
HIV infection not confirmed, ART eligible (PSHD)	15	1%
Current HIV infection status known	8,393	76%
Confirmed not infected	8,273	99%
Confirmed infected (ART eligible)	120	1%

#### ART eligibility summary

Not eligible for ART	10,870	99%
ART eligible	135	1%
ART not initiated	43	32%
Initiated ART	92	68%

#### Primary follow-up outcome

Discharged uninfected	10	0%
Continue follow-up	9,603	94%
Started ART	92	1%
Defaulted	492	5%
Died	48	0%

#### Transfers between sites

Total not transferred out	10,245	93%
Transferred out	760	7%

## Age 12 months

### Age cohort outcomes

\*

#### Total children in birth cohort

Total children registered	12,466	100%
---------------------------	--------	------

#### CPT status

On CPT	9,585	77%
Not on CPT	2,881	23%

#### HIV status

Current HIV infection status unknown	3,115	25%
HIV infection not confirmed, not ART eligible	3,099	99%
HIV infection not confirmed, ART eligible (PSHD)	16	1%
Current HIV infection status known	9,351	75%
Confirmed not infected	9,146	98%
Confirmed infected (ART eligible)	205	2%

# HIV exposed child follow-up

Malawi (National)

2019 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

## Age cohort outcomes

\*

### ART eligibility summary

Not eligible for ART	12,245	98%
ART eligible	221	2%
ART not initiated	30	14%
Initiated ART	191	86%

### Primary follow-up outcome

Discharged uninfected	132	1%
Continue follow-up	9,531	84%
Started ART	191	2%
Defaulted	1,449	13%
Died	94	1%

### Transfers between sites

Total not transferred out	11,397	91%
Transferred out	1,069	9%

## Age 24 months

### Age cohort outcomes

\*

#### Total children in birth cohort

Total children registered	11,147	100%
---------------------------	--------	------

#### CPT status

On CPT	540	5%
Not on CPT	10,607	95%

#### HIV status

Current HIV infection status unknown	3,302	30%
HIV infection not confirmed, not ART eligible	3,298	100%
HIV infection not confirmed, ART eligible (PSHD)	4	0%
Current HIV infection status known	7,845	70%
Confirmed not infected	7,567	96%
Confirmed infected (ART eligible)	278	4%

### ART eligibility summary

Not eligible for ART	10,865	97%
ART eligible	282	3%
ART not initiated	36	13%
Initiated ART	246	87%

### Primary follow-up outcome

Discharged uninfected	7,345	72%
Continue follow-up	267	3%
Started ART	246	2%
Defaulted	2,186	21%
Died	133	1%

### Transfers between sites

Total not transferred out	10,177	91%
Transferred out	970	9%



## Antenatal Care

Malawi (National)

2019 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	164,380	100%
----------------------	---------	------

### ANC cohort analysis

\*

#### HIV status ascertainment

HIV status not ascertained	4,955	3%
HIV status ascertained	159,425	97%
Valid previous test result	10,200	6%
Previous negative	3,176	31%
Previous positive	7,024	69%
New test at ANC	149,225	94%
New negative	146,211	98%
New positive	3,014	2%

#### HIV status summary

Total women HIV negative	149,387	94%
Total women HIV positive	10,038	6%

#### PMTCT regimen mother

No ARVs	193	2%
Any ARVs	9,845	98%
ART (by time of initiation)	9,845	100%
Already on ART when starting ANC	6,951	71%
Started ART at 0-27 weeks of pregnancy	2,576	26%
Started ART at 28+ weeks of preg.	318	3%

# Maternity

Malawi (National)

2019 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)	136,653	100%
Not referred to other site (total women)	128,795	94%
Referred out before delivery (multiple admissions)	7,858	6%

### HIV status ascertainment

HIV status not ascertained	6,799	5%
HIV status ascertained	129,526	95%
Valid previous test result	42,897	33%
Previous negative	33,177	77%
Previous positive	9,720	23%
New test at maternity	86,629	67%
New negative	86,331	100%
New positive	298	0%

### HIV status summary

Total women HIV negative	119,508	92%
Total women HIV positive	10,018	8%

### ARVs during pregnancy (among HIV pos)

No ARV in pregnancy	138	1%
Any ARVs	9,880	99%
ART (by time of initiation)	9,880	100%
ART initiated before pregnancy	9,109	92%
ART initiated in 1st / 2nd trimester	386	4%
ART initiated in 3rd trimester	172	2%
ART initiated during labour	213	2%

## Infant details

\*

### Single babies / multiple deliveries

Total babies delivered	131,915	100%
Single babies	127,407	97%
Twin / multiple babies	4,508	3%

### Infant survival

Total live births	129,830	98%
Discharged alive	128,856	99%
Neonatal deaths	974	1%
Stillbirths	2,085	2%
Stillbirth, fresh	1,078	52%
Stillbirth, macerated	1,007	48%

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

Infants with unknown HIV exposure status	5,091	4%
Infants with known HIV exposure status	123,765	96%
Not HIV exposed	114,388	92%
HIV exposed	9,377	8%
Received no ARVs	590	6%
Received ARVs	8,787	94%
Nevirapine	8,787	100%

# ART cohort analysis

Malawi (National)

2019 Q1 (Quarter)

## Registration details

\*

### ART clinic registrations

Total ART clinic registrations	41,868	100%
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### Registration type

ART initiations, first time (total patients)	31,570	75%
ART initiations, first time (non sex-disagg.)	10,055	32%
ART initiations, first time (by sex)	21,515	68%
ART initiations, first time, males	8,767	41%
ART initiations, first time, females	12,748	59%
ART initiations, first time, females non-pregnant	9,320	73%
ART initiations, first time, females pregnant	3,428	27%
ART re-initiations	505	1%
ART transfers in	10,218	24%

### Sex

Males	16,691	40%
Females	25,177	60%
Non-pregnant	20,456	81%
Pregnant	4,721	19%

### Age at ART initiation

Adults 15+ yrs	39,260	94%
Children 0-14 yrs	2,608	6%
Children 2-14 yrs	1,986	76%
Children below 24 mths	622	24%

### Reason for starting ART

Presumed severe HIV Disease	63	0%
Confirmed HIV infection	41,805	100%
WHO stage 1 or 2	36,213	87%
CD4 below threshold	1,602	4%
CD4 unknown or >threshold	34,611	96%
PCR infants	127	0%
Children 12-59 mths	721	2%
Pregnant women	4,940	14%
Breastfeeding mothers	1,480	4%
Asymptomatic / mild	27,343	79%
WHO stage 3	4,075	10%
WHO stage 4	1,102	3%
Unknown / reason outside of guidelines	415	1%

### TB at ART initiation

Never TB / TB > 24 months ago	41,331	99%
TB within the last 24 months	226	1%
Current episode of TB	311	1%

### Kaposi's sarcoma at ART initiation

No KS	41,738	100%
Patients with KS	130	0%

# ART cohort analysis

Malawi (National)

2019 Q1 (Cumulative)

## Registration details

\*

### ART clinic registrations

Total ART clinic registrations	1,638,463	100%
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### Registration type

ART initiations, first time (total patients)	1,285,516	78%
ART initiations, first time (non sex-disagg.)	1,285,443	100%
ART initiations, first time (by sex)	73	0%
ART initiations, first time, males	36	49%
ART initiations, first time, females	37	51%
ART initiations, first time, females non-pregnant	33	89%
ART initiations, first time, females pregnant	4	11%
ART re-initiations	29,605	2%
ART transfers in	323,402	20%

### Sex

Males	606,758	37%
Females	1,031,705	63%
Non-pregnant	828,306	80%
Pregnant	203,399	20%

### Age at ART initiation

Adults 15+ yrs	1,502,916	92%
Children 0-14 yrs	135,547	8%
Children 2-14 yrs	104,548	77%
Children below 24 mths	30,999	23%

### Reason for starting ART

Presumed severe HIV Disease	4,443	0%
Confirmed HIV infection	1,634,020	100%
WHO stage 1 or 2	932,642	57%
CD4 below threshold	363,005	39%
CD4 unknown or >threshold	569,637	61%
PCR infants	4,309	1%
Children 12-59 mths	18,728	3%
Pregnant women	189,568	33%
Breastfeeding mothers	61,086	11%
Asymptomatic / mild	295,946	52%
WHO stage 3	568,559	35%
WHO stage 4	121,790	7%
Unknown / reason outside of guidelines	11,029	1%

### TB at ART initiation

Never TB / TB > 24 months ago	1,566,293	96%
TB within the last 24 months	36,925	2%
Current episode of TB	35,245	2%

### Kaposi's sarcoma at ART initiation

No KS	1,618,726	99%
Patients with KS	19,737	1%

# ART cohort analysis

Malawi (National)

2019 Q1 (Cumulative)

## ART outcomes

\*

### Primary follow-up outcomes

Total alive on ART	821,493	63%
Alive on ART at site of last registration	806,855	98%
ART patients in transit between sites	14,638	2%
Defaulted	365,725	28%
Stopped ART	7,042	1%
Total died	114,212	9%
Died month 1	23,648	21%
Died month 2	14,174	12%
Died month 3	9,024	8%
Died month 4+	67,366	59%

### Transfers between sites

Total not transferred out	1,300,423	79%
Transferred out	338,040	21%

### ART regimens

First line regimens	767,750	95%
Adult formulation	744,835	97%
Regimen 0A	1,004	0%
Regimen 2A	22,567	3%
Regimen 4A	641	0%
Regimen 5A	427,130	57%
Regimen 6A	8,056	1%
Regimen 13A	284,816	38%
Regimen 14A	268	0%
Regimen 15A	353	0%
Paed. formulation	22,915	3%
Regimen 0P	639	3%
Regimen 2P	21,820	95%
Regimen 4P	456	2%
Second line regimens	24,220	3%
Adult formulation	20,242	84%
Regimen 7A	6,891	34%
Regimen 8A	11,637	57%
Regimen 9A	1,328	7%
Regimen 10A	158	1%
Regimen 11A	208	1%
Regimen 12A	20	0%
Paed. Formulation	3,978	16%
Regimen 9P	3,722	94%
Regimen 11P	256	6%
Other regimen (adult / paed)	14,885	2%

### Adherence

Adherence unknown (not recorded)	65,566	8%
Adherence recorded	741,222	92%
0-3 doses missed	577,452	78%
4+ doses missed	163,770	22%

# ART cohort analysis

Malawi (National)

2019 Q1 (Cumulative)

## ART outcomes

\*

### ART side effects

Side effects unknown (not recorded)	3,231	0%
Side effects recorded	803,557	100%
No side effects	801,247	100%
Any side effects	2,310	0%

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

ICF not done (Current TB status unknown/ not circ)	21,433	3%
ICF done	785,355	97%
TB not suspected	773,913	99%
TB suspected	9,351	1%
TB confirmed	2,091	0%
TB confirmed, not on treatment	137	7%
TB confirmed, on TB treatment	1,954	93%

### Pregnant / Breastfeeding

Pregnant females	806,788	100%
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# ART survival analysis

Malawi (National)

2019 Q1 (Quarter)

## 12 month survival all ages

### Survival and retention in ART program

\*

#### ART cohort registration group outcomes

Total ART clinic registrations	42,717	100%
Transfers out (double counted)	5,687	13%
Total not transferred out (patients in cohort)	37,030	87%
Total alive on ART	26,585	72%
Total not retained	10,445	28%
Defaulted	8,927	85%
Stopped ART	248	2%
Died	1,270	12%



# Viral load monitoring cohort report

Malawi (National)

2019 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

## VL samples collected in the reporting period

\*

### VL samples collected

Total VL samples	83,661	100%
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### Reason for VL test

Routine / scheduled monitoring	75,054	90%
Extra-schedular	7,458	9%
Targeted (clinical suspicion of failure)	2,756	37%
Follow-up after high VL	4,702	63%
Replacement of lost sample / missing result	1,149	1%

## Results for VL samples collected 6 months ago

\*

### Total VL samples with outcomes

Total VL samples collected 6 months ago	104,233	100%
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### VL test results

Valid results	95,965	92%
<1000 copies / ml	84,146	88%
1000+ copies / ml	11,819	12%
Rejected samples / invalid results	301	0%
Missing / outstanding results	7,967	8%

### Result transmission type

Paper results	93,784	97%
Electronic results	2,794	3%

### Time from sample collection to receipt of results

0-4 Weeks	38,840	37%
5-8 Weeks	45,917	44%
9-12 Weeks	7,435	7%
13+ Weeks / still missing	12,041	12%

### Time from sample collection to client notification

0-4 Weeks	16,795	16%
5-8 Weeks	22,657	22%
9-12 Weeks	13,915	13%
13+ Weeks / pending	50,866	49%

## Patients with high VL: outcome after 6 months

\*

### Patients in high VL cohort

Total high VL patients evaluated after 6 months	10,786	100%
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### Initial high VL: reason for test

Routine / scheduled monitoring	9,952	92%
Targeted (clinical suspicion of failure)	620	6%
Repeat sample	214	2%

### Intensive adherence counselling

3 Sessions completed	5,940	55%
Sessions not completed	4,846	45%

# Viral load monitoring cohort report

Malawi (National)

2019 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	4,560	42%
Valid results	3,243	71%
<1000 copies / ml	1,297	40%
1000+ copies / ml	1,946	60%
Rejected samples / invalid results	12	0%
Missing / outstanding results	1,305	29%
Follow-up sample pending	6,226	58%

### Preliminary opinion

Conclusion made	3,194	30%
Continue current regimen	2,044	64%
Switch to 2nd line ART	1,150	36%
Conclusion pending	7,592	70%

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

Decision made	2,774	26%
Continue current regimen	1,694	61%
Switch to 2nd line ART	1,068	39%
Refer to HIV specialist	12	0%
Decision pending	8,012	74%

# STI site report

Malawi (National)

2019 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	101,943	100%
Index patients treated (symptomatic)	83,189	82%
Partners treated	18,754	18%

### Sex

Males	39,905	39%
Males Non-circumcised	28,615	72%
Males Circumcised	11,290	28%
Females	62,038	61%
Non-pregnant	52,738	85%
Pregnant	9,300	15%

### Age group

Age group A (0-19 years)	8,998	9%
Age group B (20-24 years)	23,407	23%
Age group C (25+ years)	69,538	68%

### Client type

Symptomatic cases	90,097	88%
Index cases	83,189	92%
Partners symptomatic	6,908	8%
Partners asymptomatic	11,846	12%

### STI treatment history

Never treated for STI	77,046	76%
Previously treated for STI	24,897	24%
Old >3 months ago	18,314	74%
Recent ≤3 months ago	6,583	26%

### STI syndromic diagnosis

GUD	15,381	14%
UD	26,104	23%
AVD	35,965	32%
Low risk	10,486	29%
High risk	25,479	71%
LAP	14,466	13%
SS	1,431	1%
BU	1,064	1%
BA	1,870	2%
NC	409	0%
Genital Warts	818	1%
Syphilis RPR VDRL	8,353	7%
Other STI	7,619	7%

### STI partner notification

Total partner notification slips issued	29,393	100%
Total partners returned	18,754	64%
Total partners not seen	10,639	36%

## STI site report

Malawi (National)

2019 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	11,292	11%
HIV status ascertained	90,651	89%
HIV negative (new test)	74,707	82%
HIV positive	15,944	18%
New positive	2,345	15%
Previous positive	13,599	85%
Not on ART	879	6%
On ART	12,720	94%

#### STI clients referred for services

Lab	1,436	3%
Gynae review	1,043	2%
Surgical review	342	1%
Repeat HTC	37,982	74%
ART (for assessment)	3,408	7%
Other (service referrals)	3,523	7%
VMMC	3,254	6%