



Government of Malawi Ministry of Health

Integrated HIV Program Report April-June 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 (April – June 2019)

- Scale-up of integrated HIV services had reached the following number of sites:
 - **759** static and **139** outreach HIV testing sites
 - **749** (static) ART sites; **616** of these started at least one pregnant or breastfeeding woman and **720** started asymptomatic patients (Test & Treat) this quarter
 - **691** sites with HIV-exposed children in follow-up
- **1,007,296** persons were tested for HIV and received their results; **207,831 (21%)** accessed HIV testing for the first time; **799,465 (79%)** were repeat testers and **33,613 (3%)** of these received confirmatory testing (after having tested positive in the past). **28,912 (2.8%)** clients received a positive result for the first time¹.
- **19,675 (98%)** of 20,078 blood units collected were screened for (at least) HIV, hepatitis B and syphilis
- **160,860 (97%)** of 165,689 women at ANC had their HIV status ascertained; **10,830 (7%)** of these were HIV positive. **134,297 (94%)** of 142,538 at maternity had their HIV status ascertained **9,845 (7%)** of these were HIV positive.
- **28,318** patients started ART this quarter; **67%** were classified as asymptomatic / in WHO stage 1 and started under the “Test & Treat” policy.
- **819,947** patients were alive and on ART by end of June 2019¹⁸. This means that **78%** of the estimated 1,066,811 HIV positive population was on ART. ² ART coverage was **68%** (46,754/ 68,727) for children³ and **78%** (781,570 / 998,084) for adults.
- **104,156 (92%)** of viral load results from routine monitoring were <1000 copies/ml. Viral suppression rates for routine samples among children (0-14 years) and adults (15+ years) were **65%** and **93%**, respectively.
- **70%** of adults and **76%** of children were retained alive on ART at 12 months after initiation.⁴
- Out of **791,146** patients on first line adult ART **323,124 (42%)** were on TDF/3TC/EFV and **422,245 (55%)** had transitioned to TDF/3TC/DTG.
- **11,765⁵ (>99%)** of an estimated 10,932 ² HIV infected pregnant women in Malawi were on ART this quarter. **8,461 (72%)** of these were already on ART when getting pregnant and **3,303 (28%)** started ART during pregnancy/delivery.
- An additional **1,160²** breastfeeding women started ART in WHO stage 1 or 2.
- **78%**, and **70%** of women started while pregnant or breastfeeding were retained on ART at **6 and 12 months** after initiation, respectively.
- **9,037 (7%)** of infants discharged alive from maternity were known to be HIV exposed, **8,456 (94%)** of these received ARV prophylaxis (nevirapine).

¹ 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 “1st 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%**.

² 2019 Spectrum Model estimates for the HIV population in June 2019.

³ Number of children (0-14 years) on ART extrapolated from age-disaggregated cohort reports from sites with electronic medical record systems (see section 11.3 on page 25).

⁴ 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 11.4)

⁵ 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 **13,887 HIV** exposed children were newly enrolled for follow-up this quarter; **11,243 (81%)** of these were enrolled before age 2 months.
- Out of the total 1,066,811 estimated PLHIV by end June 2019:
 - An estimated **92%** of PLHIV knew their status (diagnosed)
 - **84%** of whom were on ART
 - **91%** of whom were virally suppressed.⁶
- This means that the Q2 2019 scale-up target for the population diagnosed was exceeded. The estimated proportion of PLHIV who know their status was reduced from previous quarter (94%) 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 apparent gap between the estimated number of PLHIV diagnosed and those on ART has slightly declined to 164,586 individuals diagnosed but not on ART. This gap may be explained by increasing challenges with early ART uptake among the large number of PLHIV diagnosed over the last quarters, many of whom are asymptomatic. However, the number of new diagnoses may also be considerably overestimated due to an increase in the number of people misclassified as ‘newly diagnosed’ while they were actually previously diagnosed and did not disclose this to the HTS provider

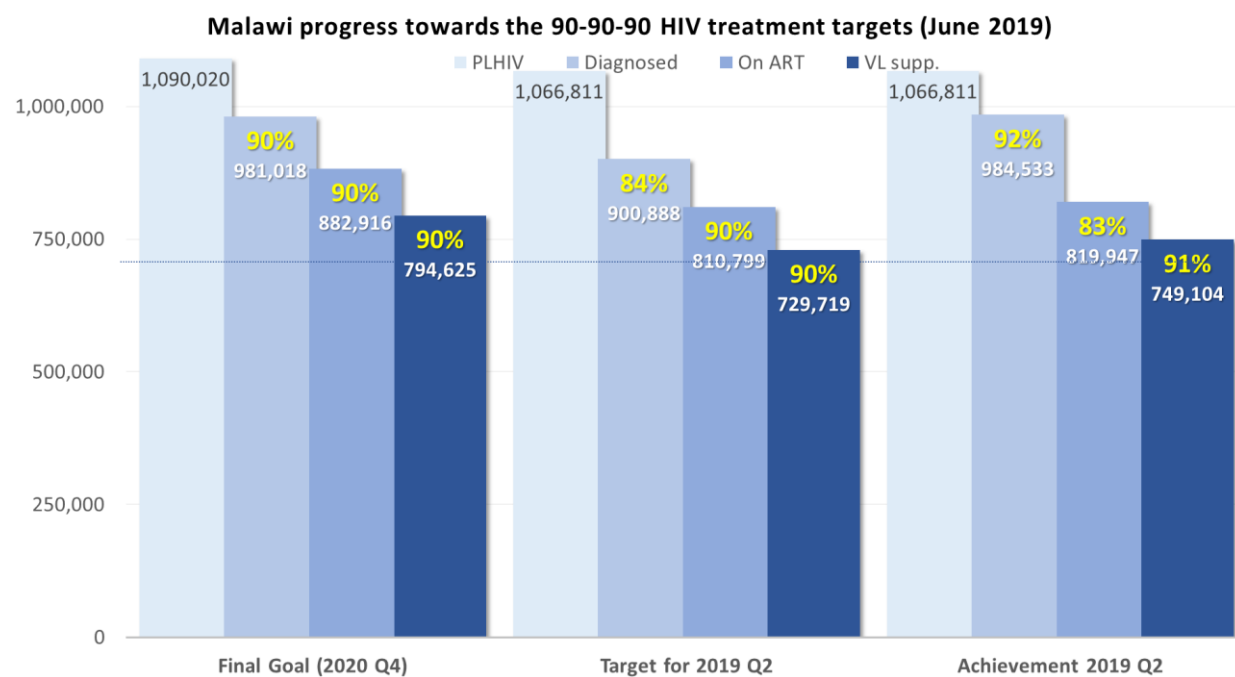
⁶ Estimation methods for progress towards the 90-90-90 treatment targets

‘First 90’ (984,533 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 ($1,003,680 \times 76.8\% = 770,826$); add: 247,000 = 54% of 457,407 people reported as newly diagnosed between April 2016 – June 2019 (HTS program data adjusted for an estimated 46% of repeat testers misclassified as newly diagnosed); subtract: 33,266 (63%) of 67,491 estimated deaths among all PLHIV (2019 Spectrum model) between April 2016 – June 2019 to account for deaths among the diagnosed population (on ART and not on ART).

‘Second 84’ (819,947 on ART): patients retained alive on ART by end Q2 2019 from routine ART program reports.

‘Third 91’ (749,104 virally suppressed): extrapolated from the 91% of patients with a routine VL monitoring result <1000 copies/ml this quarter, applied to the 819,947 patients on ART.

Figure 1



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 some policies /components were revised. Training for nationwide implementation is underway and refresher training for the revised components have been planned. The following are the policies/components of policy that were revised and endorsed for implementation and scale up in Malawi by the Ministry of Health and Population beginning in April 2019.

- **Introduction of dolutegravir- (DTG) based first line ART regimens for all:** Transition of new and existing eligible patient groups weighing 20kg +including women who may get pregnant while on ART
- **Phasing out of NNRTI-Based (NVP) regimens:** Transitioning of clients on NVP to DTG or PI Based regimens.
- **Differentiated Service Delivery (DSD) Model:** Introduction of Six-Monthly Drug Refills
- **Phasing out of NNRTI-Based (NVP) regimens:** Transitioning of clients on NVP to DTG or PI Based regimens.
- **Viral Load Monitoring:** Moving from 2 yearly routine sample collection to yearly
- Offer **oral PrEP** as additional prevention method for HIV-negative clients at substantial risk of HIV infection.

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

756 public and private sector facilities were visited for **clinical HIV program supervision** between 8th and 18th of July 2019.

The large number of sites was covered by **260** supervisors working in **32** teams that spent 2,041 **working hours** at the sites. Each site visit lasted on average 2.7 hours, but up to 2 days were spent at the busiest sites. **539 (71%)** sites were awarded a *certificate* for **excellent performance**. This number is higher than the previous quarter (515). **79 (10%)** sites had significant weaknesses and were rated to require **intensive mentoring**. Mentoring capacity will need to be further expanded.

Table 1: Outcomes of integrated HIV services supervision for 2019 Q2

Zone	Total facil. visited*	Supervision hours spent at facilities		Performance (# and % of sites)	
		Total	Average per site	Excellent perform.	Mentoring needed
NZ	133	332	2.5	94 71%	11 8%
CEZ	106	249	2.3	84 79%	12 11%
CWZ	171	454	2.7	116 68%	24 14%
SEZ	169	515	3.1	110 65%	17 10%
SWZ	177	491	2.8	135 76%	15 8%
Malawi	756	2,041	2.7	539 71%	79 10%

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

Error! Reference source not found. **Table 1** summarizes the supervision outcomes by zone. Most facilities were using the standard national M&E tools. **222** sites had cumulatively registered more than 2,000 ART patient and **77** of these had registered more than 5,000. **203** (91%) 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 **139** outreach HIV testing sites in Q2 2019.

Table 1

Facilities with integrated HIV services in the 5 Zones. Availability of services defined by performance (at least 1 patient enrolled) during 2019 Q2

Zone	Total fac.(1)	Facilities providing HIV services				CD4 count machines (2)			
		Exp. child	Pre-ART	PMTCT B+	ART	Installed	Functional	Results	
SEZ	169	160 95%	0 0%	158 93%	167 99%	6 4%	1 17%	5	
SWZ	177	160 90%	10 6%	140 79%	175 99%	17 10%	13 76%	3,720	
CWZ	171	146 85%	0 0%	133 78%	169 99%	9 5%	2 22%	820	
CEZ	106	103 97%	0 0%	89 84%	106 100%	2 2%	0 0%	0	
NZ	136	122 90%	0 0%	96 71%	132 97%	8 6%	2 25%	50	
Malawi	759	691 91%	10 1%	616 81%	749 99%	42 6%	18 43%	4,595	

(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 1 shows the distribution of the **759** sites designated to provide clinical HIV services in Q2 2019, by zone. At the national level, there were **749** (static) sites with at least one patient on ART; **616** sites had enrolled women under PMTCT Option B+; **691** 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 42 sites, and **18** (43%) of these had produced at least 1 result during Q2 2019. The total number of CD4 results produced (**4,595**) increased from the previous quarter (2,264). With the introduction of the ‘Test & Treat’ policy, routine CD4 count testing to determine when to start ART has become obsolete. However, the 2018 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 2

	2018 Q3		2018 Q4		2019 Q1		2019 Q2	
Sites visited	755		755		754		756	
Sites with any tests done	715	95%	720	95%	711	94%	719	95%
Sites with registered HTC staff	687	91%	647	86%	660	88%	652	86%
Total HTC staff at visited sites	4,165		4,288		4,216		4,068	
Providers with any DBS (VL) samples collected	1,887	45%	1,924	45%	1,837	44%	1,873	46%
Providers with any DBS (EID) samples collected	1,438	35%	1,491	35%	1,477	35%	1,421	35%
Providers with any Syphilis test done	1,879	45%	1,895	44%	1,815	43%	1,947	48%
Providers with any HIV test done	2,711	65%	2,828	66%	2,597	62%	2,672	66%
Providers with 300+ HIV tests done this quarter	1,075	31%	1,056	31%	1,027	29%	909	27%
Logbooks reviewed	3,488	84%	3,410	80%	3,540	84%	3,351	82%
Providers participating in PT this quarter	431	12%	2,741	80%	2,675	76%	1,113	33%
Total DBS (VL) Samples	79,490		68,949		56,992		108,656	
Total DBS (EID) Samples	8,933		9,556		9,250		10,863	
Total Syphilis tests	144,395		118,187		101,461		144,569	
Total HIV tests (HTC register)	1,210,048		1,106,090		1,117,587		1,007,296	
HIV tests accounted for by individual staff	838,939	69%	844,128	76%	783,986	70%	695,140	69%
Source: logbooks	802,856	96%	789,003	93%	745,303	95%	653,500	94%
Source: HTC register	36,083	4%	55,125	7%	38,683	5%	41,640	6%
Total tests by staff with 300+ tests	671,343	80%	664,223	79%	619,309	79%	500,308	72%

652 (86%) of the 756 visited facilities had registered HIV testing providers and **720 (95%)** sites had performed at least one test during Q2 2019. **3,351 (78%)** of 4,288 providers had their logbooks available for review. This is a slight decrease from the previous quarter (84%). Based on the reviewed logbooks **2,597 (61%)** had done at least one HIV test during the quarter; **1,948(45%)** at least one syphilis test; **1,874 (45%)** had collected at least one VL sample; and **11,422 (33%)** 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 3,351 reviewed logbooks, **1,113 (33%)** 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.

695,140 (69%) of all 1,007,296 HTS tests conducted this quarter (according to HTC register reports) were accounted for by individual HTS staff working at the visited sites. **653,500(94%)** of these tests were documented in the reviewed logbooks and an additional **41,640 (6%)** could be attributed to individual providers from staff codes in the HTS registers. **909(7%)** of 5,288 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 **909 staff** who met or exceeded this target provided **500,308 (72%)** 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 consistent over the last 3 quarters. However, the number of ART clinicians decreased by 3 from 881 to 878 from the previous quarter.

Among the other cadres, **1,253** were nurses and **950** were auxiliary staff (health surveillance assistants, clerks, etc.)

Table 3

	2018 Q3		2018 Q4		2019 Q1		2019 Q2	
Clinicians	774	25%	843	27%	881	27%	878	27%
Nurses	1,270	41%	1,274	41%	1,329	41%	1,253	39%
Pharmacy staff	51	2%	44	1%	47	1%	116	4%
Auxiliary Staff	1,038	33%	927	30%	950	30%	950	30%
Total	3,133		3,088		3,207		3,197	

An estimated 3.9 million ART patient visits are currently managed at the 749 ART sites per annum, based on 819,947 patients alive on ART and an average dispensing interval of 2.5 months. With 260 working days per year, an average of 15,137 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 **12** per nurse per day. This approximate HRH capacity assessment does not take account of site-specific differences in patient burden and staffing levels and there are several medium and high burden sites with sub-optimal staffing. However, the national treatment program is fully decentralized to the health centre level and the program continues to devolve the growing patient burden to peripheral facilities. Since 2011, the steepest increase in ART patient numbers has been recorded at the 300 small peripheral sites that have the largest collective staffing capacity (see Figure 7 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.

668 (92%) of the 719 active testing sites had documented at least 1 QC set this quarter and **495 (74%)** had recorded the minimum of 12 sets (one for each week). At **659 (99%)** of sites, all samples produced the expected result.

5.2 HIV Testing and Counselling Outputs

1,007,296 people⁷ were tested and counselled for HIV between April and June 2019. This is a decrease of 10% decrease from the previous quarter (**1,117,587**). 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.

967,030 (96%) of all tests were performed at health facilities, **6,884 (<1%)** were done in stand-alone HTC sites and **33,382 (3%)** were done outside of facilities / in the community. 28,912 people were reported as newly diagnosed with HIV this quarter. Out of these, **27,487 (95%)** were diagnosed at health facilities; **223 (<1%)** at stand-alone HTC sites; and **1202 (4%)** through community-based testing. The reported 'yield' for new diagnoses was 2.9% (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 28,912 reported "new positives" results in an estimated 15,612 genuine new diagnoses this quarter. This reduces the true 'yield' in the HTS program to **1.5%**.

5.3 HIV testing access type

727,497 (72%) of people tested were patients receiving provider-initiated testing and counselling (PITC); **262,948 (26%)** accessed voluntary testing and counselling, door-to-door, community-based testing, etc.; and **16,851 (2%)** 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

⁷ 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.

57,023 FRS issued to index clients this quarter, the successful referral rate for family members was **29%** (16,851 / 57,023). Issuance and utilization of FRS have increased considerably over the last quarters.

5.4 Age and sex distribution among HIV testing clients

Out of **1,007,296** people tested and counselled, **34%** were males and **66%** were females. **31%** of females were pregnant. The ratio of males (**43%**) to non-pregnant females (**57%**) has remained constant. Testing among pregnant women is almost entirely provider-initiated and there is no comparable access route targeting males.

204,387 (20%) of all people tested accessed HTC with their partners (as a couple).

51% of all people tested and counselled were 25 years and above, **38%** were adolescents or young adults (15-24 years) and **10%** were children (<15 years). **2951 (<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 Q1 to Q2 2019, the number of males, non-pregnant females and pregnant women tested decreased by 14%, 6% and 5%, respectively.

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

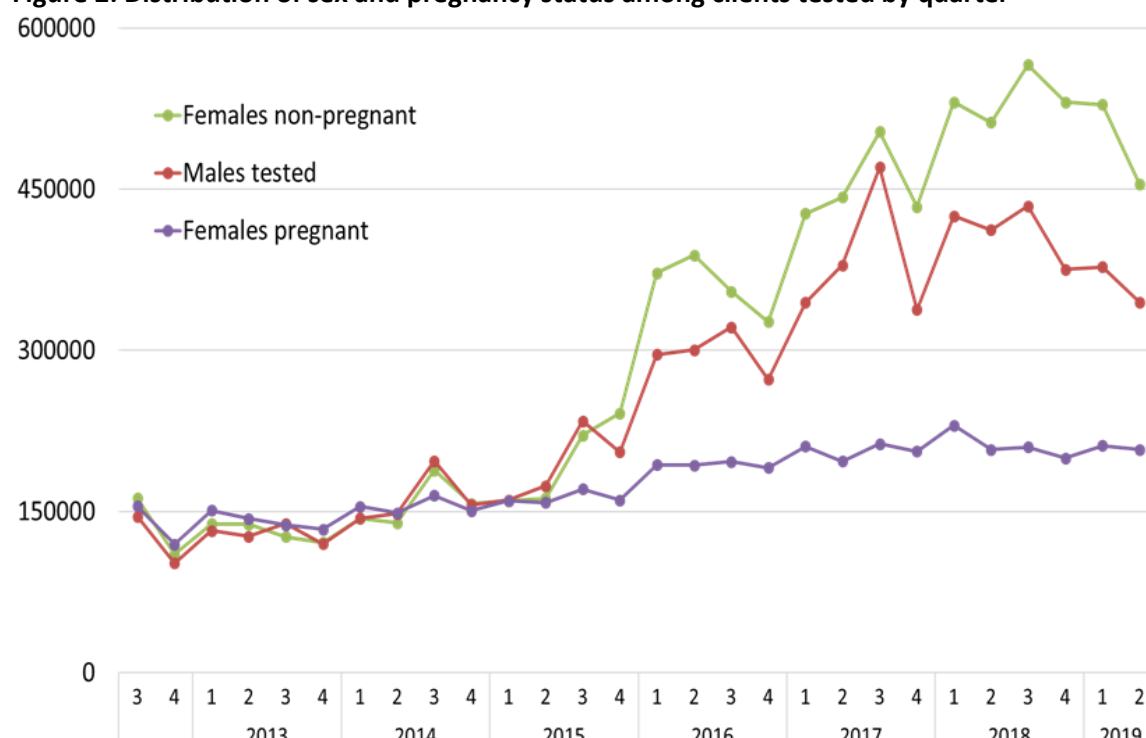
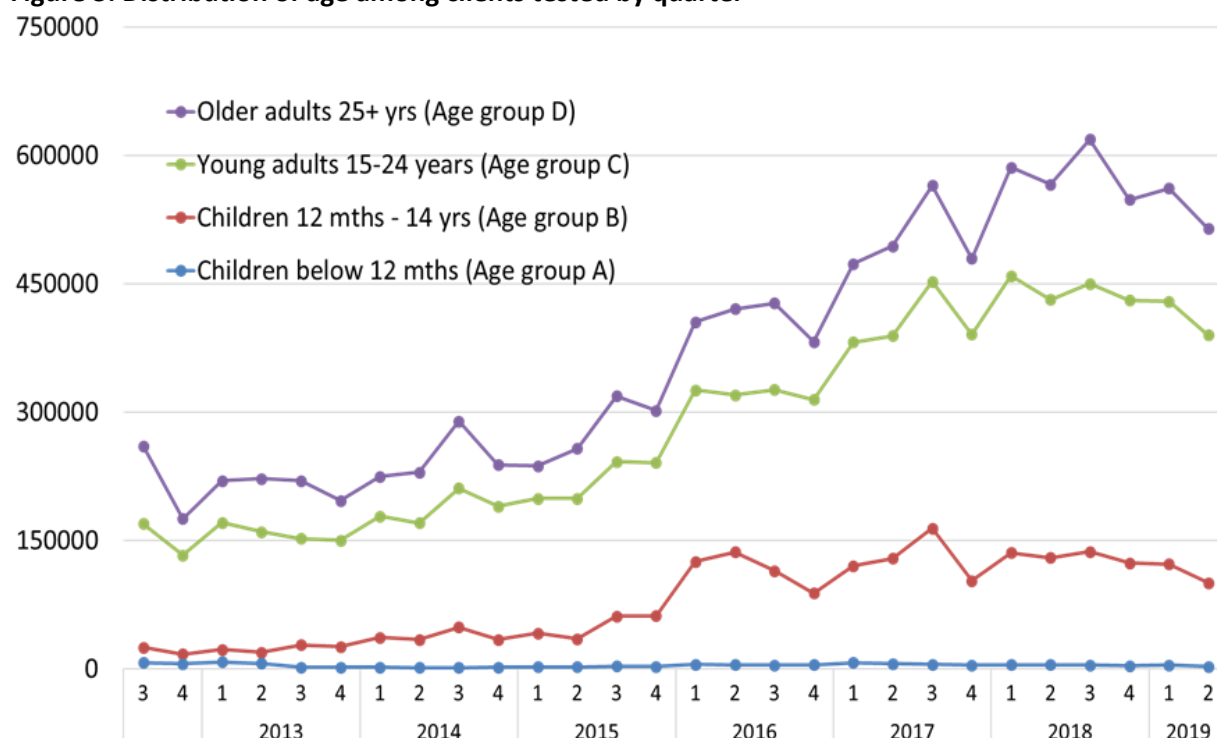


Figure 3: Distribution of age among clients tested by quarter



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.

207,831 (21 %) of all clients tested accessed testing for the first time and **799,465 (79%)** were repeat testers. Based on the cumulative number of people who accessed HTC for the first time, a total of **11,113,300** 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.

28,912 (2.8%) 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 (**149**) and inconclusive test results (**1,865**) both accounted for **<1 %** of new results given to clients.

764,852 (96%) of 799,465 repeat testers reported a *last negative* result. **33,613 (3%)** 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 (33,346)* were below the number of previous positive clients by 267. This may be explained by clients who only disclosed their previous positive status after receiving another positive result. **33,343 (99%)** of 33,543 confirmatory test results were concordant positive and **200 (<1%)** were classified as *confirmatory inconclusive*. This category includes parallel concordant negative and

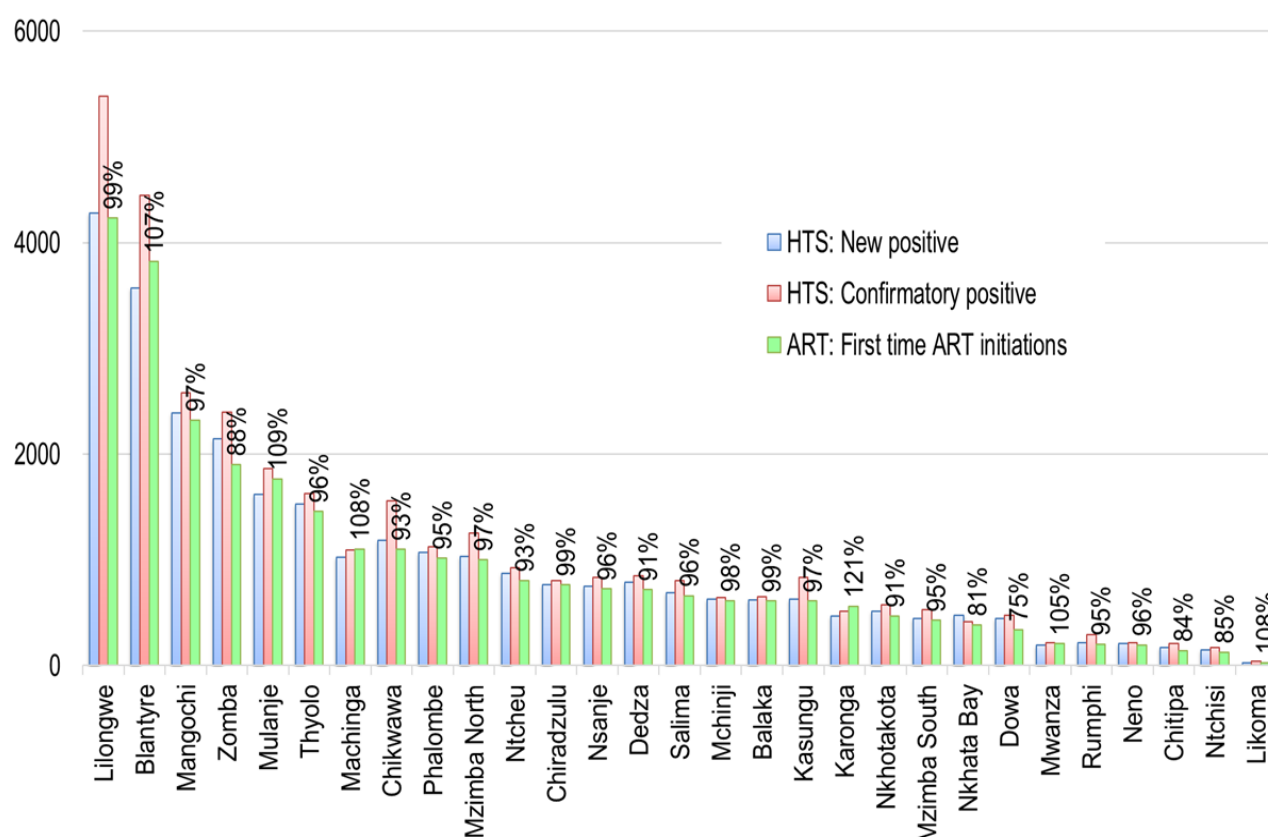
discordant test outcomes (Determine HIV1/2 and Uni-Gold HIV1/2 are used in parallel for confirmatory testing). Clients who did not have a concordant positive confirmation may be explained by selective confirmatory testing among clients with doubts about their previous positive status, but it also underscores 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 **28,318** patients who initiated ART this quarter represent **98%** of the **28,912** clients tested positive for the first time. Proxy linkage rates ranged from 75% in Dowa to 121% in Karonga. Lilongwe had the highest number of new diagnoses (**4,278**) and ART initiations (**4,232**), implying a district-level linkage of **99%**. 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, Blantyre, etc.).

The number of confirmatory positives exceeded the number of new positives by 4,431 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 (1,110) of confirmatory positives compared with the number of new positives. Lilongwe, Blantyre, Zomba, Machinga, Mulanje and Thyolo accounted for **2,840** (64%) out of the 4,431 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 5,027 (21%).

Figure 4: Number of new positives, confirmatory positives and new ART initiations in Q2 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, Thyolo 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.

(88%) of 691 sites with HIV exposed children in follow-up had collected and recorded at least 1 DNA-PCR sample during Q2 2019. **10,377** 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 **8,207 (79%)** of these specimens and **4,840 (59%)** of these results had been communicated to the mother/guardian. The proportion of results received at the sites was **90%, 79% and 66%** for samples collected in April, May and June, respectively. A total of **368 (4%)** results received at the sites were positive.

The **10 laboratories** registered the **receipt** of **8,880** DNA-PCR samples that were collected during Q2 2019. This represents **86%** of the 10,377 samples recorded in the logbooks at the sites.

A total of **8,880** valid DNA-PCR results were dispatched from the labs in Q2 2019. **6,724 (76%)** of the dispatched results were from samples collected in Q2 2019, while 2,128 (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.

Table 4

Age at sample collection	Tot. Results	Positives	
<2 months	5,806	109	1.8%
2-5 months	2,140	146	6.8%
6-11 months	605	140	23.1%
12-17 months	122	68	55.7%
18 months +	73	47	64.3%
(missing)	134	16	11.9%
Total	8,880	526	5.4%

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 5

Age when result sent from lab	Tot. Res.	(Col %)	Positives	(Col %)
<2 months	2,201	23%	20	4%
2-5 months	5,610	63%	215	41%
6-11 months	704	8%	147	28%
12-17 months	148	2%	75	14%
18 months +	83	1%	53	10%
(missing)	134	2%	16	3%
Total	9,88	100%	526	100%

Out of **526** positive results dispatched, only **20 (4%)** were sent before the child was 2 months old. A total of **215 (41%)** positive results were sent before the child was 6 months old

and **147 (28%)** were sent before the child was 12 months old. A total of **72** 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 20,078 blood units were collected in Malawi during Q2 2019. MBTS collected **15,650(78%)** of these, **100%** of which were screened comprehensively for the relevant TTIs (HIV, Hepatitis B, Hepatitis C, syphilis, malaria). In addition, **54** hospitals in Malawi collected a total of 4,428 units from replacement donors. **4,025 (91%)** of these units were screened for at least the 3 key TTIs (HIV, HepB and syphilis) and **3,075 (76%)** of these were also screened

for HepC and malaria. This means that a total of **19,675 (97.9%)** 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, 381 were screened with any other combination of tests for TTIs.

A total of **7,222** potential replacement donors were documented in the blood donor registers at the facilities and **4,428 (58%)** 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, 75% of potential donors were tested for HIV, 78% for HepB, 78% for syphilis, 69% for malaria and 54% 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 3,451 persons received PEP during Q2 2019. This is an increase from the previous quarter's 2,719

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 6 shows that **92,259 (22%)** of 425,552 women received Depo-Provera from ART clinics in Q2 2019. The south east zone had achieved the highest coverage. Patient coverage has slightly increased from 21% in the previous quarter. 501 (67%) of ART/PMTCT sites had stocks of Depo-Provera in July 2019. This is an increase from the previous quarter with 252 sites with Depo in April 2019.⁸ 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

⁸ Many Mission hospitals do not provide family planning.

than 5% of patients are expected to require stopping of CPT due to toxicity, so the targeted CPT coverage is around 93%.

Table 7 shows that **743,147 (91%)** of 819,947 patients on ART were on CPT. Coverage was highest in Central East and West zones at **94%**.

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 6 shows that **239,987 (70%)** of the 341,986 ART patients in the 5 districts were on IPT by the end of Q2 2019. IPT coverage ranged from **65 %** in Zomba to **78%** in Chiradzulu.

638,739 (78%) of 819,947 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. **200,716 (31%)** of 638,739 were screened for hypertension at least once in 2019.

Table 6

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**	
Malawi (National)	819,947	743,147	91%	239,987	29%	425,552	92,259	22%	638,739	200,716	31%
Northern Zone	81,449	73,251	90%	0	0%	42,272	7,199	17%	63,449	27,385	43%
Chitipa	6,286	4,809	76%	0	0%	3,262	107	3%	4,897	1,697	35%
Karonga	14,255	12,877	90%	0	0%	7,398	1,162	16%	11,105	4,860	44%
Nkhata Bay	10,070	7,737	77%	0	0%	5,226	417	8%	7,845	2,502	32%
Rumphi	8,252	8,038	97%	0	0%	4,283	832	19%	6,428	2,366	37%
Mzimba North	26,040	24,413	94%	0	0%	13,515	2,799	21%	20,285	8,053	40%
Mzimba South	15,830	14,669	93%	0	0%	8,216	1,802	22%	12,332	7,886	64%
Likoma	716	709	99%	0	0%	372	79	21%	558	22	4%
Central East Zone	65,001	61,421	94%	0	0%	33,736	6,673	20%	50,636	15,758	31%
Nkhotakota	12,537	12,053	96%	0	0%	6,507	508	8%	9,766	1,352	14%
Kasungu	17,728	17,170	97%	0	0%	9,201	1,412	15%	13,810	5,363	39%
Ntchisi	4,803	4,599	96%	0	0%	2,493	561	23%	3,742	1,787	48%
Dowa	13,049	12,591	96%	0	0%	6,772	1,022	15%	10,165	4,468	44%
Salima	16,884	15,008	89%	0	0%	8,763	3,170	36%	13,153	2,788	21%
Central West Zone	167,917	157,708	94%	72,592	43%	87,149	20,022	23%	130,807	52,808	40%
Lilongwe	104,273	97,019	93%	72,592	70%	54,118	14,674	27%	81,229	40,776	50%
Mchinji	17,191	15,865	92%	0	0%	8,922	1,387	16%	13,392	3,013	22%
Dedza	19,392	18,646	96%	0	0%	10,064	2,351	23%	15,106	4,642	31%
Ntcheu	27,061	26,177	97%	0	0%	14,045	1,610	11%	21,081	4,378	21%
South West Zone	254,597	217,910	86%	131,844	52%	132,136	26,318	20%	198,331	42,755	22%
Chiradzulu	40,255	36,757	91%	31,222	78%	20,892	4,990	24%	31,359	4,565	15%
Blantyre	93,288	69,559	75%	63,176	68%	48,416	10,282	21%	72,671	18,193	25%
Mwanza	6,269	5,926	95%	0	0%	3,254	979	30%	4,884	989	20%
Thyolo	54,701	50,543	92%	37,445	68%	28,390	3,720	13%	42,612	7,106	17%
Chikwawa	29,685	28,066	95%	0	0%	15,407	2,733	18%	23,125	3,444	15%
Nsanje	21,940	18,842	86%	0	0%	11,387	968	8%	17,091	1,980	12%
Neno	8,459	8,216	97%	0	0%	4,390	2,646	60%	6,590	6,479	98%
South East Zone	250,983	232,858	93%	35,551	14%	130,260	32,048	25%	195,516	62,009	32%
Mangochi	53,396	50,214	94%	0	0%	27,713	5,236	19%	41,595	8,613	21%
Machinga	30,660	28,928	94%	0	0%	15,913	1,759	11%	23,884	6,820	29%
Zomba	54,302	50,774	94%	35,551	65%	28,183	9,812	35%	42,301	16,790	40%
Mulanje	56,732	50,981	90%	0	0%	29,444	11,788	40%	44,194	22,699	51%
Phalombe	34,205	31,114	91%	0	0%	17,752	2,346	13%	26,646	3,197	12%
Balaka	21,688	20,848	96%	0	0%	11,256	1,107	10%	16,895	3,891	23%

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

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

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.

809,472 (99%) of all patients retained on ART were screened for TB at their last visit before end of June 2019. Out of these, **6,297 (1%)** patients were classified as new TB suspects. **2,319 (<1%)** patients were confirmed to have TB (clinical or lab based) and **2,269 (98%)** of these were on TB treatment; the remaining 50 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)	10,475	1%
ICF done	809,472	99%
TB not suspected	800,856	99%
TB suspected	6,297	1%
TB confirmed	2,319	0%
TB confirmed, not on treatment	50	2%
TB confirmed, on TB treatment	2,269	98%

8.6 HIV-Related Diseases

Error! Reference source not found. shows the number of patients treated for key HIV-related indicator diseases. **4,318** patients were started on TB treatment this quarter and HIV status was ascertained for **4,288 (99%)**; **1,873 (44%)** of these were HIV positive and **1,767 (94%)** of all HIV positives were already on ART when starting TB treatment. In Q2 2019, **523** and **859** patients received Diflucan for acute cryptococcal meningitis and oesophageal candidiasis, respectively. **91** patients with Kaposi sarcoma were registered for ART in this quarter.

Table 7

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 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
2019 Q2	4,318	4,288 99%	1,873 44%	1,767 94%	91	523	859

9 HIV-Exposed Child Follow-Up

9.1 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.

9.2 HIV Exposed Child Registration Data

13,887 HIV exposed children were newly enrolled into follow-up during Q2 2019; **11,243 (81%)** of these were under the age of 2 months. The total number of new enrolments (13,887) exceeds by 4,850 (35%) the total number of known HIV exposed children discharged from maternity (9,037). 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.

9.3 Birth Cohort Outcomes

There were **10,852** infants in the **2-month age cohort**. **8,131 (76%)** had received a DNA-PCR result. **76 (1%)** of these were confirmed HIV infected. An additional **9** infants were diagnosed with *presumed severe HIV disease*, which means that a total of **85** infants were eligible for

ART. **64 (75%)** of these had started ART. This is an increase from the previous quarter (70%). Out of the entire 2-month age cohort, **9,325 (95%)** were retained in exposed child follow-up, **64 (1%)** had started ART and **18 (<1%)** were discharged confirmed uninfected⁹. **60(<1%)** were known to have died and **389 (4%)** had been lost to follow-up.

There were **12,123** children in the **12-month age cohort**. Current HIV infection status was known for **8,884 (73%)** children (DNA-PCR or rapid antibody test) and **214 (2%)** of these were confirmed HIV infected. **52 (<1%)** additional children had been diagnosed with *presumed severe HIV disease*, which means that a total of **266** children were eligible for ART. **200 (75%)** had started ART. Out of the entire age cohort, **9,109 (84%)** were retained in exposed child follow-up, **200 (2%)** had started ART and **62 (<1%)** were discharged confirmed uninfected.⁹ **1,367 (13%)** were lost to follow-up and **135 (1%)** were known to have died.

There were **11,185** children in the **24-month age cohort**. Current HIV infection status was known for **7,810 (68%)** children (DNA-PCR or rapid antibody test) and **289 (4%)** of these were confirmed HIV infected. **10** additional children had been diagnosed with *presumed severe HIV disease*, which means that a total of **299** children were eligible for ART. **295 (99%)** of these had started ART. Out of the entire age cohort, **290 (3%)** were retained in exposed child follow-up, **295 (3%)** had started ART and **7,306 (72%)** were discharged confirmed uninfected. **2082 (21%)** were lost to follow-up and **121(1%)** were known to have died.

Confirmed HIV-free survival at age 24 months in this quarter was **70%**. This was related to the fact that only 70% in this cohort had a known HIV status. 3,375 (30%) children were classified as ‘*current HIV infection status unknown*’ and many of these may be among the 2,082 children lost to follow-up and the 121 children who had died. Only 290 (2%) were retained in follow-up beyond age 24 months and a final rapid test was not available for these children, possibly due to continued breast feeding. Much progress has been made with scheduled HIV testing (and documentation of test results) at 6 weeks, 12 and 24 months of age.

10 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.

10.1 Data Sources and Reporting Methods

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

⁹ 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.

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 1st / 2nd trimester; during 3rd 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: 201 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).¹⁰

10.2 ARV Coverage among Pregnant / Breastfeeding Women and Exposed Infants

11,765 (>99%) of the estimated 10,932 HIV infected pregnant women in Malawi this quarter were on ART. This is based on **8,461**¹¹ women at maternity who were already on ART when getting pregnant and **3,303**¹² women who newly initiated ART in pregnancy. ART coverage was similar in the previous quarter (>99%).

¹⁰ 2019 Spectrum model estimates for HIV infected pregnant women in 2019.

¹¹ 8,981 women who started ART before pregnancy admitted at maternity; reduced by 5.8% to adjust for double counting of 8,525 referrals among 142,538 total admissions.

¹² 4,650 women registered at ART clinics who were pregnant at the time of starting ART; a) 13.1% are discounted to adjust for double-counting of transfers based on 886 of 7,500 women who transferred within 12 months of registration (12-month Option B+ survival analysis); b) 18.2% are discounted to account for presumed failed ART initiations based on 1,141 of 6,256 women lost to follow-up within 6 months of registration (6-month Option B+ survival analysis).

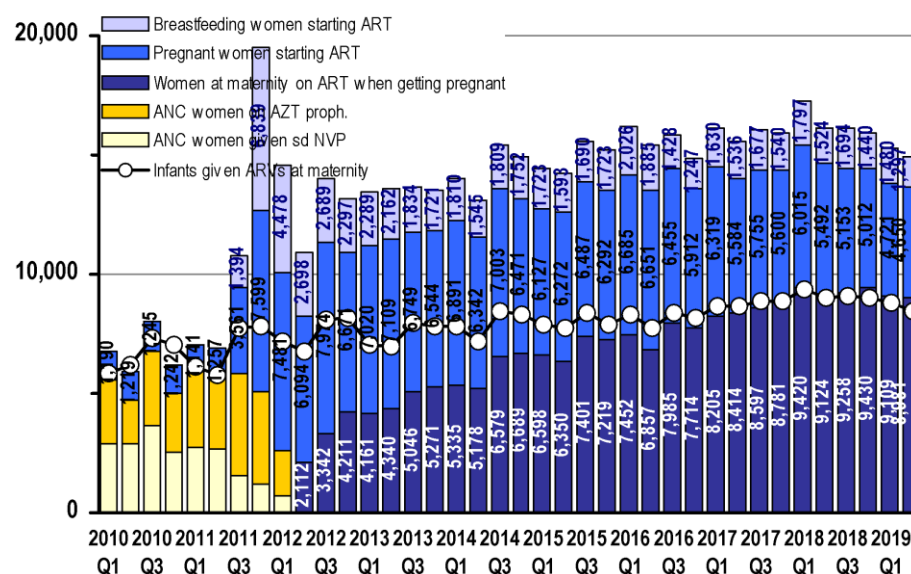
An additional **1,160¹³** breastfeeding women started ART while breastfeeding (in WHO clinical stage 1 or 2), bringing the total number newly started on ART while pregnant or breastfeeding to **4,463**. Most women starting ART while breastfeeding were probably identified late in maternity or early in the postnatal period, but this group may also include some women who re-initiated after interrupting ART in pregnancy. **8,456 infants** were confirmed to have started NVP prophylaxis at maternity.

Figure 5 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 5

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.



10.3 HIV Services at ANC

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

10.3.1 HIV Ascertainment and ART Coverage

Booking cohort:

165,689 women attended ANC for their first visit between April and June 2019. This is >99% of the estimated 160,169 pregnant women in the 2019 population during one quarter.¹⁴ **160,860 (97%)** of women in this cohort had their HIV status ascertained at the first visit. Out

¹³ 1,297 women registered at ART clinics who were breastfeeding at the time of starting ART; reduced by 13.1% to adjust for double-counting of transfers based on 986 of 6,758 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.

¹⁴ Estimated as ¼ of 640,675 births projected for 2019 (Demographic Proj Spectrum 2019).

of these, **11,094 (7%)** presented with a valid previous test result and **149,766 (93%)** received a new test. A total of **10,830 (7%)** of women were found HIV positive: **7,882 (73%)** of these from a documented previous test and **2,948 (27%)** from a new test. **10,482 (97%)** of all positives were on ART: **7,795 (75%)** of these were already on ART when starting ANC and **2,329 (22%)** newly started ART at their first ANC visit and **358 (3%)** started late at 28 + weeks during pregnancy.

Outcome cohort:

152,844 women had started ANC between October and December 2018 and their outcomes were reported between April and June 2019.

148,227 (97%) of the outcome cohort had their HIV status ascertained at least once in the course of ANC. This is slightly lower to the previous quarter (98%). **9,612 (6%)** presented with a valid documented previous HIV test result and **138,615(94%)** received a new HIV test result at ANC. A total of **10,403 (7%)** women were found HIV positive. This is slightly lower than the latest Spectrum projections (6.8% HIV prevalence among pregnant women in 2019).¹⁰

10,268 (99%) of (known) HIV infected women were on ART by the end of ANC. This represents **94%** coverage of the estimated 10,932 HIV positive pregnant women per quarter at the population level. Of the **10,268** ANC women who were known to receive ART **7,231 (70%)** were already on ART when starting ANC, **2,611 (25%)** initiated before 28 weeks of pregnancy and **426 (4%)** initiated during the last trimester of pregnancy. **10,139 (97%)** of HIV infected women at ANC were on Cotrimoxazole Preventive Therapy. **9,809 (94%)** of known HIV infected women attending ANC received the infant dose of ARVs (nevirapine syrup) to take home.

10.3.2 Syphilis Screening

121,283 (79%) of women in the outcome cohort were tested for syphilis and **1,926 (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.

10.4 HIV Services at Maternity

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

Between April and June 2018, **142,538** women were admitted for delivery to maternity; **8,252** of these were referred to another facility before delivery, resulting in **134,286** total admissions to maternity during Q2 2019.

A total of **137,146** babies were born, **132,445 (97%)** were singletons and **4,701 (3%)** were twins/multiples. There were **134,975 (98%)** live births and **2,171 (2%)** stillbirths. **134,121 (99%)** of babies born alive were discharged alive and **854 (1%)** died before discharge.

10.4.1 HIV Ascertainment at Maternity

134,297 (94%) women had their HIV status ascertained at maternity. Out of these, **17,903 (13%)** presented with a valid previous HIV test result and **116,394 (87%)** received a new test. A total of **9,845 (7%)** women were HIV positive and **124,452(93%)** were negative. The **134,297**

women whose HIV status was ascertained at maternity represent **81%** of the expected 166,250 women delivering in the population.

HIV exposure status was ascertained for **128,991 (96%)** out of 134,121 babies born and discharged alive. **9,037 (7%)** of these were born to a known HIV positive mother.

10.4.2 ARV Coverage at Maternity

A total of **9,648 (98%)** of known HIV infected women admitted to maternity received ART. Out of these, **8,981 (93%)** had started ART before pregnancy, **339 (4%)** initiated ART during the 1st or 2nd trimester, **160 (2%)** initiated during the 3rd trimester and **168 (2%)** initiated ART at maternity.

A total of **8,456 (94%)** of 9,037 infants who were known HIV exposed and discharged alive started daily NVP prophylaxis at maternity. This represents **77%** coverage of the estimated 10,932 HIV exposed infants born in the population in this quarter.

11 ART Access and Follow-Up Outcomes

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

11.1 New ART Registrations during Q2 2019

By the end of June 2019, there were 749 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 6**). 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 **28,318** patients-initiated ART for the first time in Q2 2019. The programme from 2019 Q1 started disaggregating the first-time initiations by sex and pregnant status. In Q2 2019, **26,951 (92%)** out of 23,318 first time initiations had been disaggregated¹⁵. Among the disaggregated first-time initiations on ART, 41% were males and **59%** were females. Total number of pregnant women amongst first time initiating females was **4,539 (29%)**.

The total number of patients newly initiated on ART represents 98% of the 28,812 people recorded as newly diagnosed with HIV during the quarter. Among all new ART clinic registrations¹⁶ in Q2 2019, **40%** were males and **60%** were females. **4,650 (21%)** of the registered females were pregnant at the time of starting ART.

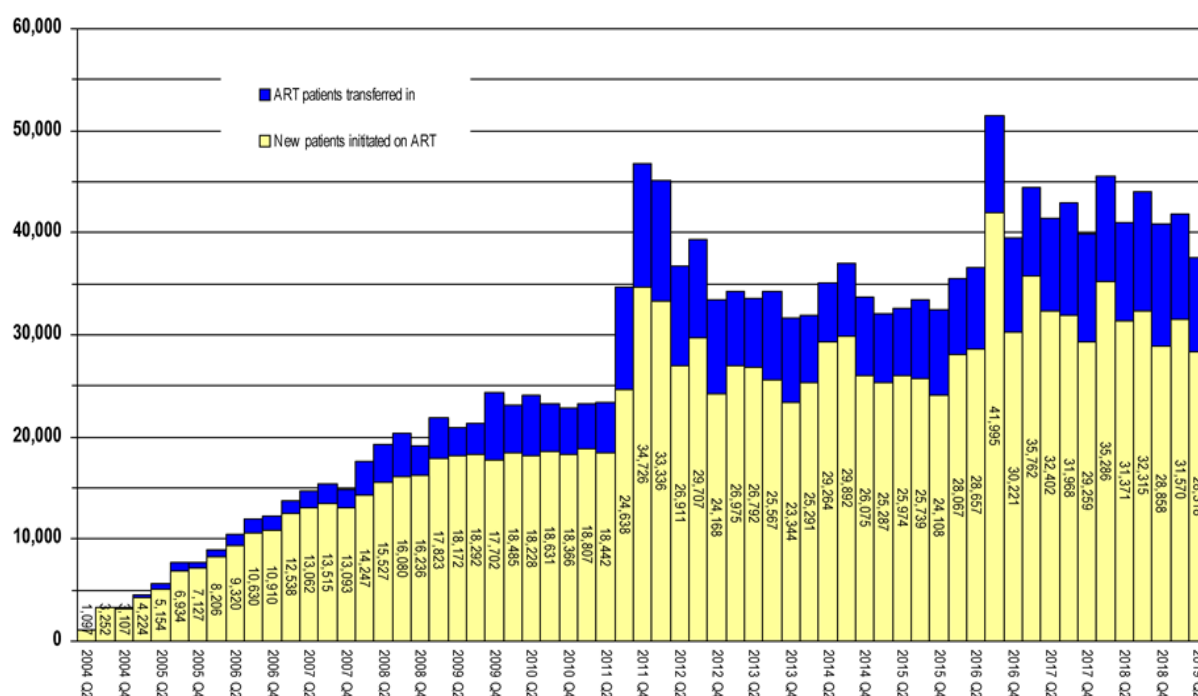
¹⁵ Manual sex and pregnant status disaggregation’s for first time initiations for some high burden sites by supervisors was not possible because of the volume of work.

¹⁶ These proportions include the 28,318 patients newly initiating ART, but also 8,736 patients previously started on ART who transferred between sites and 453 patients who re-initiated ART after treatment interruption.

Figure 6

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 **32,896 (88%)** of all patients registered started in WHO stage 1 or 2 and **25,183 (80%)** of these started as 'asymptomatic' under universal ART eligibility policy. **3,534 (9%)** of patients registered started in WHO stage 3 and **929 (2%)** started in stage 4.

2,446 children were registered at ART sites in Q2 2019. **509 (21%)** of these were children aged 12-59 months in WHO stage 1 or 2. **36 (1%)** children started ART with presumed severe HIV disease. **72** infants in WHO stage 1 or 2 started due to confirmed HIV infection through DNA-PCR. Early infant treatment has remained at about half of the estimated infected infants seen at maternity: considering that 9,037 HIV exposed infants were identified at maternity and assuming a 2% transmission rate among the 98% of HIV positive mothers at maternity who received ART (and 20% transmission in the 2% who did not receive ART)¹⁷, only about 232 of these known HIV exposed infants may have been infected perinatally during Q2 2019. However, considering the projected 834 new infant HIV infections in the 2019 population per quarter¹⁰, early infant treatment coverage remains low at an estimated **28% (232/ 834)**. The most significant bottleneck for early infant treatment remains the identification of HIV (probably mostly recently) infected pregnant / breastfeeding women.

728 (2%) out of all ART clinic registrations were patients with TB: **298 (<1%)** had a current and **430 (<1%)** a recent history of TB. **138 (<1%)** of patients registered had Kaposi's sarcoma.

11.2 Cumulative ART Registrations up to June 2019

By the end of June 2019, there were a cumulative total of **1,599,725** clinic registrations, **1,258,214 (79%)** of whom were patients newly initiated on ART; **312,133 (20%)** were patients who transferred between clinics; **29,378 (2%)** re-initiated ART after treatment interruption.

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

Out of all registrations, **37%** were males and **63%** were females, **92%** were adults and **8%** were children (<15 years).

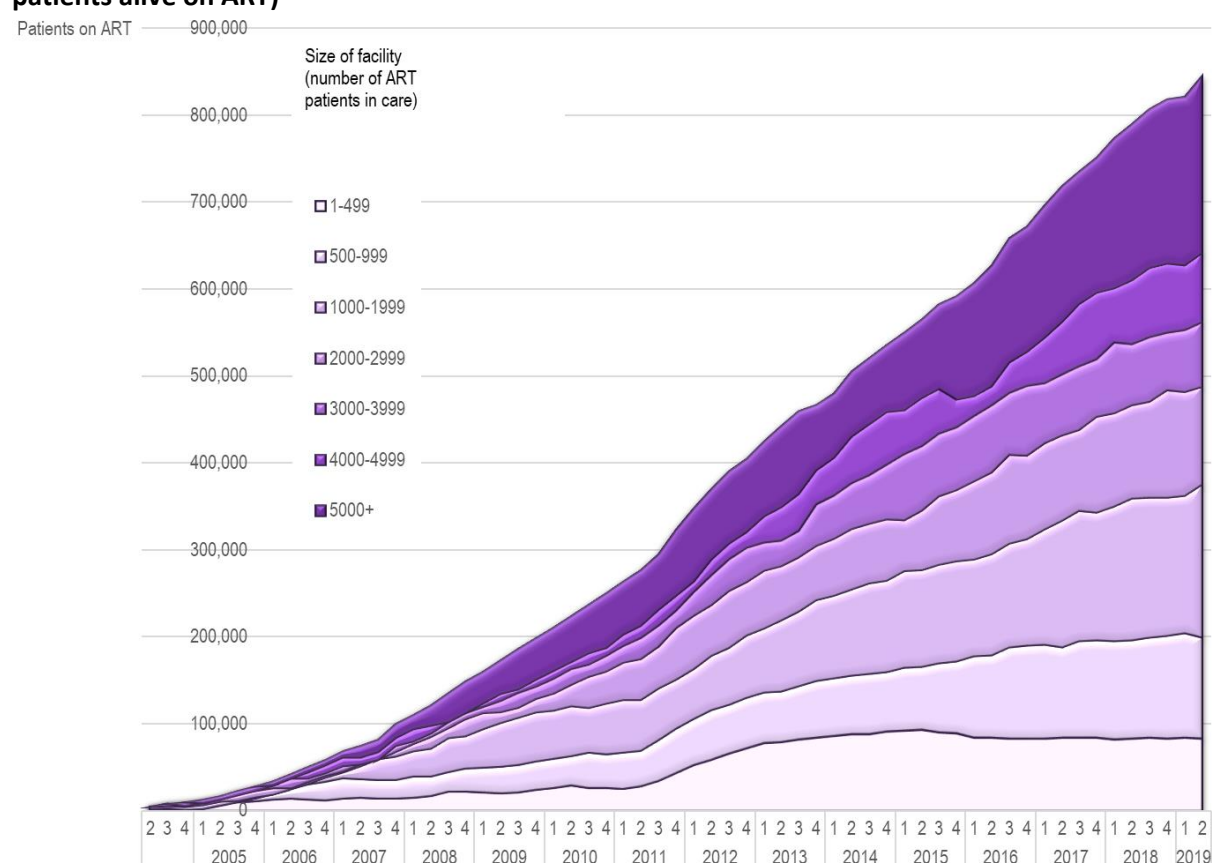
11.3 ART Outcomes

819,947 patients were alive on ART by the end of June 2019. This is equivalent to **78% ART coverage** among the estimated 1,066,811 HIV positive population in Malawi in 2019 and it means that the national ART scale-up target for June 2019 (76% coverage) has been achieved. The number of patients on ART did not include patients in transit between sites¹⁸.

Out of the 1,677,847 patients ever initiated on ART, **819,947 (49%)** were retained alive on ART, **117,495 (9%)** were known to have died, **376,420 (27%)** were lost to follow-up and **9,201 (<1%)** were known to have stopped ART.

An estimated **773,666** adults and **46,281** children (<15 years)¹⁹ were alive on ART by the end of June 2019. This represents **67%** (46,281 / 68,727) and **77%** (773,666 / 998,084) ART coverage among children and adults, respectively.

Figure 7: Patients alive on ART at the end of each quarter, stratified by size of facility (number of patients alive on ART)



¹⁸ Starting from 2019 Q2 reporting period, several high-volume sites were involved in a massive come-back to care campaign. This is where sites reviewed all cumulative defaulters and re-classified them into transfer-outs, stopped and died. It is impossible to come up with 2019 Q3 incident transfer-outs.

¹⁹ The total national number of ART patients with current age <15 years is extrapolated from the (5.6%) of all patients at EMR sites who were <15 years at the end of Q2 2019.

Figure 7 shows the increase of patients alive on ART by the end of each quarter, stratified by facility volume. The net increase of **18,079** patients alive on ART between April and June 2019 was higher than last quarter. **Figure 7** 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 June 2019, **44%** of the national ART patient cohort was in care at sites with fewer than 2,000 patients.

Figure 8

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)

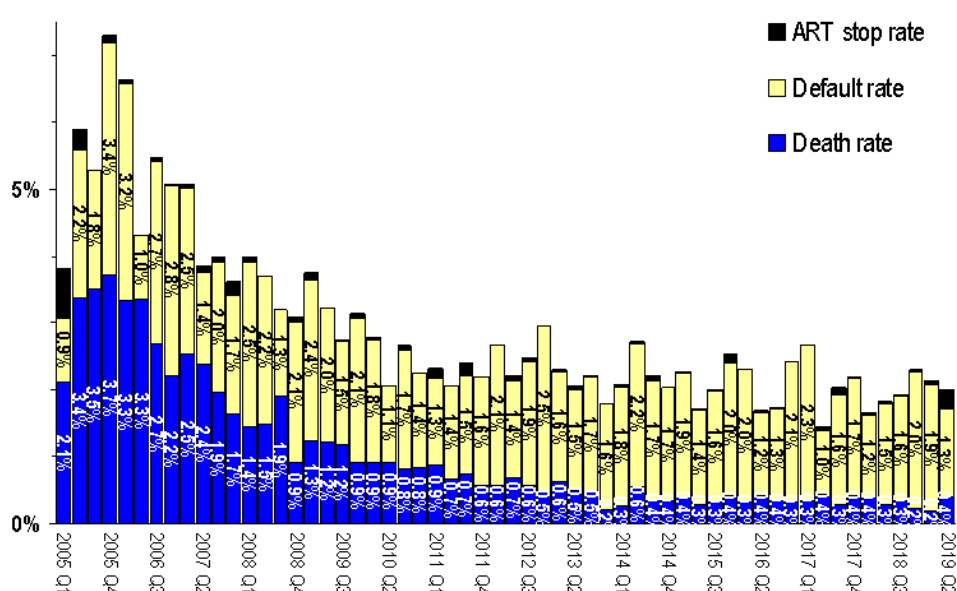


Figure 8 shows the considerable decrease of ART drop-out rates since the start of the national program, most of which was contributed by reduction in mortality. Quarterly defaulter rates appeared to have stabilized around 1.8% over the last 5 years. However, this quarter there has been a slight decrease in the defaulter rates (1.3%) as compared to the 2% and 1.9% for 2018 Q4 and 2019 Q1 respectively. Loss to follow-up ('defaulters') include undocumented 'silent' transfers, undocumented mortality and patients actually stopping treatment. Efforts to harmonize strategies for patient retention are currently ongoing, including national standard operating procedures (SOPs) and tools for linkage and retention aiming to better track patients who miss appointment and document outcomes.

At national level, there were **3,283** new deaths, **10,695** new defaulters and **2,195** new confirmed stops in Q2 2019. This translates into a quarterly death rate of **0.4%** and a defaulter rate of **1.3 %** among the patients alive and on treatment in this quarter. The stop rate has increased from 0.06 % in 2019 Q1 to 0.17% in 2019 Q2 which is likely attributed to misclassification of outcomes from the EMR sites.

Figure 9

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)

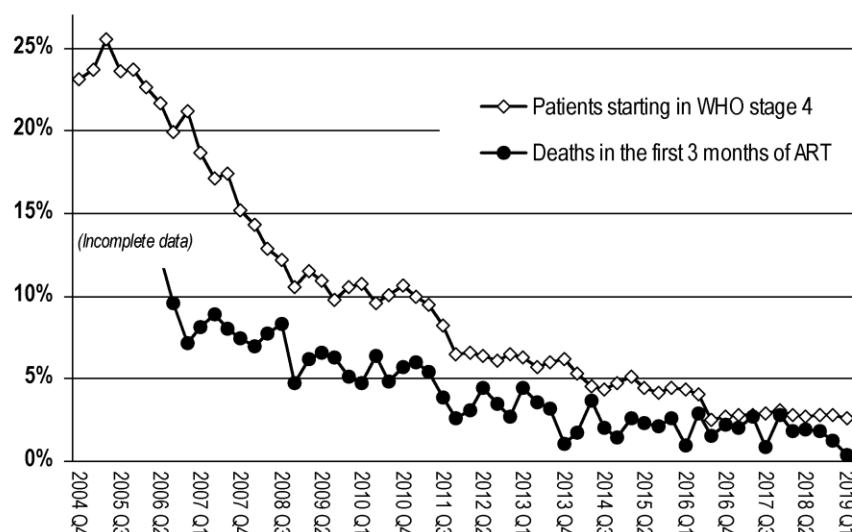


Figure 9 shows the considerable decline in **early mortality** since the start of the program. In Q2 2006, 22% of patients started ART in WHO stage 4 and 12% of all new patients died within the first 3 months of ART. Early mortality on ART has since declined significantly as patients were diagnosed and 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.

11.4 ART Cohort Survival Analysis

A 12 month ‘**cohort outcome survival analysis**’ was conducted for patients registered in Q2 of 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 Q2 2018. A further subgroup analysis was done for women who started ART under **Option B+** Q4 of 2018.

70% of adults and **76% of children** were retained alive on ART after 12 months on treatment. Retention was slightly lower for adults (72%) but slightly higher for children (75%) 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.²⁰

²⁰ Koole, O., Houben, R. M. G. J., Mzembe, T., Van Boeckel, T. P., Kayange, M., Jahn, A., Crampin, A. C. (2014). Improved retention of patients starting antiretroviral treatment in Karonga District, northern Malawi, 2005-2012. *Journal of Acquired Immune Deficiency Syndromes* (2014), 67(1), e27–33. doi:10.1097/QAI.0000000000000252

6-month group cohort survival outcomes were known for **6,256** women registered as having started ART under Option B+ in Q3 2018. This exceeds by 394 (6%) the number of women registered under Option B+ in the quarterly cohort analysis in Q3 2018. This discrepancy is likely due to errors in data abstraction.²¹ The 7,010 women in this cohort survival analysis include 694 (10%) women who transferred between sites. These transfers are double counted and discounted from the denominator (6,316) for the calculation of retention rates.

4,334 (78%) women in this cohort were retained at 6 months after registration. Of those not retained, **1,141 (94%)** were lost to follow-up, **21 (2%)** were known to have stopped ART and **52 (2%)** were known to have died.

12-month group cohort survival outcomes were known for 6,758 women registered as having started ART under Option B+ in Q2 2018. This exceeds by 968 (14%) the number of women registered under Option B+ in the quarterly cohort analysis in Q2 2018. This discrepancy is likely due to errors in data abstraction.²² The **6,758** women in this cohort survival analysis include 886 (13%) women who transferred between sites. These transfers are double counted and discounted from the denominator (**5,872**) for the calculation of retention rates.

4,126 (70%) of women in this cohort were retained at 12 months after registration. **1,630 (93%)** of those not retained were lost to follow-up, **29 (2%)** were known to have stopped ART and **87 (5%)** were known to have died.

²¹ 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.

²² 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 Q2 (Quarter)

6 month survival OptionB+

Survival and retention in ART program

*

ART cohort registration group outcomes

Total ART clinic registrations	6,256	100%
Transfers out (double counted)	708	11%
Total not transferred out (patients in cohort)	5,548	89%
Total alive on ART	4,334	78%
Total not retained	1,214	22%
Defaulted	1,141	94%
Stopped ART	21	2%
Died	52	4%

12 month survival OptionB+

Survival and retention in ART program

*

ART cohort registration group outcomes

Total ART clinic registrations	6,758	100%
Transfers out (double counted)	886	13%
Total not transferred out (patients in cohort)	5,872	87%
Total alive on ART	4,126	70%
Total not retained	1,746	30%
Defaulted	1,630	93%
Stopped ART	29	2%
Died	87	5%

11.4.1 Secondary outcomes of patients retained on ART

819,947 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

791,146 (96%) of patients were on first line regimens. The number of patients on 2nd line ART increased by 2,342 from 24,220 in the previous quarter, reaching **26,562 (3%)** of patients on ART at the end of Q2. **2,239 (<1%)** patients were on non-standard regimens. Non-standard regimens are not necessarily substandard regimens and include patients continuing an ART regimen that was started outside Malawi, patients in research programmes and patients in specialist care.

Among patients on first line regimens, **21,739 (3%)** were on paediatric formulations and **20,716 (95%)** of these were on the standard first line for children (regimen 2P: AZT/3TC/NVP). The majority of patients on 1st line ART had transitioned from regimen **5A** (tenofovir / lamivudine / efavirenz) **323,124 (42%)** to the new standard first line regimen **13A** (tenofovir / lamivudine / dolutegravir) **422,245 (55%)**.

Adherence to ART

Facilities are doing very well documenting patient adherence. **781,358 (95%)** of all patients retained in care had documented the number of missed doses at each visit and **496,079 (63%)**

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.

ART Side Effects

815,598 (99%) patients on ART had information on drug side effects documented at their last clinic visit before end of June 2019. **5,204 (<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.

11.4.2 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 was maintaining a bi-annual routine monitoring schedules. The programme revised the routine VL monitoring schedules from bi-annual to annual and this means the schedules are at 6 months and 12 months after ART initiation and every year thereafter.

11.4.3 Facility data from VL Sample Logbooks and High VL Registers

166,731 VL samples were drawn in the reporting period and documented in the facility sample logbook. **156,851 (94%)** of these were for routine/scheduled VL monitoring; **8,690 (5%)** were extraschedular and **1,190 (1%)** were replacements of lost samples. **35%** of the extraschedular samples were targeted (suspected treatment failure) and **65%** 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

89,568 samples were drawn by 665 facilities between October and December 2018 and results were documented for **83,254 (93%)** of these. **34,325 (38%)** results were received at the facility within 4 weeks of sample collection; **39%** were received between 5-8 weeks and **10%** between 9-12 weeks. The remaining **13%** were received after 12 weeks or were still missing. **17%** of patients were notified of their result within 4 weeks of sample collection, **21%** were notified within 5-8 weeks and **13%** within 9-12 weeks. **43,243 (48%)** of 92,260 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.

83,257 (93%) of samples produced valid VL test results. **420 (<1%)** samples were rejected or the results were invalid and **5,891 (7%)** of samples had outstanding or missing results. **73,139 (88%)** results were suppressed below 1000 copies/ml and **10,118(12%)** were high (≥ 1000 copies/ml).

Outcomes from High VL Registers

Between April and June 2019, **10,056** high VL results (≥ 1000 copies/ml) were received at facilities and entered in the High VL Registers. **8,865 (88%)** of these were from routine monitoring samples, **1,011 (10%)** from targeted samples and **180 (2%)** from repeat samples. **5,899 (59%)** patients had completed intensive adherence support by June 2019 and follow-up samples were drawn for **4,516 (45%)**. Valid results were recorded for **3,559 (79%)** of follow-up samples and **39%** of these were re-suppressed (< 1000 copies/ml).

A final treatment decision was available for **3,830** high VL patients. **2,692 (70%)** were maintained on the current regimen, **1,115 (29%)** were switched to second line and **23 (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.

11.4.4 VL Data from the Laboratory Information Management System (LMIS)

The number of VL results produced increased to **138,431 in Q2** from 99,873 in Q1 of 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.

138,431 VL results were dispatched from the labs to 643 sites between April and June 2019. 77 sites accounted for half of all results released this quarter.

21,723 (16%) of 138,431 samples processed were plasma and **116,708 (84%)** were DBS.

Lab	Samples Processed			Turn-around Time (Days) [§]
	Plasma	DBS	Total	
DREAM Blantyre	1,865	5,449	7,314	26
DREAM Balaka	760	10,607	11,367	34
Kamuzu CH	9,839	11,750	21,589	15
Mzimba DH	0	6,986	6,986	15
Mzuzu CH	0	13,695	13,695	21
Nsanje DH	0	10,630	10,630	21
Partners in Hope	2,716	13,981	16,697	22
QECH	4,575	15,690	20,265	40
Thyolo DH	0	7,461	7,461	24
Zomba CH	1,968	20,459	22,427	15
Total	21,723	116,708	138,431	22
§ Median days between sample collection and printing of results in lab				

Kamuzu CH, Queen Elizabeth CH, DREAM Balaka and Zomba CH and Partners in Hope labs produced 56 % of all VL results. The median interval between sample collection and printing of results was **27 days** at the national level, ranging from **15 days** at Zomba CH to **41 days** at Queen Elizabeth CH. The most significant delays occurred between sample receipt and process run in the lab (median 14 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
Routine	104,156	92%	9,650	8%	113,796
Targeted	19,454	82%	4,279	18%	23,733
Other/unk	565	67%	337	37%	902
Total	124,565	90%	14,266	10%	138,431

113,796 (82%) of VL results released this quarter were classified as *routine scheduled*²³. This is **47%** of the estimated 204,987 ART patients passing a VL monitoring milestone this quarter. **23,733 (17%)** of samples were classified as *targeted (suspected treatment failure / repeat)* and for **902 (1%)** the reason for the sample was 'other' or not specified. **92% (104,156)** 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 "3rd 90" was met.

Viral suppression rates were significantly lower for routine samples among children (0-9 yrs: **59%**) and adolescents (10-19 yrs: **74%**) compared with adults in the age groups 20-29, 30-39, 40+ years who had viral suppression rates of **90%, 92%** and **94%**, respectively. 86% of routine VL samples were from adults 20+ years. Patient age was not recorded for 5,835 (5%) of routine samples.

The **23,733** targeted VL results this quarter represent 37% of the 8,787 routine VL results ≥ 1000 copies/ml from the previous quarter. Patients with an initial routine VL result ≥ 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 1,078 samples were marked as *confirmatory (follow-up)* and 887 as *targeted (treatment failure suspected)* on the lab request form. 21,802 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 ≥ 1000 after 3 months. There was a net increase of 2,342 patients on 2nd line ART this quarter which is equivalent to 27% of the 8,787 routine VL results ≥ 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 **61,344 (54%)** of 113,806 routine samples registered on the LIMS and only **43,185 (40%)** 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 **88%, 92%, 92%, 92%, 93%** and **93%** 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 91% and similarly 91% of samples with unknown timing were <1000 copies/ml.

²³ 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.

11.5 TB / HIV Management

4,288 (99%) of 4,318 new TB patients had their HIV status ascertained this quarter and **1,873 (44%)** of these were HIV positive. **1,764 (94%)** 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%.

12 STI Treatment

This quarter, supervision teams collected STI data from 721 out of 928 facilities offering STI management according to the *2013-14 Service Provision Assessment*²⁴ in Malawi. The site-level reports included here may therefore only represent 78% 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 site supervision for the STI program. The complete set of STI program data collected is included in the Appendix.

12.1 Access to STI treatment and coverage

Based on the data collected at the facilities, a total of **101,658** STI cases were treated in Q2 2019. Considering the 77% site-level completeness of reporting, this number is estimated to represent a total of **132,023** STI cases treated. This is equivalent to **55%** of the estimated quarterly 241,725 STI cases in the population (extrapolation from 2015/16 MDHS)²⁵.

Out of **101,658** documented clients treated, **39,945 (39%)** were male and **61,713 (61%)** were female. **10,130 (16%)** of female STI clients were pregnant. **11,736 (29%)** of male STI clients were circumcised. **69,723 (69%)** clients were 25 years and above, **22,543 (22%)** were 20-24 years and **9,392 (9%)** were under 20 years old.

12.2 Client Type and STI History

89,716 (88%) of clients were symptomatic and **11,942 (12%)** were asymptomatic (treated as partners). Among symptomatic clients, **82,747 (92%)** were index cases and **6,969 (8%)** were partners. A total of **27,614** partner notification slips were issued, equivalent to an average of 0.33 slips per index case. Considering the 27,614 partner notification slips issued, **68% (18,911)** of those notified presented to the clinic. **75,399 (74%)** of clients presented with their first lifetime episode of STI, **18,965 (72%)** clients reported to have had an STI more than 3 months ago and **7,294 (28%)** 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.

²⁴ 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>

²⁵ 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.

12.3 HIV Status

HIV status was ascertained for **90,367** (89%) clients and **16,401** (18%) of these were HIV positive. **2,560** (16%) of positives were identified through a new test initiated at the STI clinic, while **13,841** (84%) presented with a documented previous positive HIV test result. **13,235** (96%) 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

12.4 STI Syndromes and Referrals

The most common syndrome was abnormal vaginal discharge (AVD) with **35,313** (32%) cases, followed by urethral discharge (UD, **26,049** cases), genital ulcers (GUD, **13,940** cases) and lower abdominal pain (LAP, **13,978** cases). Serologically confirmed syphilis accounted for 9% 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. **38,321 (45%)** of the 85,257 STI clients with unknown or new negative test result were referred for repeat HTS. **4,230 (133%)** of 3166 new positives and previous positives not on ART were referred for ART. The low ART referral rate is due to protocol deviation among providers.

13 Supply Chain Management of HIV Program Commodities

13.1 Quantification and procurement planning

The program conducted a quarterly quantification review using Q2 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.

13.2 Quarterly supply chain support during Q2 integrated supervision

The supply chain team and Logistics officers drawn from districts and central level provided stock management support at 748 sites during Q2 2019 integrated ART/PMTCT site supervision, where physical inventory was conducted at all sites and ad-hoc mentoring in stock management at facilities. There was a further overall improvement in the logistics management of ARVs and medicines for OI medicines however 40% of facilities had storage management challenge regarding FEFO principle and observation shows communication gap between Pharmacy and Art clinic on stock updates leading to stock outs of Art commodities and recommendations made were as follows; Supervision team to support and mentor custodians of commodities in their facilities on proper stock management and record keeping of all relevant tools, Pharmacy/drugstore to work hand in hand with ART nurses and clinicians to keep abreast of stock availability versus patient numbers as this will inform decision about switching of clients and other related models such as multi-months dispensation limits.

Table 8 shows the total medicine stocks found at the sites and the estimated consumption patterns.

13.3 Availability of standard first line ARVs

791,146 (96%) of the 819,947 patients not transferred out from their site of last registration were on first line adult regimens and **323,124 (42%)** these were on the standard first line regimen (5A: tenofovir / lamivudine / efavirenz) and **422,245 (55%)** on (13A : tenofovir / lamivudine / dolutegravir). The physical stock count carried out during supportive supervision in July 2019 confirmed that all sites with patients on either of these regimens had available stocks. This translates into a stock out rate of 0 % at ART sites with any patients on 5A and 13 A. Stock-out events are invariably short and managed actively through ad-hoc stock relocation between the affected facility and hub site. This is coordinated through the toll-free lines. This healthy supply chain has enabled the program to consistently implement three monthly medicines dispensations for patients without national stock outs.

13.4 Bimonthly distribution of HIV & Malaria Commodities

Two scheduled bimonthly distribution round of HIV & Malaria commodities including laboratory items and cervical cancer equipment (Distribution Rounds 44 and 45) took place during Q2 2019.

Logistics monitoring and supply chain trail visits for distribution round 44 and 45 were conducted at **73 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

logistics tools documentation including use of Daily Activity Registers and completion of stock cards. Challenges and recommendations documented in section 13.2 were similar to those encountered during supply chain trail.

During Q2 2019, the logistics team at the Department of HIV and AIDS coordinated **1846**(70% ARVs; 24% Test kits; 6% Others) **individual commodity transactions** between ART sites to mitigate stock imbalances using the Department toll free lines.

Table 8

Total stocks of HIV program commodities at all sites visited during the 2019 Q2 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 30/07/2019

Inventory unit	Item	Sites with any Stock	Total Physical Stock		Consumption/ Month	Months of Stock *	
			At Sites	In Warehouse		At Sites	Wareh.
tins	ABC / 3TC 120 / 60mg tins (30 tabs)	2	74	320,000	15,474	0.0	20.7
	ABC / 3TC 60 / 30mg tins (60 tabs)	420	27,794		15,474	1.8	
	ABC / 3TC 600 / 300mg tins (30 tabs)	426	29,501	23,054	2,255	13.1	10.2
	ATV / r 300 / 100mg tins (30 tabs)	598	73,694	178,739	19,696	3.7	9.1
	AZT / 3TC / NVP 300 / 150 / 200mg tins (60 tabs)	709	228,578		17,148	13.3	
	AZT / 3TC / NVP 60 / 30 / 50mg tins (60 tabs)	685	274,496	453,079	51,790	5.3	8.7
	AZT / 3TC 300 / 150mg tins (60 tabs)	730	61,525	15,265	14,414	4.3	1.1
	AZT / 3TC 60 / 30mg tins (60 tabs)	604	37,473	18,731	3,158	11.9	5.9
	DRV 600mg tins (60 tabs)	28	593	205	0	0.0	0.0
	DTG 50mg tins (30 tabs)	686	28,882	138,921	2,442	11.8	56.9
	EFV 200mg tins (90 tabs)	207	2,414	4,466	396	6.1	11.3
	EFV 600mg tins (30 tabs)	371	19,681	11,430	485	40.6	23.6
	ETV 100mg tins (120 tabs)	9	92	55	0	0.0	0.0
	LPV / r 100 / 25mg tins (120 tabs)	9	258				
	LPV / r 100 / 25mg tins (60 tabs)	389	21,349	106,187	14,910	1.4	7.1
	LPV / r 200 / 50mg tins (120 tabs)	366	20,798	10,366	1,828	11.4	5.7
	LPV / r 40 / 10mg tins (120 granules)	3	170	16,000			
	LPV / r 40 / 10mg tins (120 pellets)	24	6,352	5,155	0	0.0	0.0
	NVP 200mg tins (60 tabs)	643	58,026		4,448	13.0	
	NVP 50mg tins (60 tabs)	254	9,307	17,803	1,568	5.9	11.4
	r 100mg tins (60 tabs)	14	407		0	0.0	0.0
	RAL 400mg tins (60 tabs)	5	202	80	0	0.0	0.0
	TDF / 3TC / DTG 300 / 300 / 50mg tins (30 tabs)	751	2,865,220	1,797,434	422,245	6.8	4.3
	TDF / 3TC / EFV 300 / 300 / 600mg tins (30 tabs)	753	1,684,509	282,894	323,124	5.2	0.9
	TDF / 3TC 300 / 300mg tins (30 tabs)	740	111,153	220,104	12,896	8.6	17.1
bottles	Fluconazole (Diflucan) 50mg / 5ml bottles (50 ml)	3	97		85	1.1	
	NVP 100mg/ml bottles (100 ml)	623	31,049	97,261	6,749	4.6	14.4
vials	Benzathine Penicillin 1.44g vials (50 each)	409	70,793	133,150	72,090	1.0	1.8
	Bleomycine 15,000IU vials (1 each)	28	8,767	1,510	0	0.0	0.0
	Ceftriaxone 1g vials (10 each)	225	45,146		153,927	0.3	
	Depo-Provera 150mg/1ml vials (25 each)	501	531,802		73,795	7.2	
	Fluconazole (Diflucan) 2mg / 1 ml vials (100 ml)	6	6,799	899	0	0.0	0.0
	Gentamicin 80mg / 2ml vials (50 each)	672	2,020,980		63,194	32.0	
	Streptomycin 1 g vials (50 each)	34	14,925				
	Vincristine 1mg / 1ml vials (1 each)	25	2,821		0	0.0	0.0
tabs	Aciclovir 200mg blister packs (500 tabs)	712	4,513,935		927,867	4.9	
	Azithromycin 500mg blister packs (3 tabs)	495	26,178	1,725	3,999	6.5	0.4
	Ciprofloxacin 500mg blister packs (100 tabs)	696	2,396,999	525,500			
	Clotrimazole 500mg boxes (1 each)	445	29,282	48,622	56,416	0.5	0.9
	Codeine 30mg tins (100 tabs)	9	169,265		0	0.0	0.0
	Cotrimoxazole 100 / 20mg blister packs (1000 tabs)	687	85,402,778	17,322,000	15,656,888	5.5	1.1
	Cotrimoxazole 400 / 80mg tins (1000 tabs)	680	63,918,415		24,333,157	2.6	
	Cotrimoxazole 960mg blister packs (1000 tabs)	748	121,733,285	250,290,000	24,106,441	5.0	10.4
	Doxycycline 100mg tins (1000 tabs)	598	6,454,643		358,621	18.0	
	E thambutol (E) 100 mg blister packs (100 tabs)	161	155,660				
	E thambutol (E) 400 mg blister packs (672 tabs)	12	40,070				
	Erythromycin 250mg tins (100 tabs)	56	67,678		119,525	0.6	
	Erythromycin 250mg tins (1000 tabs)	222	1,076,385	610,000			
	Fluconazole (Diflucan) 200mg tins (28 tabs)	171	1,047,367	176,428	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.
	Ibuprofen 200mg tins (100 tabs)	280	4,729,400		1,243,828	3.8	
	Isoniazid (H) 100mg blister packs (100 tabs)	319	3,021,112		0	0.0	0.0
	Isoniazid (H) 300mg blister packs (672 tabs)	252	46,064,729	7,707,840	0	0.0	0.0
	Isoniazid (H) 300mg tins (1000 tabs)	5	24,912		0	0.0	0.0
	Metronidazole 200mg tins (1000 tabs)	574	10,823,702	11,426,000			
	Morphine 10mg blister packs (60 tabs)	44	282,246		316,973	0.9	
	Pyridoxine 25mg tins (100 tabs)	255	6,769,090	40,039,300	0	0.0	0.0
	RH 150 / 75 mg blister packs (672 tabs)	282	1,127,743				
	RH 75/50mg blister packs (84 tabs)	100	159,297				
	RHE 150 / 75/ 275 mg blister packs (1000 tabs)	5	1,774				
	RHZ 75/50/150mg blister packs (84 tabs)	81	88,689				
	RHZE 150/75/400/275mg blister packs (672 tabs)	299	852,170				
sheets	ART pat. card adult (yellow) Ver6 bundles (50 she	590	345,583				
	ART pat. card paed. (blue) Ver6 bundles (50 shee	357	39,483		46,181	0.9	
	Exposed child card (pink) Ver2 bundles (50 sheet	583	67,878	104,400			
	Family HTC Referral Slip bundles (100 sheets)	491	194,048				
	Polythene sleeve bundles (100 sheets)	58	5,120		17,133	0.3	
	STI Partner Referral Slip bundles (100 sheets)	86	69,647				
tests	DBS kit (filter paper, lancet, etc.) 70ul boxes (50 t	695	286,477	223,950	46,552	6.2	4.8
	Determine HIV1/2 boxes (100 each)	710	1,404,510	2,580,200	266,516	5.3	9.7
	OraQuick HIV Self-test bundles (25 each)	172	111,197	1,332,350	0	0.0	0.0
	SD Bioline Syphilis boxes (30 each)	592	213,486	313,170	0	0.0	0.0
	Uni-Gold HIV1/2 boxes (20 each)	724	283,828	256,720	27,996	10.1	9.2
pieces	Condoms female boxes (1000 each)	521	284,772				
	Condoms male boxes (144 each)	664	41,277,848	37,777,104	9,039,100	4.6	4.2

* '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.

14 Training and Mentoring

14.1 ART/PMTCT

A total of **203** clinicians and nurses were trained in the Clinical HIV Mentoring during Q2 2019. Clinical mentoring visits were done to **234** sites using quality improvement approach. A total of **936** health workers were mentored during the visits

14.2 HIV Testing Services

469 participants were trained in HIV self-Test kits (HIVST) distribution of which 422 were with support from Global Fund and within this group 36 were from government Ministries to support HIVST distribution at formal workplace policy.

As part of scale up of the newly endorsed policy of Voluntary Assisted Partner Notification (VAPN) model of HIV testing scale up, **54** Health Care Workers were oriented in 3 sessions of Extension for Community Healthcare and outcomes (ECHO) initiative. The ECHO initiative is a virtual mentoring platform which is supported by MACRO.

15 Participants in the Q2 2019 Supervision (8-18 July 2019)

Richard Abudul (CO, MOH)	Richard Kamalizeni (Nurse, MOH)	Alice Mdolo (, MOH)
Charles Banda (, MoH)	Blessings Kamanga (Clerk, MOH)	Topcy Mdolo (, MOH)
F Banda (Nurse, MOH)	Maltida Kamanga (, MAFCO)	Fredrick Midian (, Lighthouse)
Knox Banda (TB Zonal Supervisor, MOH)	Saile Kamanga (, MOH)	Dalitso Midiani (PMTCT Officer, MOH)
Laurent Banda (, CCZ)	Alex Kambanga (, MoH)	Portifer Mission (, moh)
Lawrent Banda (, EGPAF)	Mary Kamiza (TB Zonal Supervisor, NTP)	Towera Mjimapemba (, moh)
Leonard Banda (, MoH)	Emmanuel Kampaliro (, MOH)	Chimwemwe Francis Mkandawire (IT Fellow, I-TECH)
Mphonde Banda (, MOH)	Gift Kamphika (MA, MOH)	Taonga Mkandawire (, moh)
Wells Banda (CO, MOH)	Mercy Kamweka (, MOH)	Tawonga Mkandawire (, MoH)
Robert Beston (, MOH)	Cornelius Kang'ombe (, NTP)	Merium Mkangala (, moh)
Wilson Bilal (, moh)	Cornelius Kang'ombe (, NTP)	Lameck Mlauzi (, NTP (MOH))
Thomas Biseck (, MOH)	Annie Kanyemba (Nurse, MOH)	Yvonne Mnjeza (, MOH)
Annie Biza (Nurse, MDF)	Henry Kanyerere (TB/HIV Program Officer, MOH)	Zakaliah Mphande (, CHAM)
Enock Bokola (, NGO)	Saulosi Kanyinji (, MoH)	Joseph Mphasa (, MoH)
Regina Bwanah (, MOH)	Lameck Kaonga (, Lighthouse)	Noel Mphasa (TB Zonal Supervisor, NTP)
Regina Bwanali (, MOH)	Mary Kaponya (, MOH)	Cecilia Mphika (, MOH)
Herbert Chafulumira (, MOH)	Elsie Kasambwe (, I-TECH)	Tryness Mponda (NMT, MOH)
Ephraim Chale (, MoH)	Fredrick Kasanga (Nurse, MOH)	Voster Msutu (, MOH)
Lincy Chalunda (CO, MOH)	Benard Kasinja (CO, I-TECH)	Tiyamike Msyamboza (, other)
Rachel Champiti (, MOH)	Bernald Kasinja (, private)	Egnatius Mtambalika (, DTO)
Raymond Changamire (, Chemonics)	Fortunata Kasongo (, MOH)	Temweka Mtenje (, MoH)
Chikaiko Chibwana (CO, MOH)	Catherine Kassam (Nurse, MOH)	Clement Mtika (CO, MOH, Mzuzu CH)
Maggie Chigona (, MoH)	Margaret Katumbi (Nurse, MOH)	William Mtonga (CO, CHAM)
Margaret Chigona (CO, Blantyre DHO)	Rodrick Kaulere (CO, CHAM (Sister Tereza))	Andraida Mtoseni (Nurse, MOH)
Grace Chikhwya (, MOH)	Absalom Kaunda (CO, MOH, Mzimba DHO)	Ekwala Mubiala (HIV Zonal Supervisor, MOH, UNV)
Kondwani Chikoti (CO, MOH)	William Kaunda (, Salima)	Dave Muhasuwa (, MoH)
Lusayo Chikuta (, Nkhatabay)	Sharon Kawonga (, baylor)	Yamikani Mulore (, MOH)
Verydear Chilapondwa (, MOH)	Jean Kayamba (Nurse, MOH)	Francis Munthali (, COM)
Chimwemwe Chimaliro (, MOH)	Mera Kayira (CO, MOH)	Fainala Muyila (Nurse, MOH)
Spain Chimaliro (, moh)	Daniel Kazingatchire (, MOH)	Tereza Mvula (, MOH)
Tiwonge Chimpandule (, MoH)	Andrew Khozi (, MoH)	Theresa Mvula (, MOH)
Peter Chimphero (CO, MOH)	Sydney Kubwalo (, MoH)	Jeremiah Mwale (CO, EGPAF)
Chikhulupiliro Chimwaza (, MOH)	Aubrey Kudzala (, MOH)	Thomas Mwale (, MOH)
Mathews Chinyama (, moh)	Charles Kwenje (, Moh)	Innocent Mwaluka (, moh)
Yunus Chiosa (, NTP)	Michael Lemeka (, MoH)	Patrick Mwamlima (, MoH)
Diana Chipande (, MOH)	George Lipande (CO, MOH)	Patrick Mwamulima (NMT, MOH)
Grace Chipanga (Nurse, Private)	Bright Lipenga (, MoH)	Golden Mwachunga (MA, Press)
Esnart Chirambo (, MoH)	Jesse Lobeni (Nurse, MOH)	Anne Mwenye (, Private)
Patrick Paul J M Chirwa (TB Zonal Supervisor, NTP)	Duncan Lupiya (CO, MOH)	Tuwepo Mwitha (, MOH)
Stella Chitawo (, MOH)	Promise Mafuleka (, MoH)	Riff Mzava (Nurse, MOH)
Samson Chitsulo (, other)	Wadson Maiden (Nurse, MOH)	Peter Mzumara (ART clinician, MOH)
Brown Chiwandira (MA, MOH)	Chikayiko Majamanda (Nurse, MOH)	Eric Mzungu (, moh)
Madalitso Chosalawa (, MOH)	Mercy Makaika (Nurse, MOH)	Nelson Namchinga (, Thyolo DHO)
Stuart Chuka (CO, MBCA)	Linda Makata (, MOH)	Austins Namondwe (CO, CHAM)
Ackim Chuzu (, MoH)	Ellen Makawa (, MOH)	Nelson Nanchinga (, MOH)
Ruth Deula (, MOH)	Grey Malata (, MOH)	Pepsy Nangwale (Nurse, MOH)
Ruth Deula (, moh)	Thokozani Malimelo (, MoH)	Leonard Ndhlovu (Nurse, MOH)
Peter Donda (CO, Dedza DH)	Beatrice Malonje (Nurse, MOH)	Overton Ndhlovu (, MOH)
Bonaventure Dzanjalimodzi (, MOH)	Limbiso Malunje (, MoH)	Offrey Nduwila (, MOH)
Felix Genti (, MSH)	Clement Manda (, MOH)	Stanley Ngoma (CO, MOH)
Grant Gondwe (, NTP)	Charles Mandambwe (, MoH)	Youngson Ngonya (, MoH)
Paul Gondwe (, MOH)	Relia Mandindi (, Public)	Chisomo Ngwalo (, COM)
Sidder Hambisa (ENM, MOH)	Cecilia Manyawa (Nurse, MOH)	Charles Ngwira (, MoH)
Miriam Hanjahanja (, cham)	Fatsireni Mapulanga (, MOH)	Eunice Ngwira (, MOH)
Rhoda Jamu (, CHAM)	James Maruwo (, MOH)	Beatrice Nindi (, MoH)
Mataya Jeke (, Zomba Central)	Randof Maseya (, MOH)	Trevor Chifundo Nindi (, Balaka DHO)
Lilian Jiah (, EGPAF)	Angela Masumba (, moh)	Dumbo Njera (, MOH)
Joe Jumbe (, MoH)	Jeke Mataya (, moh)	Merium Nkangala (, moh)
Lucky Kabanga (Pharmacist, MOH)	Harry Matecheta (Nurse, LIGHTHOUSE)	Donald Nkhalango (, PIH)
John Kabichi (CO, MOH)	Steven Matewere (, Chichiri Prison Clinic)	Grace Juma Nkhata (Nurse, MOH)
Rabson Kachala (, MOH)	Martin Maulidi (CO, I-TECH)	Angela Nkhoma (Nurse, MOH)
Francis Kachali (, MoH)	Rose Maviko (Nurse, Limbe HC)	Hannah Nkhoma (, MOH)
Lilian Kachali (Nurse, MOH)	Yanjanani Mawindo (, MoH)	Joe Nkhonjera (, moh)
Arlene Kachapira (, MoH)	Benjamin Mazalo (CO, SUCOMA Clinic)	Vitu Nkhunga (, MOH)
Golgen Kachepatsonga (, MoH)	Felix Mbalale (CO, MOH)	Sam Nowa (Pharmacist, MOH)
Vera Kajawa (Nurse, MOH)	Nyuma Mbale (, MoH)	George Nsitu (, MOH)
Bannet Kalebe (Logistics, MOH)	Nyuma Mbale (, MOH)	Evaristo Nthete (, moh)
Enipher Kalengamaliro (, MOH)	Loyd Mbaza (Nurse, MOH)	Judith Ntopa (Nurse, Cobbe Barracks)
Joseph Kalino (Clerk, CHAM)	Kingsley Mbewa (CO, MOH)	Jonathan Nyasulu (, MOH)
Agnes Kalitsiro (Nurse, Mlambe Mission Hospital)	Stony Mbiriyawanda (, MOH)	Jotham Nyasulu (, MOH)
Ashani Kaliza (, MOH)		Paul Nyasulu (CO, I-TECH)

Misonzi Nyatuka (Nurse, MOH)
 Steven Nyika (, MOH)
 Feliya Nyirenda (, Machinga)
 Janet Nyirenda (, MOH)
 Mabvuto Nyirenda (, MOH)
 Michael Nyirenda (, MOH)
 Mike Nyirenda (CO, Lighthouse)
 Chrissy Padoko (, MOH)
 Laura Pangani (, moh)
 Gift Pelani (, Baylor)
 Paul Petersen (, MoH)
 Mackson Phiri (, PIH)
 Tifera Phiri (, moh)
 Stanley Phombo (Nurse, MOH)
 Enock Phwitiko (, MoH)
 Kelvin Rambiki (Clinic Coordinator, Private)
 Beston Robert (, MOH)

Enock Sabola (Nurse, MOH)
 Alice Sajeni (, moh)
 Dorica Sambo (Nurse, MOH)
 George Sankhulani (CO, Dignitas)
 Charles F Sekani (CO, EGPAF)
 George Shaba (, MoH)
 Kondwani Shaba (, MoH)
 Gabriel Simwanza (, MOH)
 Aleka Simwela (, MOH)
 Juliana Soko (ARV nurse, MOH,
 Livingstonia MH)
 Joel Sosola (, MOH)
 Issa Sulemani (, MOH)
 Mark Suzumire (CO, MOH)
 Bruce Tambwali (Nurse, NGO)
 Jean Tazie (, I-TECH)
 Andrea Tembo (Nurse, Dignitas)

Harrison Tembo (CO, MOH)
 Vuso Tembo (, MoH)
 Edith Thaulo (Nurse, MOH)
 Tadzinenani Thawe (, Lighthouse)
 Miriam Thindwa (Clinician, Limbe H/C)
 Matilda Thomas (, MoH)
 Harry Tsapa (CO, MOH)
 Jimmy Villiera (, MOH)
 Linda Vito (, MOH)
 Maiden Wadson (, MOH)
 Mwiza Wankhama (, CHAM)
 Lloyd Wella (CO, MOH)
 Oscar Witman (, MOH)
 Moses Zawola (, 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.

25th September 2019

16 Appendix (Full National HIV Program Data)

HTC site report

Malawi (National)

2019 Q2 (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	967,030	100%
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Sex

Males tested	329,633	34%
Females tested	637,397	66%
Females non-pregnant	434,590	68%
Females pregnant	202,807	32%

Age

Children 0-14 yrs	98,009	10%
Children below 12 mths (Age group A)	2,928	3%
Children 12 mths - 14 yrs (Age group B)	95,081	97%
Adults 15+ years	869,021	90%
Young adults 15-24 years (Age group C)	373,319	43%
Older adults 25+ yrs (Age group D)	495,702	57%

HTC access type

PITC	710,554	73%
Family Referral Slip (FRS)	15,432	2%
Other (VCT, etc.) HTC access	241,044	25%

HTC first time / repeat

Never tested before	196,475	20%
Previously accessed HTC	770,555	80%
Last negative	737,164	96%
Last positive	32,403	4%
Last exposed infant	355	0%
Last inconclusive	633	0%

Counseling session type / Partner present

Counseled with partner / partner present	200,728	21%
Counseled alone / Partner not present	766,302	79%

Outcome summary (HIV test)

Single test negative	905,105	94%
Single test positive	0	0%
Test 1&2 negative	585	0%
Test 1&2 positive	59,377	6%
Test 1&2 discordant	1,963	0%

HTC site report

Malawi (National)

2019 Q2 (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	934,786	97%
New negative	905,325	97%
New positive	27,487	3%
New positive (non-sex dissag)	3,860	14%
New positive (dissag by sex)	23,627	86%
New positive male	10,008	42%
New positive female	13,619	58%
New inconclusive	1,827	0%
New exposed infants	147	0%
Confirmatory results (previous positive clients)	32,244	3%
Confirmatory positive	32,051	99%
Confirmatory positive (non-sex dissag)	4,775	15%
Confirmatory positive (dissag by sex)	27,276	85%
Confirmatory positive male	11,285	41%
Confirmatory positive female	15,991	59%
Confirmatory inconclusive	193	1%

Partner / Family HTC referral slips

Sum of slips given	54,512	100%
Total clients presenting with referral slip	15,432	28%
Total failed referrals (slips not returned)	39,080	72%

Clients tested in the community

HTC client details

*

Total HTC clients served

Total HIV tested	33,382	100%
------------------	--------	------

Sex

Males tested	11,421	34%
Females tested	21,961	66%
Females non-pregnant	18,149	83%
Females pregnant	3,812	17%

Age

Children 0-14 yrs	4,961	15%
Children below 12 mths (Age group A)	16	0%
Children 12 mths - 14 yrs (Age group B)	4,945	100%
Adults 15+ years	28,421	85%
Young adults 15-24 years (Age group C)	13,953	49%
Older adults 25+ yrs (Age group D)	14,468	51%

HTC access type

PITC	13,835	41%
Family Referral Slip (FRS)	1,246	4%
Other (VCT, etc.) HTC access	18,301	55%

HTC site report

Malawi (National)

2019 Q2 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

HTC client details

*

HTC first time / repeat

Never tested before	9,536	29%
Previously accessed HTC	23,846	71%
Last negative	22,787	96%
Last positive	1,049	4%
Last exposed infant	0	0%
Last inconclusive	10	0%

Counseling session type / Partner present

Counseled with partner / partner present	1,849	6%
Counseled alone / Partner not present	31,533	94%

Outcome summary (HIV test)

Single test negative	31,007	93%
Single test positive	0	0%
Test 1&2 negative	10	0%
Test 1&2 positive	2,325	7%
Test 1&2 discordant	40	0%

Final result given to client

Results among clients never tested / last negative	32,241	97%
New negative	31,008	96%
New positive	1,202	4%
New positive (non-sex dissag)	295	25%
New positive (dissag by sex)	907	75%
New positive male	382	42%
New positive female	525	58%
New inconclusive	31	0%
New exposed infants	0	0%
Confirmatory results (previous positive clients)	1,141	3%
Confirmatory positive	1,137	100%
Confirmatory positive (non-sex dissag)	312	27%
Confirmatory positive (dissag by sex)	825	73%
Confirmatory positive male	337	41%
Confirmatory positive female	488	59%
Confirmatory inconclusive	4	0%

Partner / Family HTC referral slips

Sum of slips given	1,491	100%
Total clients presenting with referral slip	1,246	84%
Total failed referrals (slips not returned)	245	16%

Clients at stand-alone HTC sites

HTC client details

*

Total HTC clients served

Total HIV tested	6,884	100%
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Sex

Males tested	3,750	54%
Females tested	3,134	46%
Females non-pregnant	2,084	66%
Females pregnant	1,050	34%

HTC site report

Malawi (National)

2019 Q2 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

HTC client details

*

Age

Children 0-14 yrs	416	6%
Children below 12 mths (Age group A)	7	2%
Children 12 mths - 14 yrs (Age group B)	409	98%
Adults 15+ years	6,468	94%
Young adults 15-24 years (Age group C)	2,606	40%
Older adults 25+ yrs (Age group D)	3,862	60%

HTC access type

PITC	3,108	45%
Family Referral Slip (FRS)	173	3%
Other (VCT, etc.) HTC access	3,603	52%

HTC first time / repeat

Never tested before	1,820	26%
Previously accessed HTC	5,064	74%
Last negative	4,901	97%
Last positive	162	3%
Last exposed infant	1	0%
Last inconclusive	0	0%

Counseling session type / Partner present

Counseled with partner / partner present	1,810	26%
Counseled alone / Partner not present	5,074	74%

Outcome summary (HIV test)

Single test negative	6,489	94%
Single test positive	0	0%
Test 1&2 negative	0	0%
Test 1&2 positive	383	6%
Test 1&2 discordant	12	0%

Final result given to client

Results among clients never tested / last negative	6,726	98%
New negative	6,494	97%
New positive	223	3%
New positive (non-sex dissag)	58	26%
New positive (dissag by sex)	165	74%
New positive male	75	45%
New positive female	90	55%
New inconclusive	7	0%
New exposed infants	2	0%
Confirmatory results (previous positive clients)	158	2%
Confirmatory positive	155	98%
Confirmatory positive (non-sex dissag)	62	40%
Confirmatory positive (dissag by sex)	93	60%
Confirmatory positive male	41	44%
Confirmatory positive female	52	56%
Confirmatory inconclusive	3	2%

HTC site report

Malawi (National)

2019 Q2 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

HTC client details

*

Partner / Family HTC referral slips

Sum of slips given		1,020	100%
	Total clients presenting with referral slip	173	17%
	Total failed referrals (slips not returned)	847	83%

Blood safety

Malawi (National)

2019 Q2 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

Infect. disease screening among potential donors

*

HIV screening

HIV testing not done	1,798	25%
Tested for HIV	5,424	75%
HIV negative	5,166	95%
HIV positive	258	5%

Hepatitis B screening

HepB testing not done	1,622	22%
Tested for Hepatitis B	5,600	78%
HepB Negative	5,333	95%
HepB Positive	267	5%

Hepatitis C screening

HepC testing not done	3,310	46%
Tested for Hepatitis C	3,912	54%
HepC Negative	3,565	91%
HepC Positive	347	9%

Syphilis screening

Syphilis testing not done	1,582	22%
Tested for Syphilis	5,640	78%
Syphilis Negative	5,361	95%
Syphilis Positive	279	5%

Malaria screening

Malaria testing not done	2,207	31%
Tested for malaria	5,015	69%
Malaria Negative	4,455	89%
Malaria Positive	560	11%

Summary screening outcome

Not donated	2,794	39%
Donated	4,428	61%
Screened for at least HIV, HepB and syphilis	4,045	91%
Screened for HIV, HepB, HepC, Syphilis, Malaria	3,074	76%
Screened for HIV, HepB, Syphilis	971	24%
Screened for HIV, HepB	1	0%
Screened for HIV only	1	0%
Screened with any other combination of tests	381	9%

Cross-matching report

*

Blood group typing (for units and patients)

Total blood group typing done	24,430	100%
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Blood units cross-matched (by source)

Total blood units cross-matched	15,470	100%
Total units from MBTS (estimated)	11,042	71%
Total units from replacement donors	4,428	29%

Blood units cross-matched by patient group

Units cross-matched for maternity	3,181	21%
Units cross-matched for paediatrics	4,811	31%
Units cross-matched for other ward	7,478	48%

Blood safety

Malawi (National)

2019 Q2 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

Cross-matching report

*

Transfusion reactions

Units transfused without adverse events	15,377	99%
Units with suspected transfusion reactions	44	0%
Units with confirmed transfusion reactions	49	0%

HIV exposed child follow-up

Malawi (National)

2019 Q2 (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	10,852	100%
---------------------------	--------	------

CPT status

On CPT	9,295	86%
Not on CPT	1,557	14%

HIV status

Current HIV infection status unknown	2,645	24%
HIV infection not confirmed, not ART eligible	2,636	100%
HIV infection not confirmed, ART eligible (PSHD)	9	0%
Current HIV infection status known	8,207	76%
Confirmed not infected	8,131	99%
Confirmed infected (ART eligible)	76	1%

ART eligibility summary

Not eligible for ART	10,767	99%
ART eligible	85	1%
ART not initiated	21	25%
Initiated ART	64	75%

Primary follow-up outcome

Discharged uninfected	18	0%
Continue follow-up	9,325	95%
Started ART	64	1%
Defaulted	389	4%
Died	60	1%

Transfers between sites

Total not transferred out	9,856	91%
Transferred out	996	9%

Age 12 months

Age cohort outcomes

*

Total children in birth cohort

Total children registered	12,123	100%
---------------------------	--------	------

CPT status

On CPT	9,137	75%
Not on CPT	2,986	25%

HIV status

Current HIV infection status unknown	3,239	27%
HIV infection not confirmed, not ART eligible	3,187	98%
HIV infection not confirmed, ART eligible (PSHD)	52	2%
Current HIV infection status known	8,884	73%
Confirmed not infected	8,670	98%
Confirmed infected (ART eligible)	214	2%

HIV exposed child follow-up

Malawi (National)

2019 Q2 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

Age cohort outcomes

*

ART eligibility summary

Not eligible for ART	11,857	98%
ART eligible	266	2%
ART not initiated	66	25%
Initiated ART	200	75%

Primary follow-up outcome

Discharged uninfected	62	1%
Continue follow-up	9,109	84%
Started ART	200	2%
Defaulted	1,367	13%
Died	135	1%

Transfers between sites

Total not transferred out	10,873	90%
Transferred out	1,250	10%

Age 24 months

Age cohort outcomes

*

Total children in birth cohort

Total children registered	11,185	100%
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CPT status

On CPT	374	3%
Not on CPT	10,811	97%

HIV status

Current HIV infection status unknown	3,375	30%
HIV infection not confirmed, not ART eligible	3,365	100%
HIV infection not confirmed, ART eligible (PSHD)	10	0%
Current HIV infection status known	7,810	70%
Confirmed not infected	7,521	96%
Confirmed infected (ART eligible)	289	4%

ART eligibility summary

Not eligible for ART	10,886	97%
ART eligible	299	3%
ART not initiated	4	1%
Initiated ART	295	99%

Primary follow-up outcome

Discharged uninfected	7,306	72%
Continue follow-up	290	3%
Started ART	295	3%
Defaulted	2,082	21%
Died	121	1%

Transfers between sites

Total not transferred out	10,094	90%
Transferred out	1,091	10%

Antenatal Care

Malawi (National)

2019 Q2 (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	165,689	100%
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ANC cohort analysis

*

HIV status ascertainment

HIV status not ascertained	4,829	3%
HIV status ascertained	160,860	97%
Valid previous test result	11,094	7%
Previous negative	3,212	29%
Previous positive	7,882	71%
New test at ANC	149,766	93%
New negative	146,818	98%
New positive	2,948	2%

HIV status summary

Total women HIV negative	150,030	93%
Total women HIV positive	10,830	7%

PMTCT regimen mother

No ARVs	348	3%
Any ARVs	10,482	97%
ART (by time of initiation)	10,482	100%
Already on ART when starting ANC	7,795	74%
Started ART at 0-27 weeks of pregnancy	2,329	22%
Started ART at 28+ weeks of preg.	358	3%

Maternity

Malawi (National)

2019 Q2 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

Maternal details

*

Admissions in the reporting period

Total admissions (referrals double-counted)	142,538	100%
Not referred to other site (total women)	134,286	94%
Referred out before delivery (multiple admissions)	8,252	6%

HIV status ascertainment

HIV status not ascertained	8,478	6%
HIV status ascertained	134,297	94%
Valid previous test result	17,903	13%
Previous negative	8,551	48%
Previous positive	9,352	52%
New test at maternity	116,394	87%
New negative	115,901	100%
New positive	493	0%

HIV status summary

Total women HIV negative	124,452	93%
Total women HIV positive	9,845	7%

ARVs during pregnancy (among HIV pos)

No ARV in pregnancy	197	2%
Any ARVs	9,648	98%
ART (by time of initiation)	9,648	100%
ART initiated before pregnancy	8,981	93%
ART initiated in 1st / 2nd trimester	339	4%
ART initiated in 3rd trimester	160	2%
ART initiated during labour	168	2%

Infant details

*

Single babies / multiple deliveries

Total babies delivered	137,146	100%
Single babies	132,445	97%
Twin / multiple babies	4,701	3%

Infant survival

Total live births	134,975	98%
Discharged alive	134,121	99%
Neonatal deaths	854	1%
Stillbirths	2,171	2%
Stillbirth, fresh	1,083	50%
Stillbirth, macerated	1,088	50%

HIV exposure / ARV proph. (among discharged alive)

Infants with unknown HIV exposure status	5,130	4%
Infants with known HIV exposure status	128,991	96%
Not HIV exposed	119,954	93%
HIV exposed	9,037	7%
Received no ARVs	581	6%
Received ARVs	8,456	94%
Nevirapine	8,456	100%

ART cohort analysis

Malawi (National)

2019 Q2 (Quarter)

Registration details

*

ART clinic registrations

Total ART clinic registrations	37,507	100%
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Registration type

ART initiations, first time (total patients)	28,318	76%
ART initiations, first time (non sex-disagg.)	2,267	8%
ART initiations, first time (by sex)	26,051	92%
ART initiations, first time, males	10,659	41%
ART initiations, first time, females	15,392	59%
ART initiations, first time, females non-pregnant	10,956	71%
ART initiations, first time, females pregnant	4,436	29%
ART re-initiations	453	1%
ART transfers in	8,736	23%

Sex

Males	14,919	40%
Females	22,588	60%
Non-pregnant	17,938	79%
Pregnant	4,650	21%

Age at ART initiation

Adults 15+ yrs	35,061	93%
Children 0-14 yrs	2,446	7%
Children 2-14 yrs	1,852	76%
Children below 24 mths	594	24%

Reason for starting ART

Presumed severe HIV Disease	36	0%
Confirmed HIV infection	37,471	100%
WHO stage 1 or 2	32,896	88%
CD4 below threshold	1,342	4%
CD4 unknown or >threshold	31,554	96%
PCR infants	72	0%
Children 12-59 mths	509	2%
Pregnant women	4,493	14%
Breastfeeding mothers	1,297	4%
Asymptomatic / mild	25,183	80%
WHO stage 3	3,534	9%
WHO stage 4	929	2%
Unknown / reason outside of guidelines	112	0%

TB at ART initiation

Never TB / TB > 24 months ago	36,869	98%
TB within the last 24 months	370	1%
Current episode of TB	268	1%

Kaposi's sarcoma at ART initiation

No KS	37,416	100%
Patients with KS	91	0%

ART cohort analysis

Malawi (National)

2019 Q2 (Cumulative)

Registration details

*

ART clinic registrations

Total ART clinic registrations	1,677,847	100%
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Registration type

ART initiations, first time (total patients)	1,316,569	78%
ART initiations, first time (non sex-disagg.)	1,306,867	99%
ART initiations, first time (by sex)	9,702	1%
ART initiations, first time, males	4,060	42%
ART initiations, first time, females	5,642	58%
ART initiations, first time, females non-pregnant	4,392	78%
ART initiations, first time, females pregnant	1,250	22%
ART re-initiations	30,615	2%
ART transfers in	330,663	20%

Sex

Males	622,770	37%
Females	1,055,077	63%
Non-pregnant	847,715	80%
Pregnant	207,362	20%

Age at ART initiation

Adults 15+ yrs	1,539,290	92%
Children 0-14 yrs	138,557	8%
Children 2-14 yrs	106,719	77%
Children below 24 mths	31,838	23%

Reason for starting ART

Presumed severe HIV Disease	4,400	0%
Confirmed HIV infection	1,673,447	100%
WHO stage 1 or 2	960,855	57%
CD4 below threshold	360,067	37%
CD4 unknown or >threshold	600,788	63%
PCR infants	4,116	1%
Children 12-59 mths	19,023	3%
Pregnant women	191,105	32%
Breastfeeding mothers	63,242	11%
Asymptomatic / mild	323,302	54%
WHO stage 3	567,782	34%
WHO stage 4	130,130	8%
Unknown / reason outside of guidelines	14,680	1%

TB at ART initiation

Never TB / TB > 24 months ago	1,603,555	96%
TB within the last 24 months	37,782	2%
Current episode of TB	36,510	2%

Kaposi's sarcoma at ART initiation

No KS	1,652,645	98%
Patients with KS	25,202	2%

ART cohort analysis

Malawi (National)

2019 Q2 (Cumulative)

ART outcomes

*

Primary follow-up outcomes

Total alive on ART	844,087	63%
Alive on ART at site of last registration	819,947	97%
ART patients in transit between sites	24,140	3%
Defaulted	376,420	28%
Stopped ART	9,201	1%
Total died	117,495	9%
Died month 1	23,548	20%
Died month 2	14,231	12%
Died month 3	9,232	8%
Died month 4+	70,484	60%

Transfers between sites

Total not transferred out	1,323,044	79%
Transferred out	354,803	21%

ART regimens

First line regimens	791,146	96%
Adult formulation	769,407	97%
Regimen 0A	808	0%
Regimen 2A	17,148	2%
Regimen 4A	485	0%
Regimen 5A	323,124	42%
Regimen 6A	4,448	1%
Regimen 13A	422,245	55%
Regimen 14A	511	0%
Regimen 15A	638	0%
Paed. formulation	21,739	3%
Regimen 0P	627	3%
Regimen 2P	20,716	95%
Regimen 4P	396	2%
Second line regimens	26,562	3%
Adult formulation	21,592	81%
Regimen 7A	7,121	33%
Regimen 8A	12,575	58%
Regimen 9A	1,447	7%
Regimen 10A	177	1%
Regimen 11A	204	1%
Regimen 12A	68	0%
Paed. Formulation	4,970	19%
Regimen 9P	4,531	91%
Regimen 11P	439	9%
Other regimen (adult / paed)	2,239	0%

Adherence

Adherence unknown (not recorded)	38,589	5%
Adherence recorded	781,358	95%
0-3 doses missed	496,079	63%
4+ doses missed	285,279	37%

ART cohort analysis

Malawi (National)

2019 Q2 (Cumulative)

ART outcomes

*

ART side effects

Side effects unknown (not recorded)	4,349	1%
Side effects recorded	815,598	99%
No side effects	810,394	99%
Any side effects	5,204	1%

Current TB status among ART patients (ICF)

ICF not done (Current TB status unknown/ not circ)	10,475	1%
ICF done	809,472	99%
TB not suspected	800,856	99%
TB suspected	6,297	1%
TB confirmed	2,319	0%
TB confirmed, not on treatment	50	2%
TB confirmed, on TB treatment	2,269	98%

Pregnant / Breastfeeding

Pregnant females	819,947	100%
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ART survival analysis

Malawi (National)

2019 Q2 (Quarter)

12 month survival all ages

Survival and retention in ART program

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ART cohort registration group outcomes

Total ART clinic registrations	40,428	100%
Transfers out (double counted)	5,733	14%
Total not transferred out (patients in cohort)	34,695	86%
Total alive on ART	24,317	70%
Total not retained	10,378	30%
Defaulted	9,375	90%
Stopped ART	138	1%
Died	865	8%

Viral load monitoring cohort report

Malawi (National)

2019 Q2 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

VL samples collected in the reporting period

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VL samples collected

Total VL samples	166,731	100%
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Reason for VL test

Routine / scheduled monitoring	156,851	94%
Extra-schedular	8,690	5%
Targeted (clinical suspicion of failure)	3,028	35%
Follow-up after high VL	5,662	65%
Replacement of lost sample / missing result	1,190	1%

Results for VL samples collected 6 months ago

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Total VL samples with outcomes

Total VL samples collected 6 months ago	89,568	100%
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VL test results

Valid results	83,257	93%
<1000 copies / ml	73,139	88%
1000+ copies / ml	10,118	12%
Rejected samples / invalid results	420	0%
Missing / outstanding results	5,891	7%

Result transmission type

Paper results	81,162	97%
Electronic results	2,828	3%

Time from sample collection to receipt of results

0-4 Weeks	34,325	38%
5-8 Weeks	35,034	39%
9-12 Weeks	8,695	10%
13+ Weeks / still missing	11,514	13%

Time from sample collection to client notification

0-4 Weeks	15,352	17%
5-8 Weeks	19,244	21%
9-12 Weeks	11,729	13%
13+ Weeks / pending	43,243	48%

Patients with high VL: outcome after 6 months

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Patients in high VL cohort

Total high VL patients evaluated after 6 months	10,193	100%
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Initial high VL: reason for test

Routine / scheduled monitoring	9,171	90%
Targeted (clinical suspicion of failure)	856	8%
Repeat sample	166	2%

Intensive adherence counselling

3 Sessions completed	5,116	50%
Sessions not completed	5,077	50%

Viral load monitoring cohort report

Malawi (National)

2019 Q2 (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	4,239	42%
Valid results	3,285	77%
<1000 copies / ml	1,514	46%
1000+ copies / ml	1,771	54%
Rejected samples / invalid results	1	0%
Missing / outstanding results	953	22%
Follow-up sample pending	5,954	58%

Preliminary opinion

Conclusion made	3,428	34%
Continue current regimen	2,295	67%
Switch to 2nd line ART	1,133	33%
Conclusion pending	6,765	66%

Final treatment decision (2nd line prescriber)

Decision made	3,061	30%
Continue current regimen	1,938	63%
Switch to 2nd line ART	1,078	35%
Refer to HIV specialist	45	1%
Decision pending	7,132	70%

STI site report

Malawi (National)

2019 Q2 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

STI clients treated in the reporting period

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Total STI clients

Total STI clients treated	101,658	100%
Index patients treated (symptomatic)	82,747	81%
Partners treated	18,911	19%

Sex

Males	39,945	39%
Males Non-circumcised	28,209	71%
Males Circumcised	11,736	29%
Females	61,713	61%
Non-pregnant	51,583	84%
Pregnant	10,130	16%

Age group

Age group A (0-19 years)	9,392	9%
Age group B (20-24 years)	22,543	22%
Age group C (25+ years)	69,723	69%

Client type

Symptomatic cases	89,716	88%
Index cases	82,747	92%
Partners symptomatic	6,969	8%
Partners asymptomatic	11,942	12%

STI treatment history

Never treated for STI	75,399	74%
Previously treated for STI	26,259	26%
Old >3 months ago	18,965	72%
Recent ≤3 months ago	7,294	28%

STI syndromic diagnosis

GUD	13,940	13%
UD	26,049	24%
AVD	35,313	32%
Low risk	12,146	34%
High risk	23,167	66%
LAP	13,978	13%
SS	1,151	1%
BU	748	1%
BA	1,452	1%
NC	292	0%
Genital Warts	701	1%
Syphilis RPR VDRL	10,184	9%
Other STI	6,240	6%

STI partner notification

Total partner notification slips issued	27,614	100%
Total partners returned	18,911	68%
Total partners not seen	8,703	32%

STI site report

Malawi (National)

2019 Q2 (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	11,291	11%
HIV status ascertained	90,367	89%
HIV negative (new test)	73,966	82%
HIV positive	16,401	18%
New positive	2,560	16%
Previous positive	13,841	84%
Not on ART	606	4%
On ART	13,235	96%

STI clients referred for services

Lab	1,812	3%
Gynae review	743	1%
Surgical review	480	1%
Repeat HTC	38,321	74%
ART (for assessment)	4,230	8%
Other (service referrals)	3,237	6%
VMMC	3,270	6%