



*Government of Malawi Ministry of Health*

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## **Integrated HIV Program Report October-December 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 (October – December 2019)

- Scale-up of integrated HIV services had reached the following number of sites:
  - **763** static and **168** outreach HIV testing sites.
  - **746** (static) ART sites; **623** of these started at least one pregnant or breastfeeding woman.
  - **690** sites with HIV-exposed children in follow-up.
- **922,473** persons were tested for HIV and received their results; **182,650 (20%)** accessed HIV testing for the first time; **739,823 (80%)** were repeat testers and **29,606 (4%)** of these received confirmatory testing (after having tested positive in the past). **26,276 (2.8%)** clients received a positive result for the first time<sup>1</sup>.
- A total of **31,747** people received **45,411** self-test kits for either primary or secondary use.
- **21,690 (87%)** of 24,778 blood units collected were screened for (at least) HIV, hepatitis B and syphilis.
- **157,171 (98%)** of 160,653 women at ANC had their HIV status ascertained; **10,166 (6%)** of these were HIV positive. **144,357 (96%)** of 150,698 at maternity had their HIV status ascertained **10,751 (7%)** of these were HIV positive.
- **25,354** patients started ART this quarter; **88%** were classified as asymptomatic / in WHO stage 1 and started under the “Test & Treat” policy.
- **833,227** patients were alive and on ART by end of December 2019.<sup>2</sup> This means that **78%** of the estimated 1,066,878 HIV positive population was on ART. <sup>3</sup> ART coverage was **74%** (45,668/ 61,682) for children<sup>4</sup> and **78%** (787,609 / 1,005,196) for adults.
- **133,377 (93%)** 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.
- **72%** of adults and **75%** of children were retained alive on ART at 12 months after initiation.<sup>5</sup>
- Out of **800,994** patients on first line adult ART **210,935 (27%)** were on TDF/3TC/EFV and **554,060 (71%)** had transitioned to TDF/3TC/DTG.
- **13,136** <sup>6</sup> (>99%) of an estimated 10,700 <sup>3</sup> HIV infected pregnant women in Malawi were on ART this quarter. **10,213 (76%)** of these were already on ART when getting pregnant and **2,293 (24%)** started ART during pregnancy/delivery.
- An additional **1,027** breastfeeding women started ART in WHO stage 1 or 2.

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

<sup>2</sup> 833,277 patients were reported as alive on ART at their registered site. In contrast to previous reports, no adjustment for patients in transit can be made this quarter. Tens of thousands of patients who were previously marked as lost to follow-up have been re-classified as transferred out in the context of active tracing undertaken by implementing partners. This precludes the calculation of new transfers out from cumulative cohort data.

<sup>3</sup> 2020 Spectrum Model estimates for the HIV population in December 2019.

<sup>4</sup> Number of children (0-14 years) on ART extrapolated from age-disaggregated cohort reports from sites with electronic medical record systems (see section 11.3 on page 25).

<sup>5</sup> Actual retention rates are thought to be about **10%** higher due to misclassification of ‘silent transfers’ as defaulters in clinic-based survival/retention analysis. (see section 11.4)

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

- **77%** and **71%** of women started while pregnant or breastfeeding were retained on ART at **6 and 12 months** after initiation, respectively.
- **10,067 (7%)** of infants discharged alive from maternity were known to be HIV exposed, **9,698 (96%)** of these received ARV prophylaxis (nevirapine).
- A total of **14,195 HIV** exposed children were newly enrolled for follow-up this quarter; **12,212 (81%)** of these were enrolled before age 2 months.
- Out of the total 1,066,878 estimated PLHIV by end December 2019:
  - An estimated **90%** of PLHIV knew their status (diagnosed)
  - **87%** of whom were on ART
  - **93%** of whom were virally suppressed.<sup>7</sup>
- This means that the Q4 2019 scale-up target for the population diagnosed was exceeded. The estimate for proportion of PLHIV who know their status was reduced from previous quarter (94%) based on a new standard model method for the “first 90” (UNAIDS “Shiny90” model). The new estimate implies that undisclosed repeat testers account for 53% 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 123,983 individuals diagnosed but not on ART. This gap may be explained by increasing challenges with early ART uptake and retention among the large number of PLHIV diagnosed over the last quarters, many of whom were asymptomatic when diagnosed.
- Malawi has already achieved two of the 90-90-90 targets (for diagnosis and viral suppression) which were set for December 2020. In line with the new National Strategic Plan 2020-25, the current and future reports will measure progress against the UNAIDS fast-track 95-95-95 targets. See **Figure 1** below:

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

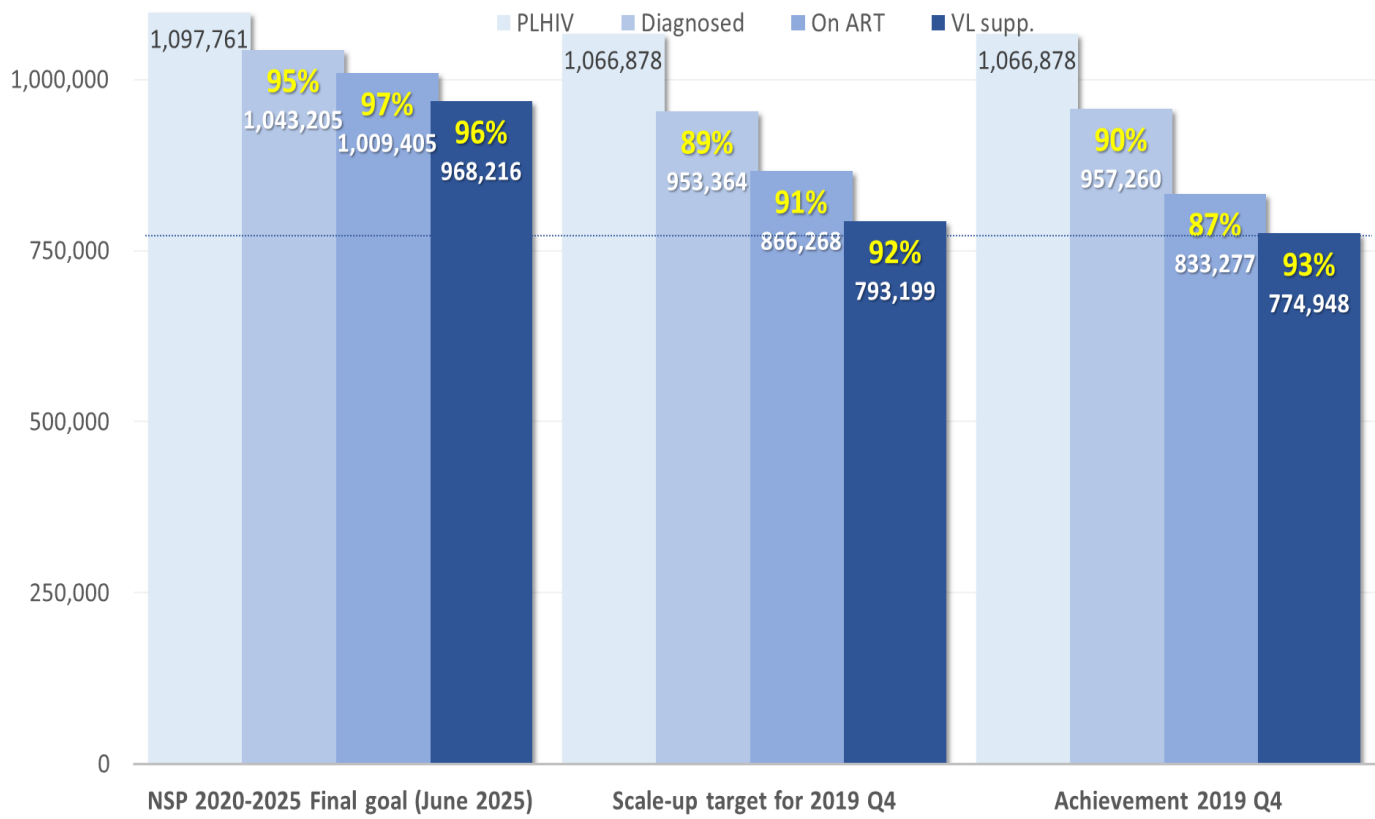
**‘First 95’** (957,260 diagnosed): the 76.8% MPHIA estimate for adults (15-64) diagnosed (self-reported and/or presence of ARVs in blood sample) is assumed to represent the status for all PLHIV (Spectrum) by end of Q1 2016 (1,014,106 x 76.8% = 778,833); add: 240,177 = 47% of 511,016 people reported as newly diagnosed between April 2016 – December 2019 (HTS program data adjusted for an estimated 53% of repeat testers misclassified as newly diagnosed); subtract: 61,637 (81%) of 76,078 estimated deaths among all PLHIV (2019 Spectrum model) between April 2016 –December 2019 to account for deaths among the diagnosed population (on ART and not on ART).

**‘Second 95’** (833,277 on ART): patients retained alive on ART by end Q4 2019 from routine ART program reports.

**‘Third 95’** (774,948 virally suppressed): extrapolated from the 93% of patients with a routine VL monitoring result <1000 copies/ml this quarter, applied to the 833,277 patients on ART.

**Figure 1**

**Malawi progress towards the 95-95-95 HIV treatment targets (December 2019)**



## 2 Integrated HIV Program Overview

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

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

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

## 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

751 public and private sector facilities were visited for **clinical HIV program supervision** between 13<sup>th</sup> and 24<sup>th</sup> of January 2020.

The large number of sites was covered by **241** supervisors working in **32** teams that spent 2,116 **working hours** at the sites. Each site visit lasted on average 2.8 hours, but up to 2 days were spent at the busiest sites. **544 (73%)** sites were awarded a *certificate* for **excellent performance**. This number is higher than the previous quarter (477). **88 (12%)** 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 for 2019 Q4**

Table 1: Outcomes of integrated HIV services supervision for 2019 Q4

Zone	Total facil. visited*	Supervision hours spent at facilities		Performance (# and % of sites)	
		Total	Average per site	Excellent perform.	Mentoring needed
NZ	132	347	2.6	95 72%	14 11%
CEZ	106	298	2.8	77 73%	17 16%
CWZ	171	450	2.6	121 71%	26 15%
SEZ	169	505	3	120 71%	17 10%
SWZ	173	528	3.1	133 77%	15 9%
<b>Malawi</b>	<b>751</b>	<b>2,128</b>	<b>2.8</b>	<b>546 73%</b>	<b>89 12%</b>

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

**Table 1** summarizes the supervision outcomes by zone. Most facilities were using the standard national M&E tools. **230** sites had cumulatively registered more than 2,000 ART patient and **82** of these had registered more than 5,000. **207 (90%)** of these high burden sites were using point-of-care electronic medical records (EMR) systems, but EMR was also in use at 10 lower burden sites. **507** low- and medium-burden sites were using a back-data entry solution of laptops to capture patient visits recorded on the paper patient cards. Some NGO-supported sites were using custom tools compatible with the national standard reporting requirements.



## 4 Inventory of Sites and Services

### 4.1 Sites and Services

There were **763** static and **outreach** HIV testing sites in Q4 2019.

**Table 2**

Facilities with integrated HIV services in the 5 Zones. Availability of services defined by performance (at least 1 patient enrolled) during 2019 Q4

Zone	Total fac.(1)	Facilities providing HIV services				CD4 count machines (2)		
		Exp. child	Pre-ART	PMTCT B+	ART	Installed	Functional	Results
SEZ	171	160 94%	0 0%	155 91%	167 98%	8 5%	5 63%	541
SWZ	178	158 89%	10 6%	141 79%	171 96%	16 9%	10 63%	1,576
CWZ	172	147 85%	0 0%	128 74%	171 99%	8 5%	5 63%	1,537
CEZ	107	103 96%	0 0%	95 89%	106 99%	3 3%	0 0%	0
NZ	135	122 90%	0 0%	104 77%	131 97%	8 6%	4 50%	329
<b>Malawi</b>	<b>763</b>	<b>690 90%</b>	<b>10 1%</b>	<b>623 82%</b>	<b>746 98%</b>	<b>43 6%</b>	<b>24 56%</b>	<b>3,983</b>

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

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

**Table 2** shows the distribution of the **763** sites designated to provide clinical HIV services in Q4 2019, by zone. At the national level, there were **746** (static) sites with at least one patient on ART; **623** sites had enrolled women under PMTCT Option B+; **690** 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 43 sites, and **24** (56%) of these had produced at least 1 result during Q4 2019. The total number of CD4 results produced (**3,983**) was similar to the previous quarter (4,075). With the introduction of the 'Test & Treat' policy, routine CD4 count testing to determine when to start ART has been deprioritized. However, the 2018 Malawi HIV guidelines introduced routine baseline CD4 counts at ART initiation where available and outputs are expected to increase further.

### 4.2 Staffing of HIV Services

#### 4.2.1 HIV Testing Services

The Department for HIV and AIDS has maintained a dedicated system for professional registration and performance tracking for HIV testing providers since 2011. This separate registration system is needed because HIV testing providers include lay persons with HIV testing training who are not registered with any other professional body. All testing providers are issued with a unique ID and a professional logbook for documentation of duty stations,

trainings, sit-in observation and proficiency testing results. Logbook holders are requested to record the total number of tests done at the end of each month. Logbooks are routinely reviewed during quarterly supervision and key performance data for each provider are summarized on the site supervision forms.

**Table 3**

	2019 Q1		2019 Q2		2019 Q3		2019 Q4	
Sites visited	754		756		755		751	
Sites with any tests done	711	94%	719	95%	722	96%	720	96%
Sites with registered HTC staff	660	88%	652	86%	693	92%	666	89%
<b>Total HTC staff at visited sites</b>	<b>4,216</b>		<b>4,068</b>		<b>4,598</b>		<b>4,316</b>	
Providers with any DBS (VL) samples collected	1,837	44%	1,873	46%	2,218	48%	1,984	46%
Providers with any DBS (EID) samples collected	1,477	35%	1,421	35%	1,611	35%	1,506	35%
Providers with any Syphilis test done	1,815	43%	1,947	48%	2,259	49%	2,086	48%
Providers with any HIV test done	2,597	62%	2,672	66%	2,960	64%	2,626	61%
Providers with 300+ HIV tests done this quarter	1,027	29%	909	27%	1,007	27%	834	24%
Logbooks reviewed	3,540	84%	3,351	82%	3,800	83%	3,488	81%
Providers participating in PT this quarter	2,675	76%	1,113	33%	2,956	78%	1,043	30%
<b>Total DBS (VL) Samples</b>	<b>56,992</b>		<b>100,642</b>		<b>142,551</b>		<b>108,656</b>	
<b>Total DBS (EID) Samples</b>	<b>9,250</b>		<b>10,375</b>		<b>10,394</b>		<b>10,863</b>	
<b>Total Syphilis tests</b>	<b>101,461</b>		<b>133,811</b>		<b>148,706</b>		<b>144,569</b>	
<b>Total HIV tests (HTC register)</b>	<b>1,117,587</b>		<b>1,007,296</b>		<b>1,019,610</b>		<b>922,473</b>	
HIV tests accounted for by individual staff	783,986	70%	695,140	69%	746,259	73%	637,702	69%
Source: logbooks	745,303	95%	653,500	94%	693,751	93%	597,839	94%
Source: HTC register	38,683	5%	41,640	6%	52,508	7%	39,863	6%
Total tests by staff with 300+ tests	619,309	79%	500,308	72%	523,803	70%	429,957	67%

**666 (89%)** of the 748 visited facilities had registered HIV testing providers and **714 (95%)** sites had performed at least one test during Q4 2019. **3,488 (81%)** of 4,316 providers had their logbooks available for review. This is similar to the previous quarter (83%). Based on the reviewed logbooks **2,626 (67%)** had done at least one HIV test during the quarter; **2,086 (48%)** at least one syphilis test; **1,984 (46%)** had collected at least one VL sample; and **1,506 (25%)** 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 3,448 reviewed logbooks, **1,043 (30%)** 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.

**637,702 (70%)** of all 914,113 HTS tests conducted this quarter (according to HTC register reports) were accounted for by individual HTS staff working at the visited sites. **597,839 (94%)** of these tests were documented in the reviewed logbooks and an additional **39,863 (6%)** could be attributed to individual providers from staff codes in the HTS registers. **834 (24%)** of 4,316 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 **834 staff** who met or exceeded this target provided **429,957 (67%)** 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 200 service delivery staff are themselves participating in the supervision exercise and will not be counted as having worked in their ART clinic during the supervision period. The table below shows that overall staffing levels have slightly improved over the last 2 quarters. However, the number of ART clinicians decreased by 27 from 941 to 914 from the previous quarter.

Among the other cadres, **1,379** were nurses and 966 were auxiliary staff (health surveillance assistants, clerks, etc.)

**Table 3**

	2019 Q1		2019 Q2		2019 Q3		2019 Q4	
Clinicians	886	28%	883	28%	941	28%	914	27%
Nurses	1,325	41%	1,248	39%	1,350	40%	1,379	41%
Pharmacy staff	47	1%	116	4%	128	4%	136	4%
Auxiliary Staff	951	30%	951	30%	994	29%	966	28%
<b>Total</b>	<b>3,209</b>		<b>3,198</b>		<b>3,413</b>		<b>3,395</b>	

An estimated 4.0 million ART patient visits are currently managed at the 748 ART sites per annum, based on 833,227 patients alive on ART and an average dispensing interval of 2.5 months. With 260 working days per year, an average of 15,355 patient visits is therefore managed by the ART sites per working day. At current staffing levels, this translates into an average of **17** ART patient visits per clinician and **11** per nurse per day. This approximate HRH capacity assessment does not take account of site-specific differences in patient burden and staffing levels and there are several medium and high burden sites with sub-optimal staffing. However, the national treatment program is fully decentralized to the health centre level and the program continues to devolve the growing patient burden to peripheral facilities. Since 2011, the steepest increase in ART patient numbers has been recorded at the 300 small peripheral sites that have the largest collective staffing capacity (see Figure 9 on page 31).

## 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’ (batched) HIV testing is still being practised in some facilities despite ongoing attempts to reinforce the one-client-in-session testing policy. Finally, some implementing partners have introduced modified M&E tools at facilities they are supporting that are adding considerable work load and distraction.

## 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.

**667 (93%)** of the 720 active testing sites had documented at least 1 QC set this quarter and **496 (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

**922,473** people <sup>8</sup> were tested and counselled for HIV between October and December 2019. This is a 11% decrease from the previous quarter (1,019,610). 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.

**882,345 (96%)** of all tests were performed at health facilities, **5,142 (<1%)** were done in stand-alone HTC sites and **34,986 (4%)** were done outside of facilities / in the community. **26,246** people were reported as newly diagnosed with HIV this quarter. Out of these, **25,451 (97%)** were diagnosed at health facilities; **95 (<1%)** at stand-alone HTC sites; and **730 (3%)** through community-based testing. The reported ‘yield’ for new diagnoses was 2.8% (excluding clients who disclosed a previous positive result from the denominator).

However, based on UNAIDS “Shiny90” model triangulation of population survey results and program data, **at least 53%** of all clients classified as “new positive” in HTS registers are assumed to be undisclosed repeat testers. Discounting 53% from the 26,276 reported “new positives” results in an estimated **12,350** genuine new diagnoses this quarter. This reduces the true ‘yield’ of new diagnoses in the HTS program to **1.3%**.

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<sup>8</sup> Reports from the HTC register are based on client encounters. It is not possible to de-duplicate people who access HTC multiple times in the reporting period. However, very few individuals come for repeat testing in less than 3 months and the number of HTC encounters in one quarter is therefore assumed to represent individuals.

### 5.3 HIV testing access type

**677,321 (73%)** of people tested were patients receiving provider-initiated testing and counselling (PITC); **226,804 (25%)** accessed voluntary testing and counselling, door-to-door, community-based testing, etc.; and **18,348 (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 **43,363** FRS issued to index clients this quarter, the successful referral rate for family members was higher at **42%** (18,348 / 43,363) than last quarters at 38%. Issuance and utilization of FRS have increased considerably over the last quarters.

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

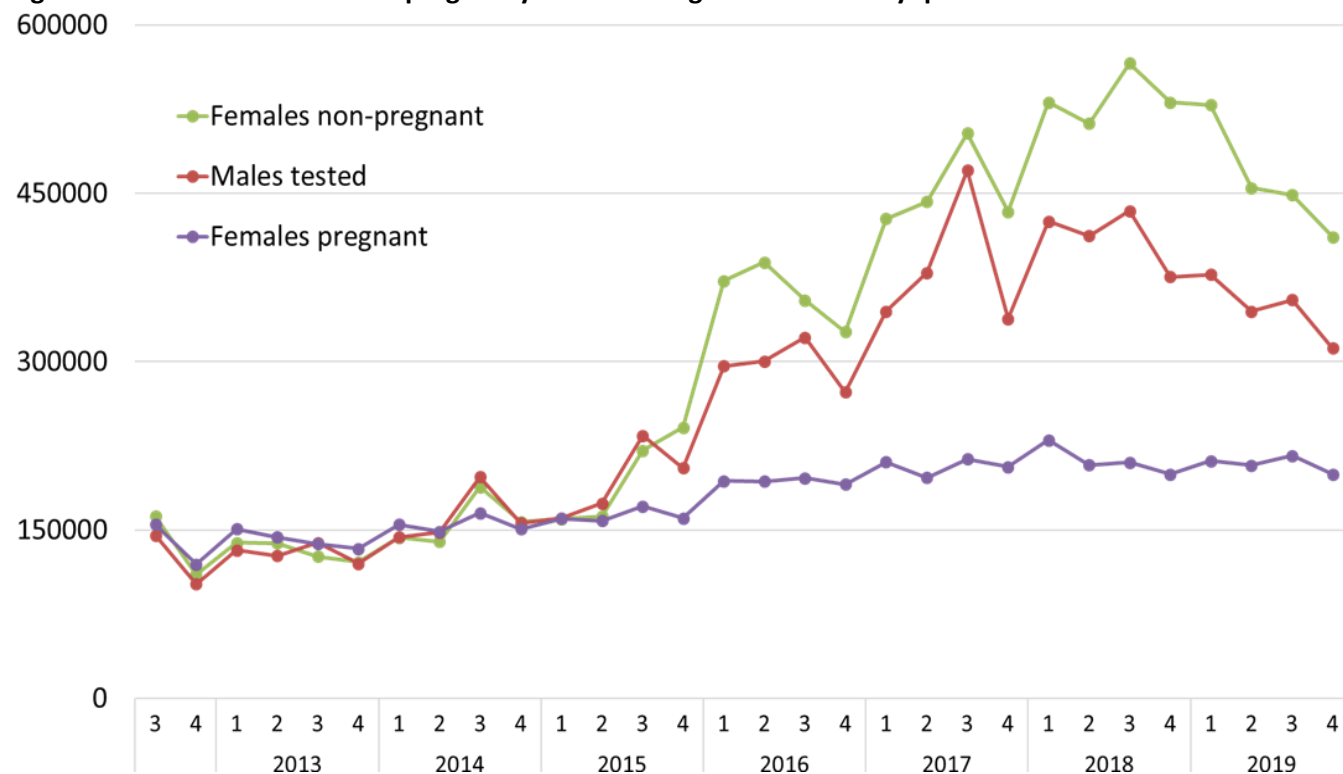
Out of **922,473** people tested and counselled, **34%** were males and **66%** were females. **33%** of females were pregnant. The ratio of males (**43%**) to non-pregnant females (**57%**) has remained constant. Testing among pregnant women is almost entirely provider-initiated and there is no comparable access route targeting males.

**191,400 (21%)** of all people tested accessed HTC with their partners (as a couple).

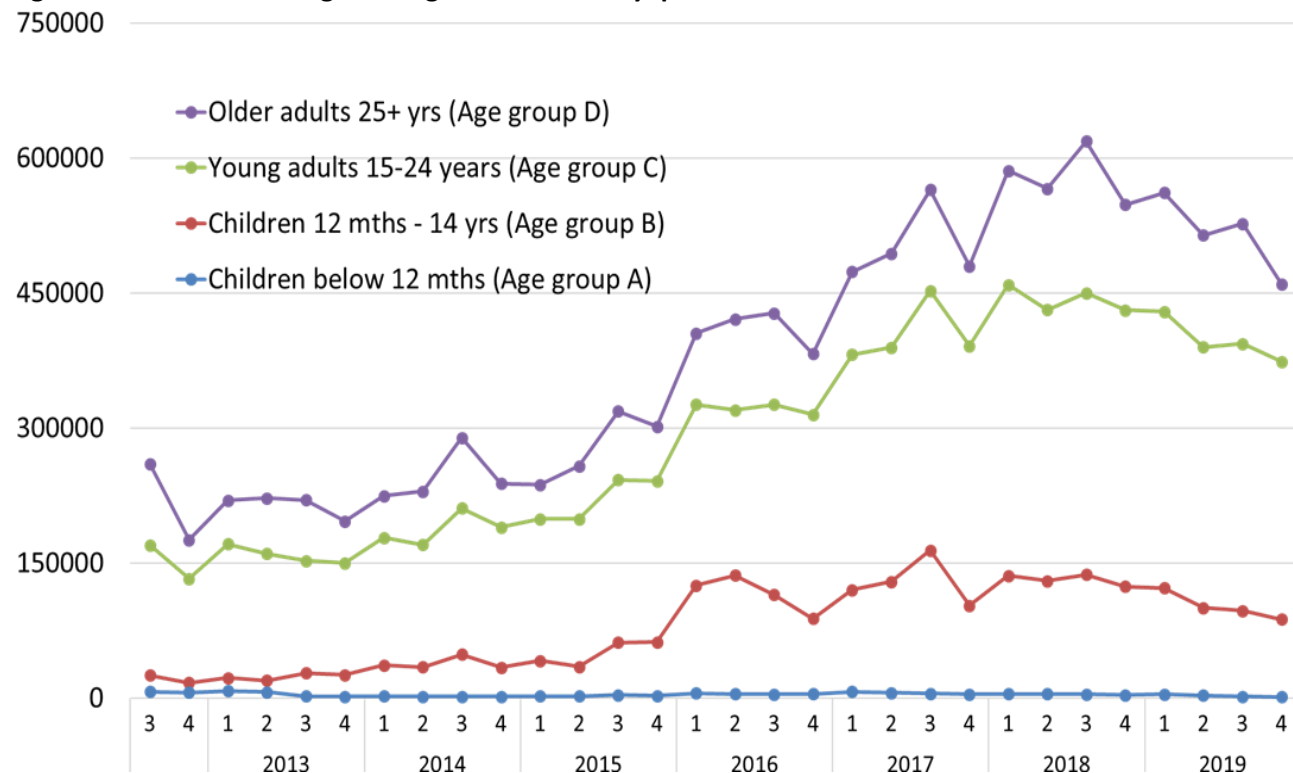
**50%** of all people tested and counselled were 25 years and above, **41%** were adolescents or young adults (15-24 years) and **9%** were children (<15 years). **1,439 (<1%)** of rapid tests done were among infants.

**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 Q3 to Q4 2019, the number of males, pregnant women and non-pregnant females tested decreased by 12% , 8% and 8% 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.

**182,650 (20%)** of all clients tested accessed testing for the first time and **739,823 (80%)** were repeat testers. Based on the cumulative number of people who accessed HTC for the first time, a total of **11,503,771** 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.

**26,276 (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 (**119**) and inconclusive test results (**1,912**) both accounted for **<1%** of new results given to clients.

**709,027 (96%)** of 739,823 repeat testers reported a *last negative* result. **29,624 (4%)** were reported as *previous positives* and all of these should have been classified as receiving a confirmatory test. For most of these *previous positives*, testing was probably initiated by a health worker before ART initiation. As expected, the number of *confirmatory test results* (**29,606**) was very close to the number of *previous positive* clients. **29,606 (99%)** of 29,779 confirmatory test results were concordant positive and **173 (<1%)** were classified as *confirmatory inconclusive*. This category includes parallel concordant negative and discordant



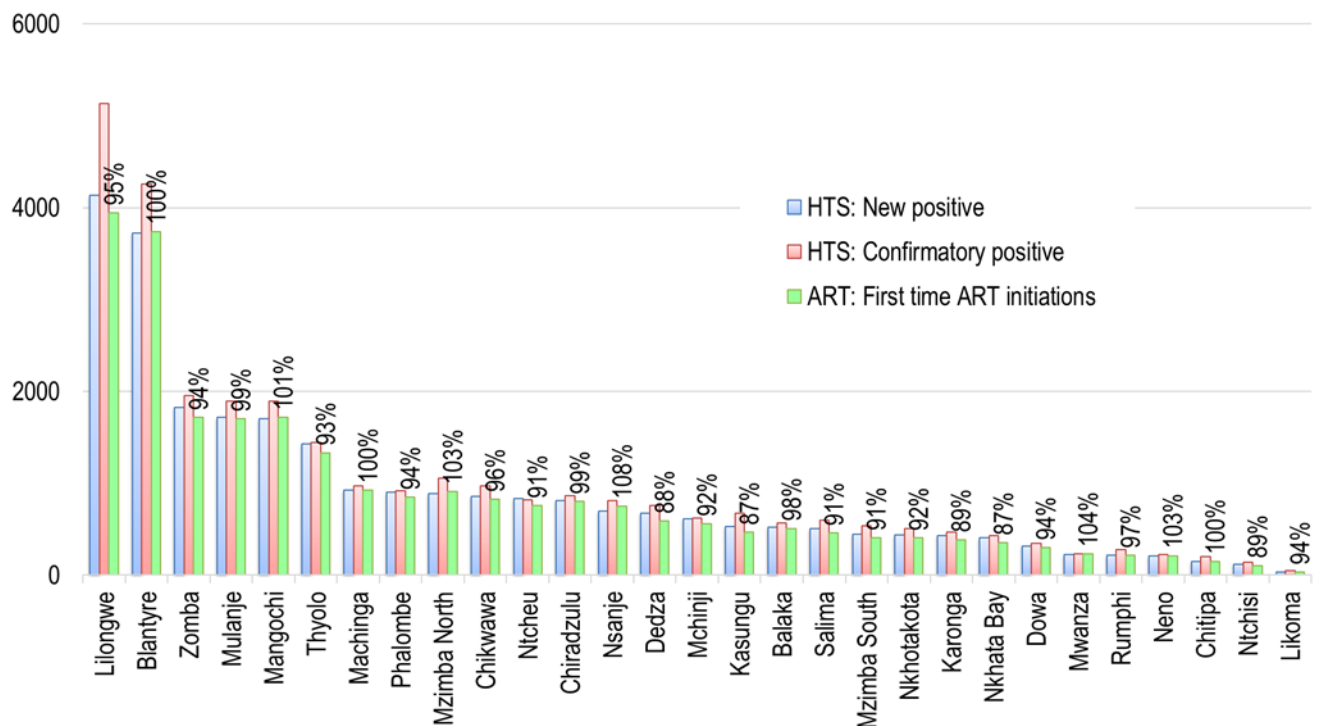
test outcomes (Determine HIV1/2 and Uni-Gold HIV1/2 are used in parallel for confirmatory testing). Clients who did not have a concordant positive confirmation may be explained by selective confirmatory testing among clients with doubts about their previous positive status, but it also underscores the 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 **25,354** patients who initiated ART this quarter represent **96%** of the **26,276** clients tested positive for the first time. Proxy linkage rates ranged from 87% in Nkhatabay and Kasungu to 108% in Nsanje. Lilongwe had the highest number of new diagnoses (**4,133**) and ART initiations were at **3,944**, implying a district-level linkage of **95%**. Very high or low linkage rates suggest that cross-border access to testing and ART was seen in several districts (e.g. Nsanje, Nkhatabay, Neno, Blantyre, etc.).

The number of confirmatory positives exceeded the number of new positives by 3,330 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 (1,000) of confirmatory positives compared with the number of new positives. Lilongwe, Blantyre, Zomba, Mangochi, Mulanje, Mzimba North and Thyolo accounted for **2,268** (68%) out of the 3,330 excess confirmatory positives in the whole country this quarter. At the national level, the number of confirmatory positives exceeded the number of ART initiations by 4,252 (17%).

**Figure 4: Number of new positives, confirmatory positives and new ART initiations in Q4 2019 by district (percentages represent ART initiations over new positives for each district)**



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

## 5.7 HIV Self-Testing (HIVST)

The implementation of the National HIVST program started in December 2018 with an aim of facilitating access to HIV testing for hard-to-reach populations.

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

### 5.7.1 HIV-Self Test Kits Recipients Details

Between October and December 2019, **31,747** people were counselled and given a total of **45,411** oral fluid self-test kits, either for self-use or for secondary distribution to sexual partners or others. This is equivalent to an average of 1.4 kits given to each recipient. **41%** of the 31,747 recipients were males and **59%** were females. **33%** of the females were pregnant.

Out of all recipients, **3,315 (10%)** had never been tested for HIV before and **28,432 (90%)** reported a previous test result. **24,045 (85%)** of previously tested recipients were negative and **4,370 (15%)** were positive. **3,862 (88%)** of the positives were on ART and **12%** were not ART. **17 (<1%)** recipients reported an inconclusive previous test results.

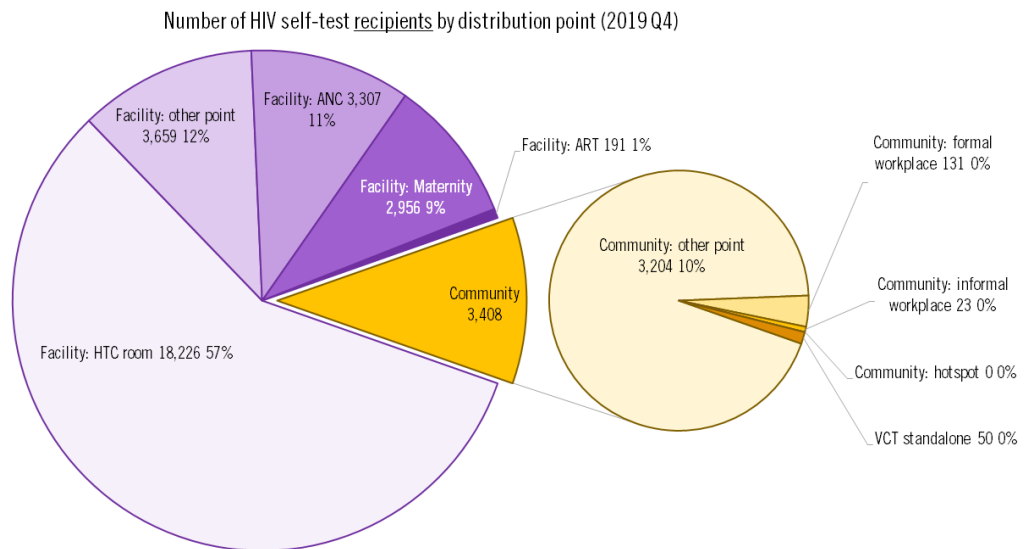
### 5.7.2 Distribution Points of HIVST Kits

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

**Figure 5** shows the number of recipients by distribution points in 2019 Q4. **28,339 (90%)** of all **31,747** recipients were seen at health facilities and **3,408 (10%)** in community settings. HTC rooms were the most common distribution point in facilities with **18,226 (57%)** recipients, followed by other facility points (**3,659**), ANC clinics (**3,307**), maternity (**2,956**) and ART clinics (**191**). **3,204 (10%)** of clients received HIVST at unspecified community distribution points, while formal and informal workplaces and stand-alone VCT settings each accounted for <1% of recipients. None of the HIVST kits distributed were classified under community hotspots.



**Figure 5**

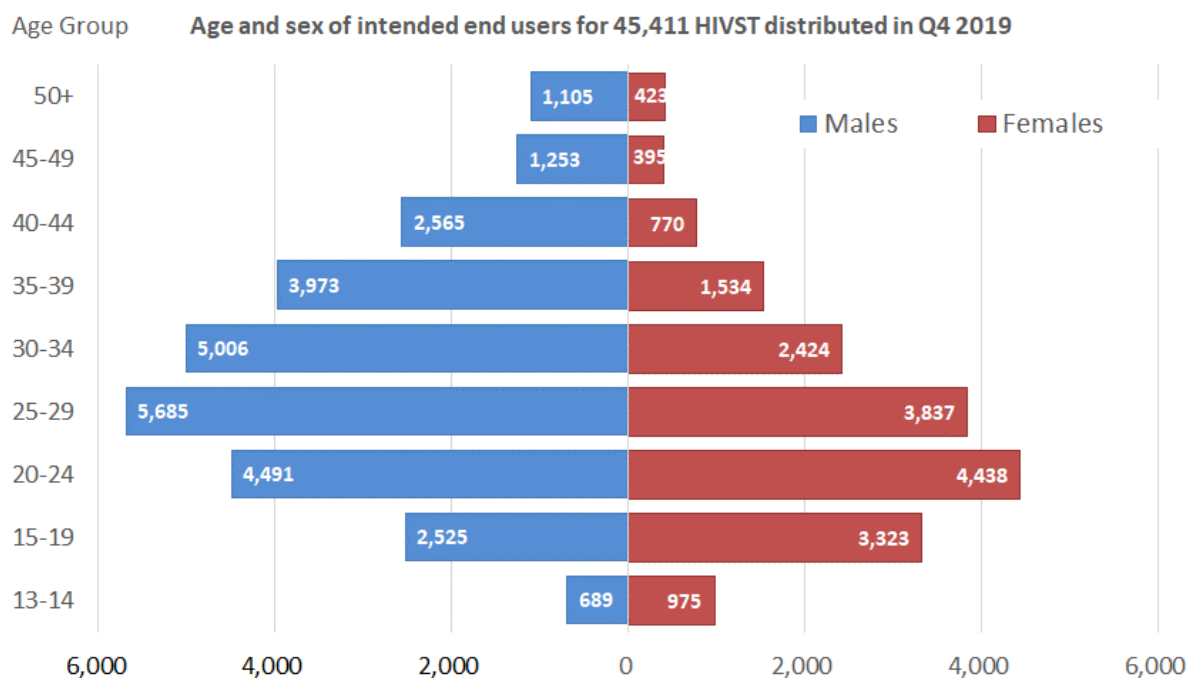


### 5.7.3 HIVST Distributed Kits: Intended User Attributes

Out of the **45,411** HIVST kits distributed in Q4 2019, **11,008 (24%)** were intended for self-use by the recipients and **34,403 (76%)** were for onward distribution. **26,427 (77%)** of the kits intended secondary distribution were for sexual partners and **7,976 (23%)** were for others, such as friends or relatives of the recipients.

**Figure 6** below shows the intended end user age and sex category for all the test kits that were distributed during 2019 Q4. Out of **45,411** test kits distributed, **27,292 (60%)** were for males and **18,119 (40%)** for females. 70% of the male end users were 20-39 years and 64% of females were 15-29 years.

**Figure 6**



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

DNA-PCR testing is performed at 10 labs (Mzuzu Central Hospital, Mzimba District Hospital, Kamuzu Central Hospital, Queen Elizabeth Central Hospital, DREAM Blantyre, DREAM Balaka, Tholo District Hospital, Zomba Central Hospital, Nsanje District Hospital and Partners in Hope, Lilongwe). HIV Diagnostic Assistants and EID counsellors collect infant blood samples as dried blood spots on filter paper. Health facilities are requested to fill a standard EID DNA-PCR logbook to document EID samples and to track results. The logbook includes the dates of collection, dispatch, receipt of result from the lab and communication of the result to the mother. Supervision teams were asked to collect basic data from these logbooks.

**(88%)** of 690 sites with HIV exposed children in follow-up had collected and recorded at least 1 DNA-PCR sample during Q4 2019. **11,452** 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 **8,300 (72%)** of these specimens and **5,412 (65%)** of these results had been communicated to the mother/guardian. The proportion of results received at the sites was **86%, 74% and 44%** for samples collected in October, November and December, respectively. A total of **310(4%)** results received at the sites were positive.

The **10 central PCR laboratories** registered the receipt of **5,118** DNA-PCR samples that were collected during Q4 2019. This represents **46%** of the 11,035 samples recorded in the logbooks at the sites. An additional **1,760** DNA-PCR samples were processed by point-of-care (POC) machines at 22 facilities in 9 districts (Blantyre, Lilongwe, Chikwawa, Machinga, Mangochi, Mulanje, Mzimba, Phalombe, Zomba). **107 (6%)** of these were positive. Patient attributes and reason for testing were not available from the electronic POC records uploaded to the central lab information management system.

A total of **5,118** valid DNA-PCR results were dispatched from the central PCR labs in Q4 2019. **(69%)** of the dispatched results were from samples collected in Q4 2019, while 31% were from samples collected in the previous quarters. The median time between sample collection and dispatch of the result was **22 days**; 50% of results were dispatched between 16 and 31 days after sample collection.

**3,615 (71%)** of all results were from infants under 2 months old at the time of sample collection. 1,022 (20%) were 2-5 months; 261 (5%) were 6-11 months; 12 (2%) were 12-17 months; and 29 (1%) were 18 months or older. The date of birth and/or specimen collection was missing for 125 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	3,615	55	1.5%
2-5 months	1,022	64	6.2%
6-11 months	261	48	18.3%
12-17 months	56	26	46.4%
18 months +	39	20	51.2%
(missing)	125	2	1.6%
<b>Total</b>	<b>5,118</b>	<b>215</b>	<b>4.2%</b>

**215 (4.2%)** of all results dispatched were positive. The age-specific number (%) of positive results is shown on the left. Receipt of the DNA-PCR result at the health facility is a prerequisite to updating of patient records and for appropriate clinical management. Considering the delays between sample collection and dispatch of the test result from the lab, the child's age at the time of dispatch of the result from the lab is a useful indicator for early infant diagnosis and treatment. The table below shows the distribution of ages when results were dispatched from the lab.

**Table 5**

Age when result sent from lab	Tot. Res.	(Col %)	Positives	(Col %)
<2 months	841	16%	4	2%
2-5 months	3,714	73%	99	46%
6-11 months	312	6%	52	24%
12-17 months	79	2%	32	15%
18 months +	47	1%	26	12%
(missing)	125	2%	2	1%
<b>Total</b>	<b>5,118</b>	<b>100%</b>	<b>215</b>	<b>100%</b>

Out of **215** positive results dispatched, only **4 (2%)** were sent before the child was 2 months old. A total of **103 (48%)** positive results were sent before the child was 6 months old

and **155 (70%)** were sent before the child was 12 months old. A total of **79** infants were started on ART in WHO stage 1 or 2 on the basis of confirmed HIV infection (see ART section below). However, 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 **24,778** blood units were collected in Malawi during Q4 2019. MBTS collected **(87%)** 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 **3,142** units from replacement donors. **2,609 (83%)** of these units were screened for at least the 3 key TTIs (HIV, HepB and syphilis) and **1,823 (70%)** of these were also screened for HepC and malaria. This means that a total of **21,690 (87%)** 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, **489** were screened with any other combination of tests for TTIs.

A total of **4,910** potential replacement donors were documented in the blood donor registers at the facilities and **3,142 (64%)** 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, **77%** of potential donors were tested for HIV, **76%** for HepB, **78%** for syphilis, **71%** for malaria and **53%** 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 **3,647** persons received PEP during Q4 2019. This is a slight decrease from the previous quarter's **3,758**.

### 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 2 planning that had been observed among HIV patients in Malawi and to reduce the number of unwanted pregnancies among HIV-infected women (**PMTCT Prong 2**). HIV program reporting on PIFP is limited to women who received an injection of Depo-Provera in ART clinics during the last quarter. The report does not account

for family planning need nor does it include women who accessed family planning services outside of HIV clinics.

**Table 6** shows that **79,983 (18%)** of 432,471 women received Depo-Provera from ART clinics in Q4 2019. The south east zone had achieved the highest coverage. Patient coverage has slightly increased from 17% in the previous quarter. 469 (63%) of ART/PMTCT sites had stocks of Depo-Provera in January 2020. This is a decrease from the previous quarter with 543 sites with Depo in October 2019.<sup>9</sup> The HIV Program is no longer supplementing FP supplies through procurement and distribution of additional Depo-Provera to sites.

### 8.3 Cotrimoxazole Preventive Therapy (CPT)

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

**Table 5** shows that **729,267 (88%)** of 833,277 patients on ART were on CPT. Coverage was highest in Northern and Central East zones at **93% and 91% respectively**.

### 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 207,334 (**58%**) of the 356,104 ART patients in the 5 districts were on IPT by the end of Q4 2019. IPT coverage ranged from **54%** in Zomba to **78%** in Chiradzulu.

**649,123 (78%)** of 833,277 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. **164,714 (25%)** of 647,917 were screened for hypertension at least once in 2019.

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<sup>9</sup> Many Mission hospitals do not provide family planning.

**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**	
<b>Malawi (National)</b>	<b>833,277</b>	<b>729,267</b>	<b>88%</b>	<b>207,334</b>	<b>25%</b>	<b>432,471</b>	<b>79,983</b>	<b>18%</b>	<b>649,123</b>	<b>164,714</b>	<b>25%</b>
Northern Zone	83,419	75,579	91%	0	0%	43,294	5,582	13%	64,983	22,918	35%
Chitipa	6,544	4,838	74%	0	0%	3,396	122	4%	5,098	1,505	30%
Karonga	14,571	13,947	96%	0	0%	7,562	630	8%	11,351	1,847	16%
Nkhata Bay	10,399	9,807	94%	0	0%	5,397	1,044	19%	8,101	3,139	39%
Rumphi	8,505	8,327	98%	0	0%	4,414	257	6%	6,625	1,655	25%
Mzimba North	26,559	24,517	92%	0	0%	13,784	1,125	8%	20,689	8,878	43%
Mzimba South	16,056	13,981	87%	0	0%	8,333	2,217	27%	12,508	5,282	42%
Likoma	785	163	21%	0	0%	407	187	46%	612	612	100%
Central East Zone	65,904	61,476	93%	0	0%	34,204	5,346	16%	51,339	13,240	26%
Nkhatakota	12,719	11,881	93%	0	0%	6,601	576	9%	9,908	2,363	24%
Kasungu	18,041	16,655	92%	0	0%	9,363	2,485	27%	14,054	4,011	29%
Ntchisi	4,864	4,737	97%	0	0%	2,524	579	23%	3,789	1,829	48%
Dowa	13,227	11,910	90%	0	0%	6,865	376	5%	10,304	1,304	13%
Salima	17,053	16,292	96%	0	0%	8,851	1,330	15%	13,284	3,734	28%
Central West Zone	170,397	153,673	90%	61,526	36%	88,436	20,092	23%	132,739	57,315	43%
Lilongwe	106,061	97,089	92%	61,526	58%	55,046	13,358	24%	82,622	43,185	52%
Mchinji	17,206	13,273	77%	0	0%	8,930	1,442	16%	13,403	4,750	35%
Dedza	19,543	18,334	94%	0	0%	10,143	3,101	31%	15,224	6,442	42%
Ntcheu	27,587	24,977	91%	0	0%	14,318	2,191	15%	21,490	2,938	14%
South West Zone	256,971	223,542	87%	115,040	45%	133,368	27,890	21%	200,180	36,223	18%
Chiradzulu	40,778	36,566	90%	31,869	78%	21,164	6,223	29%	31,766	2,100	7%
Blantyre	95,125	78,991	83%	48,458	51%	49,370	7,380	15%	74,102	19,279	26%
Mwanza	6,407	5,939	93%	0	0%	3,325	408	12%	4,991	1,062	21%
Thyolo	57,398	51,743	90%	34,713	60%	29,790	9,790	33%	44,713	3,830	9%
Chikwawa	27,851	25,396	91%	0	0%	14,455	2,648	18%	21,696	1,867	9%
Nsanje	20,870	16,385	79%	0	0%	10,832	850	8%	16,258	3,914	24%
Neno	8,542	8,522	100%	0	0%	4,433	591	13%	6,654	4,172	63%
South East Zone	256,586	214,998	84%	30,769	12%	133,168	21,074	16%	199,880	35,019	18%
Mangochi	53,437	43,942	82%	0	0%	27,734	3,163	11%	41,627	5,752	14%
Machinga	31,475	26,245	83%	0	0%	16,336	2,346	14%	24,519	2,153	9%
Zomba	56,742	48,882	86%	30,769	54%	29,449	6,519	22%	44,202	13,317	30%
Mulanje	57,604	50,466	88%	0	0%	29,896	6,554	22%	44,874	11,566	26%
Phalombe	35,531	25,631	72%	0	0%	18,441	2,381	13%	27,679	308	1%
Balaka	21,797	19,833	91%	0	0%	11,313	110	1%	16,980	1,922	11%

\* 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.

**823,872 (99%)** of all patients retained on ART were screened for TB at their last visit before end of December 2019. Out of these, **4,374 (1%)** patients were classified as new TB suspects. **1,700 (<1%)** patients were confirmed to have TB (clinical or lab based) and **1,645 (97%)** 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.

ICF not done (Current TB status unknown/ not circ)	8,405	1%
ICF done	824,872	99%
TB not suspected	818,798	99%
TB suspected	4,374	1%
TB confirmed	1,700	0%
TB confirmed, not on treatment	55	3%
TB confirmed, on TB treatment	1,645	97%

## 8.6 HIV-Related Diseases

**Table 7** shows the number of patients treated for key HIV-related indicator diseases. **3,886** patients were started on TB treatment this quarter and HIV status was ascertained for **3,858 (99%)**; **1,819 (47%)** of these were HIV positive and **1,659 (91%)** of all HIV positives were already on ART when starting TB treatment. In Q4 2019, **512** and **866** patients received Diflucan for acute cryptococcal meningitis and oesophageal candidiasis, respectively. **139** 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
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
2019 Q3	4,008	3,977 99%	1,778 45%	1,702 96%	69	412	826
2019 Q4	3,886	3,858 99%	1,819 47%	1,659 91%	139	512	866



## 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

**14,915** HIV exposed children were newly enrolled into follow-up during Q4 2019; **12,254 (81%)** of these were under the age of 2 months. The total number of new enrolments (14,915) exceeds by 4,848 (33%) the total number of known HIV exposed children discharged from maternity (10,067). 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 **11,706** infants in the **2-month age cohort**. **8,186 (70%)** had received a DNA-PCR result. **105 (1%)** of these were confirmed HIV infected. An additional **7** infants were diagnosed with *presumed severe HIV disease*, which means that a total of **112** infants were eligible for



ART. **92 (82%)** of these had started ART. This is a decrease from the previous quarter (94%). Out of the entire 2-month age cohort, **9,987 (94%)** were retained in exposed child follow-up, **92 (1%)** had started ART and **13 (<1%)** were discharged confirmed uninfected<sup>10</sup>. **45 (<1%)** were known to have died and **504 (5%)** had been lost to follow-up.

There were **12,283** children in the **12-month age cohort**. Current HIV infection status was known for **9,019 (73%)** children (DNA-PCR or rapid antibody test) and **214 (2%)** of these were confirmed HIV infected. **5 (<1%)** additional children had been diagnosed with *presumed severe HIV disease*, which means that a total of 219 children were eligible for ART. **198 (90%)** had started ART. Out of the entire age cohort, **9,176 (84%)** were retained in exposed child follow-up, **198 (2%)** had started ART and **47 (<1%)** were discharged confirmed uninfected.<sup>10</sup> **1,415 (13%)** were lost to follow-up and **96 (1%)** were known to have died.

There were **11,417** children in the **24-month age cohort**. Current HIV infection status was known for **7,938 (70%)** children (DNA-PCR or rapid antibody test) and **230 (3%)** of these were confirmed HIV infected. **74** additional children had been diagnosed with *presumed severe HIV disease*, which means that a total of **304** children were eligible for ART. **237 (78%)** of these had started ART. Out of the entire age cohort, **184 (2%)** were retained in exposed child follow-up, **235 (2%)** had started ART and **7,568 (74%)** were discharged confirmed uninfected. **2,149 (21%)** were lost to follow-up and **135 (1%)** were known to have died.

**Confirmed HIV-free survival at age 24 months** in this quarter was **74%**. This was related to the fact that only 70% in this cohort had a known HIV status. 3,442 (30%) children were classified as '*current HIV infection status unknown*' and many of these may be among the 2,149 children lost to follow-up and the 135 children who had died. Only 184 (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

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<sup>10</sup> A small number of children may be rightfully discharged as 'confirmed uninfected' by 2 or 12 months of age, provided that HIV exposure through breast milk has definitely stopped (e.g. maternal death) and a negative HIV test was obtained at least 6 weeks thereafter.

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

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

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

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

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

**Maternity reports** capture ART status at the time of delivery (up to the time of discharge from the postnatal ward). The timing of ART initiation is categorized into: (any time) before pregnancy; during 1<sup>st</sup> / 2<sup>nd</sup> trimester; during 3<sup>rd</sup> trimester; during labour. About 97% of pregnant women in Malawi attend ANC, but only 83% of women in the general population deliver at a health facility in Malawi. Maternity reports therefore have the potential for undercounting the number of mothers and infants receiving ARVs. However, there is evidence from ANC and maternity reports that almost all of the known HIV infected women deliver at health facilities. ART coverage among known positives is therefore reliably calculated from maternity reports. Women admitted at maternity who are referred to another facility before / after delivery are double counted in aggregated maternity data. Assuming the probability of referral is independent of ART status, the number of women already on ART when getting pregnant is therefore **adjusted** by the overall proportion of referrals among women admitted to maternity.

**ART program reports** capture pregnancy (and breastfeeding) status at the time of *ART initiation*, providing information on the number of new women starting ART while pregnant (or while breastfeeding). ART reports do not capture women who become pregnant after

starting ART. For the estimation of maternal ART coverage, the number of women starting ART in pregnancy is **adjusted for**:

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

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

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

Coverage is calculated by dividing the number of patients served by population denominators. The denominators are derived from expected pregnancies based on population projections and HIV prevalence from epidemiological surveillance (source: Spectrum model for Malawi). There are an estimated 10,700 HIV infected pregnant women in the population per quarter (1/4 of 42,802 in 2019).<sup>11</sup>

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

**13,136 (>99%)** of the estimated 10,700 HIV infected pregnant women in Malawi this quarter were on ART. This is based on **10,213**<sup>12</sup> women at maternity who were already on ART when getting pregnant and **2,923**<sup>13</sup> women who newly initiated ART in pregnancy. ART coverage was similar in the previous quarter (>99%).

An additional **1,027**<sup>14</sup> breastfeeding women started ART while breastfeeding (in WHO clinical stage 1 or 2), bringing the total number newly started on ART while pregnant or breastfeeding

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<sup>11</sup> 2020 Spectrum model estimates for HIV infected pregnant women in 2019.

<sup>12</sup> 10,741 women who started ART before pregnancy admitted at maternity; reduced by 4.9% to adjust for double counting of 9,231 referrals among 187,799 total admissions.

<sup>13</sup> 4,451 women registered at ART clinics who were pregnant at the time of starting ART; a) 17.8% are discounted to adjust for double-counting of transfers based on 1,049 of 5,891 women who transferred within 12 months of registration (12-month Option B+ survival analysis); b) 20.1% are discounted to account for presumed failed ART initiations based on 1,095 of 5,445 women lost to follow-up within 6 months of registration (6-month Option B+ survival analysis).

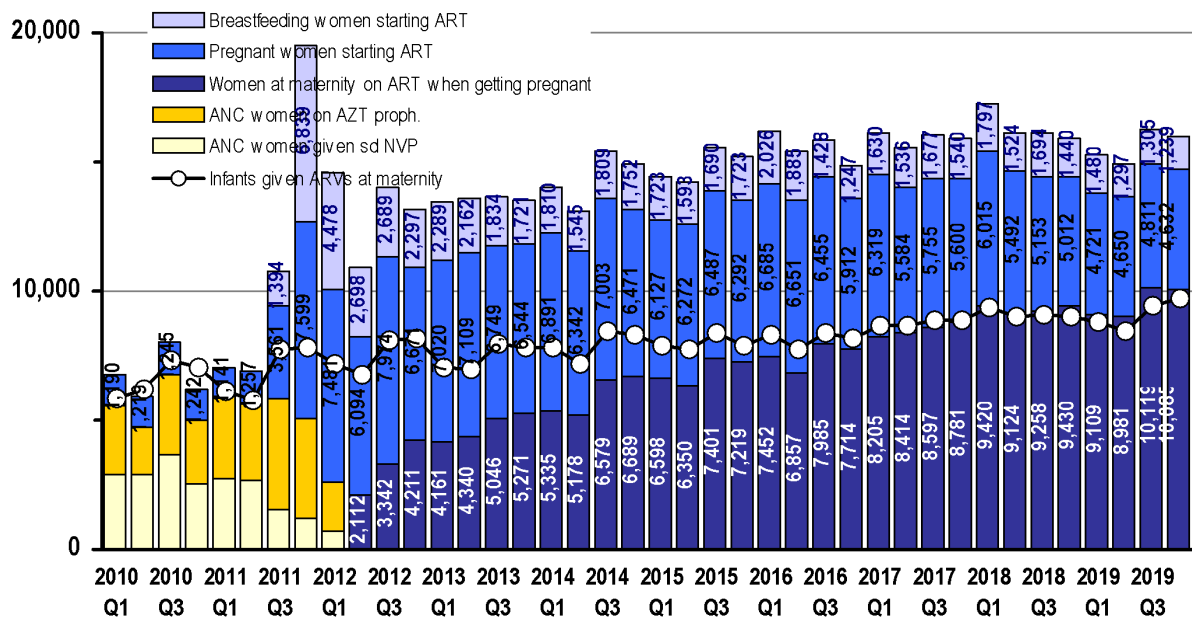
<sup>14</sup> 1,249 women registered at ART clinics who were breastfeeding at the time of starting ART; reduced by 17.8% to adjust for double-counting of transfers based on 1,049 of 5,891 women who transferred within 12

to **3,950**. 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. **9,698 infants** were confirmed to have started NVP prophylaxis at maternity.

**Figure 7** 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 7**  
**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:

**160,653** women attended ANC for their first visit between October and December 2019. This exceeds the estimated 154,750 pregnant women in the 2019 population during one quarter.<sup>15</sup> **157,171 (98%)** of women in this cohort had their HIV status ascertained at the first visit. Out of these, **9,6103 (6%)** presented with a valid previous test result and **147,561 (94%)** received a new test. A total of **10,166 (6%)** of women were found HIV positive: **7,534 (74%)** of these from a documented previous test and **2,632 (26%)** from a new test. **10,019 (99%)** of all

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.

<sup>15</sup> Estimated as ¼ of 619,000 births projected for 2019 (Demographic Projection from Spectrum 2020).

positives received ART: **7,451 (74%)** of these were already on ART when starting ANC; **2,260 (23%)** initiated ART at their first ANC visit and **308 (3%)** started late at 28 + weeks during pregnancy.

#### **Outcome cohort:**

**164,982** women had started ANC between April and June 2019 and their outcomes were reported between October and December 2019.

**162,090 (98%)** of the outcome cohort had their HIV status ascertained at least once in the course of ANC. HIV ascertainment has remained consistently >97% over the last quarters. **12,338 (8%)** presented with a valid documented previous HIV test result and **149,707 (92%)** received a new HIV test result at ANC. A total of **11,180 (7%)** women were found HIV positive. This is consistent with the latest Spectrum projections (6.9% HIV prevalence among pregnant women in 2019).<sup>11</sup>

**11,055 (99%)** of (known) HIV infected women were on ART by the end of ANC. This represents >99% coverage of the estimated 10,700 HIV positive pregnant women per quarter at the population level. Of the **11,055** ANC women who were known to receive ART **8,109 (73%)** were already on ART when starting ANC, **2,576 (23%)** initiated before 28 weeks of pregnancy and **370 (3%)** initiated during the last trimester of pregnancy. **10,983 (98%)** of HIV infected women at ANC were on Cotrimoxazole Preventive Therapy. **10,878 (97%)** of known HIV infected women attending ANC received the infant dose of ARVs (nevirapine syrup) to take home

#### **10.3.2 Syphilis Screening**

**148,135 (90%)** of women in the outcome cohort were tested for syphilis and **3,101 (2%)** were syphilis positive. The syphilis testing rate has improved significantly from the last quarter (**71%**). This was mainly driven by the increased availability of SD Bioline syphilis test kits at facilities from **79%** in the previous to **91%** this quarter. The proportion of positive syphilis test results has remained similar to the syphilis prevalence estimated from the 2010 ANC sentinel surveillance.

#### **10.4 HIV Services at Maternity**

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

Between October and December 2019, **141,510** women were admitted for delivery to maternity; **9,188** of these were referred to another facility before delivery, resulting in **150,698** total admissions to maternity during Q4 2019.

A total of **145,800** babies were born, **140,954 (97%)** were singletons and **4,846 (3%)** were twins/multiples. There were **143,335 (98%)** live births and **2,465 (2%)** stillbirths. **142,339 (99%)** of babies born alive were discharged alive and **996 (1%)** died before discharge.

#### **10.4.1 HIV Ascertainment at Maternity**

**144,357 (96%)** women had their HIV status ascertained at maternity. Out of these, **11,271 (8%)** presented with a valid previous HIV test result and **133,086 (92%)** received a new test. A total of **10,751 (7%)** women were HIV positive and **10,404 (97%)** of these had been

previously diagnosed while **347 (3.2%)** received a new positive result at maternity. The **144,357** women whose HIV status was ascertained at maternity represent **93%** of the expected 154,750 women delivering in the population.

HIV exposure status was ascertained for **138,721 (97%)** out of **142,339** babies born and discharged alive. **10,025 (7%)** of these were born to a known HIV positive mother.

#### 10.4.2 ARV Coverage at Maternity

A total of **10,669 (99%)** of known HIV infected women admitted to maternity received ART. Out of these, **10,013 (94%)** had started ART before pregnancy, **393 (4%)** initiated ART during the 1<sup>st</sup> or 2<sup>nd</sup> trimester, **92 (1%)** initiated during the 3<sup>rd</sup> trimester and **171 (2%)** initiated ART at maternity.

A total of **9,698 (97%)** of **10,025** infants who were known HIV exposed and discharged alive started daily NVP prophylaxis at maternity. This represents **91%** coverage of the estimated 10,700 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 Q4 2019

By the end of December 2019, there were 746 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 8**). 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 **25,354** initiated ART for the first time in Q4 2019. From 2019 Q1, routine reporting during supportive supervision has included a disaggregation of first-time initiations by sex and pregnancy status. In Q4 2019, **21,378 (84%)** out of 25,354 first time initiations could be disaggregated by sex and pregnancy.<sup>16</sup> Among these, **40%** were males and **60%** were females. Total number of pregnant women amongst first time initiating females was **2,905 (23%)**.

The total number of patients newly initiated on ART represents 96% of the 25,276 people recorded as newly diagnosed with HIV during the quarter. Among all new ART clinic registrations<sup>17</sup> in Q4 2019, **39%** were males and **61%** were females. **4,632 (21%)** of the registered females were pregnant at the time of starting ART.

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<sup>16</sup> 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.

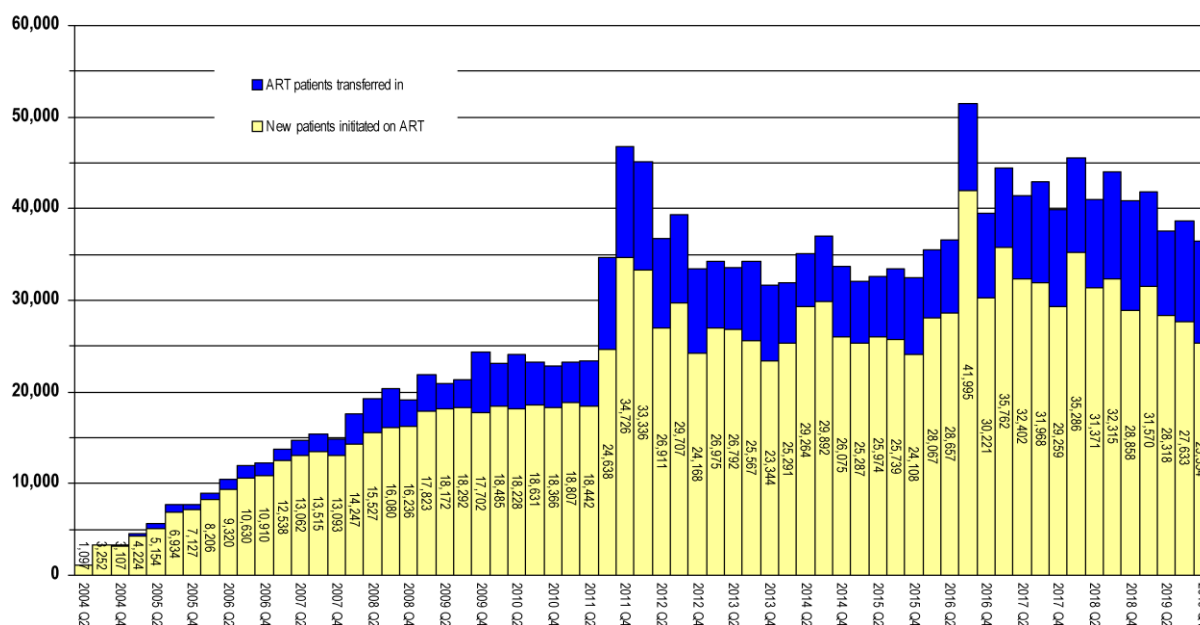
<sup>17</sup> These proportions include the 25,354 patients newly initiating ART, but also 10,759 patients previously started on ART who transferred between sites and 345 patients who re-initiated ART after treatment interruption.



**Figure 8**

**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 **32,311 (89%)** of all patients registered started in WHO stage 1 or 2 and **24,473 (80%)** of these started as 'asymptomatic' under universal ART eligibility policy. **3,221 (9%)** of patients registered started in WHO stage 3 and **830 (2%)** started in stage four. **78 (<1)** had no documented clinical stage at initiation.

**2,391** children were registered at ART sites in Q4 2019. **588 (25%)** of these were children aged 12-59 months in WHO stage 1 or 2. **20 (<1%)** infants started ART with presumed severe HIV disease. **79** 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 10,067 HIV exposed infants were identified at maternity and assuming a 2% transmission rate among the 99% of HIV positive mothers at maternity who received ART (and 20% transmission in the 1% who did not receive ART)<sup>18</sup>, only about 219 of these known HIV exposed infants may have been infected perinatally during Q4 2019. However, considering the projected 550 new infant HIV infections in the 2019 population per quarter<sup>19</sup>, early infant treatment coverage remains low at an estimated **18%** ((20+79)/550). The most significant bottleneck for early infant treatment remains the identification of HIV (probably mostly recently) infected pregnant / breastfeeding women.

**507 (2%)** out of all ART clinic registrations were patients with TB: **246 (1%)** had a current and **261 (1%)** a recent history of TB. **139 (<1%)** of patients registered had Kaposi's sarcoma.

### 11.2 Cumulative ART Registrations up to December 2019

By the end of December 2019, there were a cumulative total of **1,742,367** ART clinic registrations, **1,374,630 (79%)** of whom were patients newly initiated on ART; **342,388 (20%)** were patients who transferred between clinics; **25,301 (1%)** re-initiated ART after treatment

<sup>18</sup> UNAIDS Reference Group on Estimates Modelling and Projections (2011). Working paper on mother-to-child-transmission rates for use in Spectrum. Geneva, UNAIDS.

<sup>19</sup> ¼ of the 2,200 estimated new infant infections in the population in 2019 (2020 Malawi Spectrum model)

interruption.<sup>20</sup> Out of all registrations, **37%** were males and **63%** were females, **91%** were adults and **9%** were children (<15 years).

### 11.3 ART Outcomes

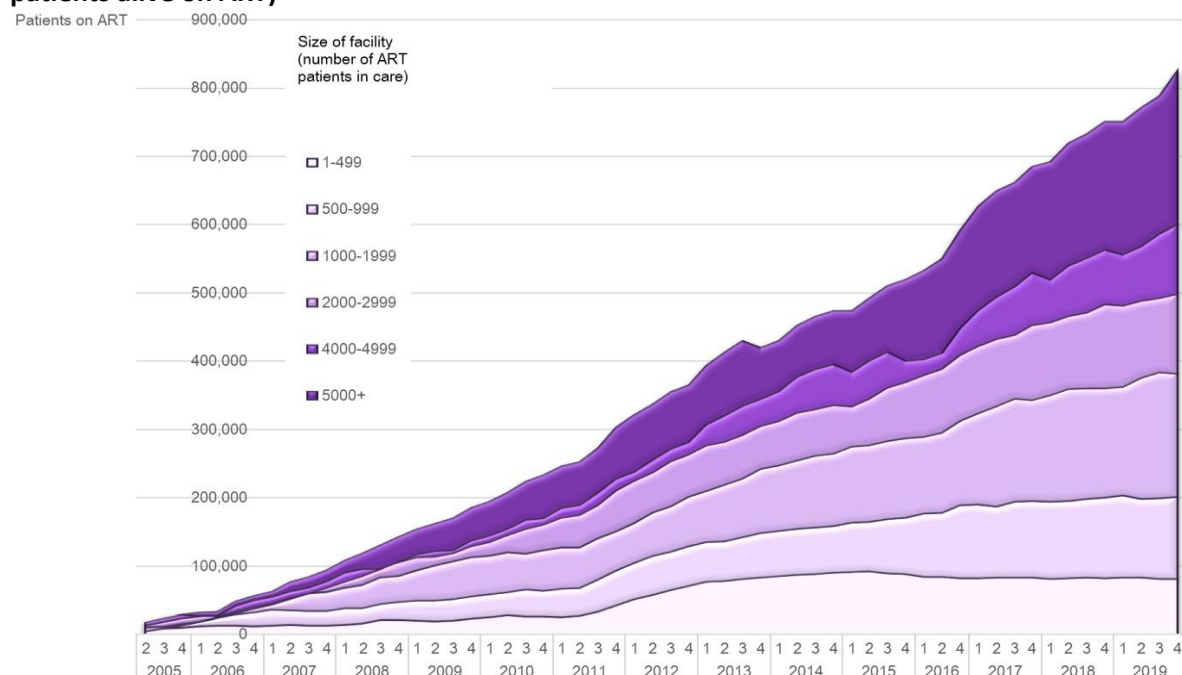
**833,227 patients were alive on ART** by the end of December 2019. This is equivalent to **78% ART coverage** among the estimated 1,066,878 HIV positive population in Malawi in 2019 and it means that the revised national ART scale-up target<sup>21</sup> for December 2019 (81% coverage) has been narrowly missed.

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

Out of the 1,746,902 patients ever initiated on ART, **833,227 (48%)** were retained alive on ART, **122,732 (7%)** were known to have died, **384,973 (22%)** were lost to follow-up and **10,702 (<1%)** were known to have stopped ART.

An estimated **787,609** adults and **45,668** children (<15 years)<sup>22</sup> were alive on ART by the end of December 2019. This represents **74%** (45,668/ 61,682) and **78 %** (787,609/ 1,005,196) ART coverage among children and adults, respectively.

**Figure 9: Patients alive on ART at the end of each quarter, stratified by size of facility (number of patients alive on ART)**



<sup>20</sup> There has been an implausible drop of cumulative transfer-ins and re-initiations due to a large-scale reclassification of registration status at electronic medical record (EMR) sites. A new software version is being deployed that may change these numbers in the next quarter.

<sup>21</sup> End of 2019 baseline and subsequent targets from the 2020-2025 National Strategic Plan for HIV.

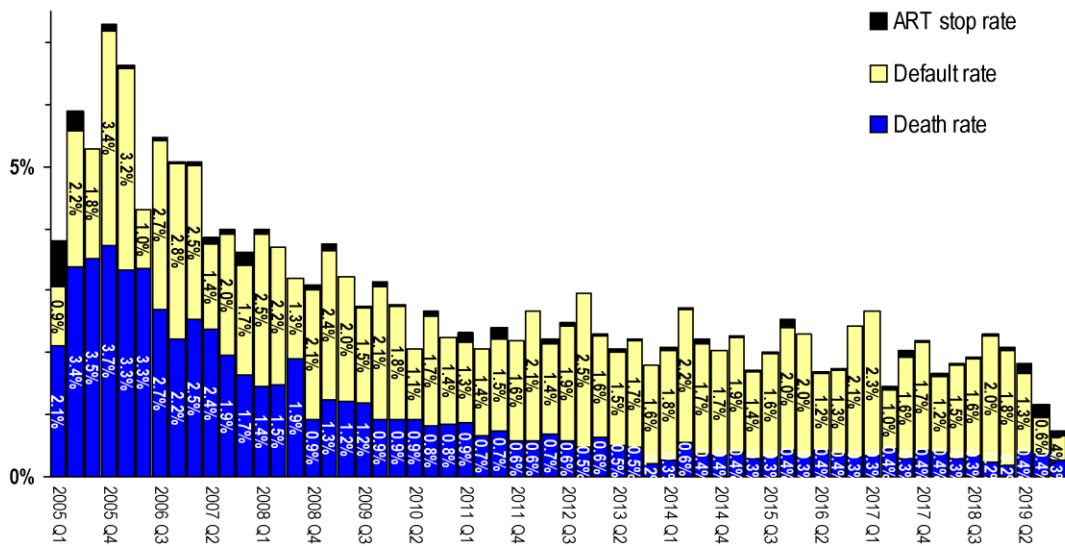
<sup>22</sup> The total national number of ART patients with current age <15 years is extrapolated from the (5.5%) of all patients at EMR sites who were <15 years at the end of Q4 2019.



**Figure 9** shows the increase of patients alive on ART by the end of each quarter, stratified by facility volume. The net increase of 7192 patients alive on ART between October and December 2019 was slightly higher than last quarter (6,138). **Figure 8** also shows the decentralization of Malawi’s ART program that followed the opening of over 300 new ART sites with the introduction of Option B+ in Q3 2011. During 2012 and 2013, the greatest increase in ART patient numbers was seen at sites with fewer than 500 patients alive on ART. However, patient numbers at the high and ultra-high burden sites have continued to increase considerably in the more recent quarters. By the end of December 2019, **43%** of the national ART patient cohort was in care at sites with fewer than 2,000 patients.

**Figure 10**  
**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 10** 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 further significant decrease in the calculated defaulter rate (0.30%) from 0.61% in 2019 Q3. Loss to follow-up (‘defaulters’) include undocumented ‘silent’ transfers, undocumented mortality and patients actually stopping treatment. The recent decline LTFU is mainly explained by active tracing efforts organized by implementing partners that have resulted in many patients who were previously reported as LTFU being re-classified as “transferred out” or “died”. Previous active tracing efforts were usually unable to track down patients who were lost more than a few months ago and it is difficult to confirm the validity of this recent large scale reclassification of follow-up outcomes at the program level. Efforts to harmonize strategies for patient retention are currently ongoing, including national standard operating procedures (SOPs) and tools for linkage and retention aiming to better track patients who miss appointment and document outcomes.

At national level, there were **2,274** new deaths, **3,524** new defaulters and **592** new confirmed stops in Q4 2019. This translates into a quarterly death rate of **0.3%** and a defaulter rate of

**0.4 %** among the patients alive and on treatment in this quarter. The stop rate has decreased from 0.23 % in 2019 Q3 to 0.07% in 2019 Q4 which is likely attributed to re-classification and potential misclassification of outcomes from the EMR sites that happened in 2019 Q4.

The usual analysis of early vs. late mortality trends was not possible this quarter due to implausible changes in reported death outcomes related to the distortions described above.

#### 11.4 ART Cohort Survival Analysis

A 12 month ‘**cohort outcome survival analysis**’ was conducted for patients registered in Q4 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 Q4 2018. A further subgroup analysis was done for women who started ART under **Option B+** Q2 of 2019.

**72% of adults** and **76% of children** were retained alive on ART after 12 months on treatment. 12-month retention rates were similar for adults (70%) and children (75%) in the previous quarter. These programmatic monitoring results remain below the WHO target of 85%, but actual retention rates are thought to be about **10%** higher due to this misclassification of ‘silent transfers’ as ‘defaulters’ in clinic-based survival/retention analysis. A population-based study in Karonga district with individual linkage showed that **92%** of patients started in 2011-2012 were retained after 12 months on ART while routine monitoring data showed **79%** retention rates for the same period.<sup>23</sup>

**6-month group cohort survival** outcomes were known for **5,445** women registered as having started ART under Option B+ in Q2 2019. This is 345 (6%) fewer than the number of women registered under Option B+ in the quarterly cohort analysis in Q2 2019. This discrepancy is likely due to errors in data abstraction.<sup>24</sup> The 5,445 women in this cohort survival analysis include 596 (11%) women who transferred between sites. These transfers are double counted and discounted from the denominator (4,849) for the calculation of retention rates.

**3,726 (77%)** women in this cohort were retained at 6 months after registration. Of those not retained, **1,095 (98%)** were lost to follow-up, **8 (1%)** were known to have stopped ART and **20 (2%)** were known to have died.

**12-month group cohort survival** outcomes were known for **5,891** women registered as having started ART under Option B+ in Q4 2018. This exceeds by 202 (3%) the number of women registered under Option B+ in the quarterly cohort analysis in Q4 2018. This discrepancy is likely due to errors in data abstraction.<sup>25</sup> The **5,891** women in this cohort survival analysis

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<sup>23</sup> Koole, O., Houben, R. M. G. J., Mzembe, T., Van Boeckel, T. P., Kayange, M., Jahn, A., Crampin, A. C. (2014). Improved retention of patients starting antiretroviral treatment in Karonga District, northern Malawi, 2005-2012. *Journal of Acquired Immune Deficiency Syndromes* (2014), 67(1), e27–33. doi:10.1097/QAI.0000000000000252

<sup>24</sup> Group cohort survival analyses were not available from some sites with electronic data systems. ‘Reason for starting’ may be reclassified for some patients, leading to minor inconsistencies in patients included in group cohort survival analyses.

<sup>25</sup> Group cohort survival analyses were not available from some sites with electronic data systems. ‘Reason for starting’ may be reclassified for some patients, leading to minor inconsistencies in patients included in group cohort survival analyses.

include 1,049 (18%) women who transferred between sites. These transfers are double counted and discounted from the denominator (**4,842**) for the calculation of retention rates.

**3,483 (72%)** of women in this cohort were retained at 12 months after registration. **1,315 (97%)** of those not retained were lost to follow-up, 20 (**1%**) were known to have stopped ART and **24 (2%)** were known to have died.

## ART survival analysis

Malawi (National)

2019 Q4 (Quarter)

### 6 month survival OptionB+

#### Survival and retention in ART program

\*

##### ART cohort registration group outcomes

Total ART clinic registrations	5,445	100%
Transfers out (double counted)	596	11%
Total not transferred out (patients in cohort)	4,849	89%
Total alive on ART	3,726	77%
Total not retained	1,123	23%
Defaulted	1,095	98%
Stopped ART	8	1%
Died	20	2%

### 12 month survival OptionB+

#### Survival and retention in ART program

\*

##### ART cohort registration group outcomes

Total ART clinic registrations	5,891	100%
Transfers out (double counted)	1,049	18%
Total not transferred out (patients in cohort)	4,842	82%
Total alive on ART	3,483	72%
Total not retained	1,359	28%
Defaulted	1,315	97%
Stopped ART	20	1%
Died	24	2%

## 11.4.1 Secondary outcomes of patients retained on ART

833,277 patients who were alive on ART and remained registered at their facilities have documented secondary outcomes.

### ART Regimens

**800,994 (96%)** of patients were on first line regimens. The number of patients on 2<sup>nd</sup> line ART increased by 1,670 from 28,176 in the previous quarter, reaching **29,846 (4%)** by the end of Q4. **2,437 (<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, **18,400 (2%)** were on paediatric formulations and **17,485 (95%)** of these were on the previous standard first line for children (regimen 2P: AZT/3TC/NVP). The majority of patients on 1<sup>st</sup> line ART had transitioned from regimen **5A** (tenofovir / lamivudine / efavirenz) 210,935 (**27%**) to the new standard first line regimen **13A** (tenofovir / lamivudine / dolutegravir) **554,060 (71%)**.

## Adherence to ART

Completeness of adherence reporting has remained very high: **811,507 (97%)** of all patients retained in care had the number of missed doses documented at the most recent visit before end of the quarter evaluated. The classification of adherence levels is based on a combination of physical pill counts and self-reported number of doses missed in the last dispensing interval. **549,201 (68%)** of patients with documented adherence were classified as >95% adherent. The implausibly low proportion with good adherence is inconsistent with the high viral suppression rates in the overall cohort and caused by a known error in one version of the point of care EMR system that was in use at many sites this quarter. A system update and bug fix is being deployed and data quality is expected to improve in the coming quarters.

## ART Side Effects

**828,627 (99%)** patients on ART had information on drug side effects documented at their last clinic visit before end of December 2019. **10,156 (<1%)** of patients with information had documented side-effects. The prevalence of side effects had stabilized at low levels following the full transition to regimen 5A (tenofovir / lamivudine / efavirenz) that started in July 2013 and appears to decline further following the recent transition to DTG-based regimens.

### 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. 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

**167,720** VL samples were drawn in the reporting period and documented in the facility sample logbook. **144,047 (86%)** of these were for routine/scheduled VL monitoring; **20,759 (12%)** were extraschedular and **2,914 (2%)** were replacements of lost samples. **20%** of the extraschedular samples were targeted (suspected treatment failure) and **80%** were follow-up samples after an initial high VL.

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

#### Final Results from Sample Logbooks

**178,975** samples were drawn by facilities between April and June 2019 and results were documented for **163,934 (92%)** of these. **82,222 (46%)** results were received at the facility within 4 weeks of sample collection; **33%** were received between 5-8 weeks and **8%** between 9-12 weeks. The remaining **13%** were received after 12 weeks or were still missing. **21%** of patients were notified of their result within 4 weeks of sample collection, **25%** were notified within 5-8 weeks and **15%** within 9-12 weeks. **69,051 (38%)** of 163,934 were either notified after 12 weeks or the notification was still pending. **99%** of the results were printed in the lab and delivered at the facility and **1%** were electronically transmitted.

**163,934 (92%)** of samples produced valid VL test results. **615 (<1%)** samples were rejected or the results were invalid and **14,426 (8%)** of samples had outstanding or missing results.

**148,304 (90%)** results were suppressed below 1000 copies/ml and **15,630 (8%)** were high ( $\geq 1000$  copies/ml).

### Outcomes from High VL Registers

Between October and December 2019, **20,351** high VL results ( $\geq 1000$  copies/ml) were received at facilities and entered in the High VL Registers. **18,947 (93%)** of these were from routine monitoring samples, **1,132 (6%)** from targeted samples and **272 (1%)** from repeat samples. **12,187 (60%)** patients had completed intensive adherence support by December 2019 and follow-up samples were drawn for **10,152 (50%)**. Valid results were recorded for **7,932 (78%)** of follow-up samples and **68%** of these were re-suppressed ( $< 1000$  copies/ml). A final treatment decision was available for **6,927** high VL patients. **5,493 (79%)** were maintained on the current regimen, **1,405 (20%)** were switched to second line and **29 (<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 (LIMS)

The number of VL results produced decreased from 178,512 in Q3 to **167,675 in Q4** 2019. Malawi now has a total of **13** PCR platforms in **10** molecular labs. All labs used the MOH lab information management system (LIMS) for registration of samples and storage of results. The Diagnostics Department is also piloting the use of point-of-care (POC) VL machines at 10 facilities and the validation results are currently being analysed. The POC data are not included in this report. The following results are based on an analysis of exported LIMS data.

**165,675** VL results were dispatched from the labs to 645 sites between October and December 2019. 77 sites accounted for half of all results released this quarter.

**23,900 (13%)** of 178,512 samples processed were plasma and **154,612 (87%)** were DBS.

Lab	Samples Processed			Turn-around Time (Days) <sup>§</sup>
	Plasma	DBS	Total	
DREAM Blantyre	696	14,473	<b>15,169</b>	27
DREAM Balaka	544	12,904	<b>13,448</b>	30
Kamuzu CH	4,852	19,003	<b>23,855</b>	17
Mzimba DH	0	6,170	<b>6,170</b>	14
Mzuzu CH	0	10,318	<b>10,318</b>	16
Nsanje DH	0	13,207	<b>13,207</b>	29
Partners in Hope	1,881	20,435	<b>22,316</b>	40
QECH	3,478	22,311	<b>25,789</b>	53
Thyolo DH	0	11,901	<b>11,901</b>	27
Zomba CH	7,803	17,699	<b>25,502</b>	43
<b>Total</b>	<b>19,254</b>	<b>148,421</b>	<b>167,675</b>	<b>29</b>
<b>§ Median days between sample collection and printing of results in lab</b>				

Kamuzu CH, Queen Elizabeth CH, DREAM Balaka and Zomba CH and Partners in Hope labs produced 49 % of all VL results. The median interval between sample collection and printing of results was **27 days** at the national level, ranging from **14 days** at Mzimba DH to **53 days** at Queen Elizabeth CH. The most significant delays occurred between sample receipt and process run in the lab (median 19 days), while on average only 6 days elapsed between samples draw and sample receipt in the lab. The overall system capacity remains challenged by the high number of samples.

Reason	0-999		1000+		Total
<b>Routine</b>	<b>124,018</b>	<b>93%</b>	<b>9,357</b>	<b>7%</b>	<b>133,357</b>
<b>Targeted</b>	<b>25,928</b>	<b>86%</b>	<b>4,384</b>	<b>14%</b>	<b>30,312</b>
<b>Other/unk</b>	<b>1,073</b>	<b>82%</b>	<b>228</b>	<b>18%</b>	<b>1,301</b>
<b>Total</b>	<b>151,019</b>	<b>92%</b>	<b>13,969</b>	<b>8%</b>	<b>164,988</b>

**133,375 (81%)** of VL results released this quarter were classified as *routine scheduled*<sup>26</sup>. This is **64%** of the estimated 207,932 ART patients passing a VL monitoring milestone this quarter. **30,312 (18%)** of samples were classified as *targeted (suspected treatment failure / repeat)* and for **1,301 (1%)** the reason for the sample was 'other' or not specified. **93% (124,018)** of patients with a routine viral load result this quarter achieved viral suppression (i.e. <1,000 copies/ml). This mean the target for the "3<sup>rd</sup> 90" was exceeded.

Viral suppression rates were significantly lower for routine samples among children (0-9 yrs: **60%**) 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 **91%**, **93%** and **94%**, respectively. 88% of routine VL samples were from adults 20+ years. Patient age was not recorded for 6,788 (5%) of routine samples.

The **30,312** targeted VL results this quarter exceed the 10,172 routine VL results  $\geq 1000$  copies/ml from the previous quarter by a factor of three. Patients with an initial routine VL result  $\geq 1000$  copies/ml are supposed to receive a follow-up VL test after 3 months of intensive adherence support (upon confirmation of good adherence). However, only 3,872 samples were marked as *confirmatory (follow-up)* and 1,192 as *targeted (treatment failure suspected)* on the lab request form. 25,483 were marked as 'routine' and retrospectively classified as *follow-up* due to a previous result collected from the same patient within 1 year before the current sample. This suggests challenges with the classification of reasons for testing, delayed follow-up and/or low utilization of VL results for patient management. A large proportion of patients with an initial high VL are likely to re-suppress after intensified adherence counselling and the confirmation of treatment failure usually depends on a second VL result of  $\geq 1000$  after 3 months. There was a net increase of 1,566 patients on 2<sup>nd</sup> line ART this quarter which is equivalent to 15% of the 10,172 routine VL results  $\geq 1000$  copies/ml from the previous quarter. The facility VL registers were designed to facilitate tracking of samples and results and to improve appropriate follow-up action on high VL results.

The time on ART was entered for only **87,096 (65%)** of 133,375 routine samples registered on the LIMS and only **25,878 (19%)** of these were drawn on schedule (from 1 month before to 3

<sup>26</sup> In addition to the reason specified on the lab form, samples were re-classified as 'follow-up' if another sample from the same patient was analysed within 1 year before the current one.



months after a VL milestone). The proportion of patients with VL <1000 was **91%, 93%, 94%, 94%, 94%** and **94%** at 6, 12, 24, 36, 48 and 60 months on ART respectively. Viral suppression rates of samples drawn on schedule were similar to those of 'catch-up' (extra-schedular) samples and samples with unknown timing both at 93%.

## 11.5 TB / HIV Management

**3,858 (99%)** of 3,886 new TB patients had their HIV status ascertained this quarter and **1,819 (47%)** of these were HIV positive. **1,659 (91%)** 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 707 out of 928 facilities offering STI management according to the *2013-14 Service Provision Assessment*<sup>27</sup> in Malawi. The site-level reports included here may therefore only represent 76% 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 **103,345** STI cases were treated in Q4 2019. Considering the 76% site-level completeness of reporting, this number is estimated to represent a total of **135,980** STI cases treated. This is equivalent to **56%** of the estimated quarterly 241,725 STI cases in the population (extrapolation from 2015/16 MDHS)<sup>28</sup>.

Out of **103,345** documented clients treated, **41,800 (40%)** were male and **61,545 (60%)** were female. **9,779 (16%)** of female STI clients were pregnant. **12,688 (30%)** of male STI clients were circumcised. **69,518 (68%)** clients were 25 years and above, **23,316 (23%)** were 20-24 years and **9,725 (9%)** were under 20 years old.

### 12.2 Client Type and STI History

**90,854 (88%)** of clients were symptomatic and **12,391 (12%)** were asymptomatic (treated as partners). Among symptomatic clients, **84,717 (93%)** were index cases and **6,137 (7%)** were partners. A total of **28,814** partner notification slips were issued, equivalent to an average of 0.34 slips per index case. Considering the 28,814 partner notification slips issued, **64%** (18,628) of those notified presented to the clinic. **76,466 (74%)** of clients presented with their first lifetime episode of STI, **19,959 (74%)** clients reported to have had an STI more than 3

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<sup>27</sup> Ministry of Health, & ICF International. (2015). Malawi Service Provision Assessment (SPA) 2013-14. Lilongwe, Malawi and Rockville, Maryland, USA. Retrieved from <http://dhsprogram.com/pubs/pdf/SPA20/SPA20.pdf>

<sup>28</sup> According to the 2015/16 MDHS, 14.7% of women (15-49 years) and 9.6% of men (15-64 years) reported STI symptoms in the past 12 months. A total of 966,900 annual STI cases are estimated by applying these proportions to the 4.1 million men and 3.9 million women in these age groups in the 2016 population (NSO projections). Quarterly STI cases are assumed as ¼ of the estimated annual cases in the population.

months ago and **6,920** (26%) of clients reported having had an STI within the last three months. Re-occurrence of an STI after a recent episode may be due to re-infection or treatment failure.

### 12.3 HIV Status

HIV status was ascertained for **92,845 (90%)** clients and **17,658 (19%)** of these were HIV positive. **2,321 (13%)** of positives were identified through a new test initiated at the STI clinic, while **15,337 (87%)** presented with a documented previous positive HIV test result. **14,705 (96%)** of clients with a previous positive HIV test result were on ART.

Given the high risk of recent HIV infection among STI clients, all clients with unknown status and those with a new negative test result should be referred for (repeat) HIV testing and counselling. **38,770 (45%)** of the 88,687 STI clients with unknown or new negative test result were referred for repeat HTS. **4,864** patients were reported as “referred for ART”. This exceeds the sum of new positives (2,321) and previous positives not on ART (632) and is likely explained by wrong documentation of ART referrals for patients already on ART.

The rate of HIV status ascertainment at STI clinics has improved considerably over time. This is due to increased numbers of dedicated testing staff available at the sites (HDAs). Actual HIV ascertainment rates may be even slightly higher due to weaknesses with back-referral from HIV testing rooms at sites where testing is not provided directly in the STI clinic. It is worth noting that a substantial proportion of clients who are aware of their HIV infection present with a new episode of an STI. This may suggest poor translation of positive living strategies promoted during counselling, but could also be in small part due to the increased risk of recurrence of HSV-2 and balanitis among HIV-infected clients.

### 12.4 STI Syndromes and Referrals

The most common syndrome was abnormal vaginal discharge (AVD) with **32,191 (29%)** cases, followed by urethral discharge (UD, **28,341** cases), genital ulcers (GUD, **13,827** cases) and lower abdominal pain (LAP, **13,376** cases). Serologically confirmed syphilis accounted for 11% of the cases. Scrotal swelling, bubo and genital warts each accounted for 1% of cases.

## 13 Supply Chain Management of HIV Program Commodities

### 13.1 Quantification and procurement planning

The routine quarterly quantification review was based on Q4 2019 ART cohort analysis and physical site level stock data collected during the January supervision visits. This review informed the quantification of ARVs and test kits and the submission of new orders through Pooled Procurement Mechanism (PPM). The program has also continued to provide quarterly supply planning updates to the Procurement Services Agents (PSA).

Malawi has made significant progress on the planned transition to dolutegravir based regimen which commenced in January 2019. Over **81%** of patients that were forecast to transition to **tenofovir/lamivudine/dolutegravir 300/300/50mg (TLD)** have been transitioned (552,936 out of the projected 686,610 by end 2019).



The Department for HIV and AIDS initiated orders for ARVs and OI related commodities through I –PLUS solutions valued at **USD 45.2 million** during Q4 2019 to maintain adequate stocks in the pipeline and to ensure uninterrupted supply at all sites.

### 13.2 Quarterly supply chain support during Q4 integrated supervision

Supply chain and logistics officers from district and central level provided stock management support at 748 sites during the Q4 2019 integrated HIV program site supervision. This included a physical inventory at all sites and ad-hoc mentoring in stock management at health facilities with poor performance. There was a further overall improvement in site-level stock management for HIV commodities.

**Table 8** shows the total stocks found at the sites and in the central warehouse, and the estimated consumption rates for all commodities.

### 13.3 Availability of standard first line ARVs

Adequate stock levels of TLD in packs of 30 and 90 tablets were maintained at over 730 sites during this period, with an even split of 1.78 million packs of 30's and 1.77 million packs of 90's. This has enabled sites transition patients eligible for 6 month dispensing with no stock out risk in country. Over 9 months of stock of TLD 90's arrived in country in January 2020.

The stock report analysis showed 3.2 months of stock for tenofovir/lamivudine/efavirenz 300/300/600mg (TLE) during supervision. This triggered an expedited transition notification to all high-volume sites that had over 500 patients registered on TLE.

Transition of paediatric patients to lopinavir/ritonavir (LPV/r) based regimens was set to commence during this quarter and LPV/r granules were delivered to 40 high volume sites. The stock report analysis showed 5.1 months of stock for LPV/r tablets and pipeline orders for this formulation were delayed during Q4 2019. Manufacturers continue to report production delays for LPV/r-based formulations and over 220,000 packs ordered in 2019 have been rescheduled for arrival in Q1 and Q2 2020. There is a need for close monitoring of all orders in the pipeline.

### 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 49 and 50) took place during Q4 2019.

Logistics monitoring and supply chain trail visits for distribution round 47 and 48 were conducted at 38 selected health facilities to review performance of the third-party logistics provider and site-level stock management documentation. All visited health facilities 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.

During Q4 2019, the logistics team at the Department of HIV and AIDS coordinated **1,906 individual commodity transactions** between ART sites to mitigate stock imbalances (50%

ARVs; 16% Test kits; 34% Others). All transactions were managed and authorized using the HIV Department Supply Chain Hot Line, a toll-free facility that was set up to facilitate communication between the health facilities and the central level. Health workers are able to communicate supply chain and other HIV commodities related issues that need to be resolved by the technical team at the department in a timely manner.

**Table 8**

Total stocks of HIV program commodities at all sites visited during the 2019 Q4 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 03/02/2020

Inventory unit	Item	Sites with any Stock	Total Physical Stock		Consumption/ Month	Months of Stock *	
			At Sites	In Warehouse		At Sites	Wareh.
<b>tins</b>	ABC / 3TC 120 / 60mg tins (30 tabs)	669	400,000	234,042	63,564	6.3	3.7
	ABC / 3TC 600 / 300mg tins (30 tabs)	468	39,705	266,160	23,295	1.7	11.4
	ATV / r 300 / 100mg tins (30 tabs)	603	47,171	60,897	21,383	2.2	2.8
	AZT / 3TC / NVP 300 / 150 / 200mg tins (60 tabs)	604	155,530		12,017	12.9	
	AZT / 3TC / NVP 60 / 30 / 50mg tins (60 tabs)	678	211,343	246,757	43,713	4.8	5.6
	AZT / 3TC 300 / 150mg tins (60 tabs)	722	60,323	6,432	16,280	3.7	0.4
	AZT / 3TC 60 / 30mg tins (60 tabs)	635	35,103	2,406	3,277	10.7	0.7
	DRV 600mg tins (60 tabs)	16	393	2,597	71	5.5	36.6
	DTG 50mg tins (30 tabs)	715	73,592	648,254	38,359	1.9	16.9
	EFV 200mg tins (90 tabs)	243	3,286	1,537	355	9.3	4.3
	EFV 600mg tins (30 tabs)	363	16,357	10,512	418	39.1	25.1
	ETV 100mg tins (120 tabs)	7	113		0	0.0	0.0
	LPV / r 100 / 25mg tins (60 tabs)	451	70,321	29,779	19,785	3.6	1.5
	LPV / r 200 / 50mg tins (120 tabs)	404	16,562	21,002	1,797	9.2	11.7
	LPV / r 40 / 10mg tins (120 granules)	40	15,112	52,348	10,491	1.4	5.0
	LPV / r 40 / 10mg tins (120 pellets)	30	4,102	5,463	0	0.0	0.0
	NVP 200mg tins (60 tabs)	535	37,248		2,676	13.9	
	NVP 50mg tins (60 tabs)	238	7,671	8,127	1,400	5.5	5.8
	r 100mg tins (60 tabs)	15	665	2,022	0	0.0	0.0
	r 25mg tins (30 tabs)	404	4,544	35,336	660	6.9	53.6
RAL 400mg tins (60 tabs)	5	191	34	0	0.0	0.0	
TDF / 3TC / DTG 300 / 300 / 50mg tins (30 tabs)	730	1,511,203	277,273	554,060	2.7	0.5	
TDF / 3TC / DTG 300 / 300 / 50mg tins (90 tabs)	729	796,422	973,965	184,687	4.3	5.3	
TDF / 3TC / EFV 300 / 300 / 600mg tins (30 tabs)	547	479,317	194,808	210,935	2.3	0.9	
TDF / 3TC 300 / 300mg tins (30 tabs)	738	117,720	137,136	10,083	11.7	13.6	
<b>bottles</b>	Fluconazole (Diflucan) 50mg / 5ml bottles (50 ml)	4	1,805		91	19.8	
	NVP 100mg/ml bottles (100 ml)	602	27,526	83,673	7,334	3.8	11.4
<b>vials</b>	Benzathine Penicillin 144g vials (50 each)	520	62,070	11,500	1,843	33.7	6.2
	Bleomycine 15,000IU vials (1 each)	27	5,137		0	0.0	0.0
	Ceftriaxone 1g vials (10 each)	251	71,034		156,429	0.5	
	Depo-Provera 150mg/1ml vials (25 each)	469	440,614		74,995	5.9	
	Fluconazole (Diflucan) 2mg / 1 ml vials (100 ml)	13	4,863	11,720			
	Gentamicin 80mg / 2ml vials (50 each)	643	1,369,903		64,859	21.1	
	Paclitaxel 6mg/ml vials (1 each)	8	2,029	2,144			
	Streptomycin 1 g vials (50 each)	21	10,659				
Vincristine 1mg / 1ml vials (1 each)	11	2,034		0	0.0	0.0	
<b>tabs</b>	Aciclovir 200mg blister packs (500 tabs)	42	108,785		942,952	0.1	
	Aciclovir 200mg tins (100 tabs)	478	2,255,601	76,300	0	0.0	0.0
	Azithromycin 500mg blister packs (3 tabs)	345	35,669		19,779	1.8	
	Ciprofloxacin 500mg blister packs (100 tabs)	324	1,044,276	523,500	0	0.0	0.0
	Clotrimazole 500mg boxes (1 each)	477	185,648	2,891	0	0.0	0.0
	Codeine 30mg tins (100 tabs)	10	491,062		0	0.0	0.0
	Cotrimoxazole 100 / 20mg blister packs (1000 tabs)	672	66,955,751	58,052,000	16,907,582	4.0	3.4
	Cotrimoxazole 400 / 80mg tins (1000 tabs)	597	41,265,000		24,728,745	1.7	
	Cotrimoxazole 960mg blister packs (1000 tabs)	726	63,004,736	158,178,000	24,498,343	2.6	6.5
	Doxycycline 100mg blister packs (500 tabs)	239	1,935,901	4,934,500	0	0.0	0.0
	Doxycycline 100mg tins (1000 tabs)	238	1,567,872		366,560	4.3	
	E thambutol (E) 100 mg blister packs (100 tabs)	174	151,349				
	E thambutol (E) 400 mg blister packs (672 tabs)	11	19,788				

Inventory unit	Item	Sites with any Stock	Total Physical Stock		Consumption/ Month	Months of Stock *	
			At Sites	In Warehouse		At Sites	Wareh.
	Erythromycin 250mg tins (100 tabs)	26	71,100		128,585	0.6	
	Erythromycin 250mg tins (1000 tabs)	174	1,004,664	601,000	0	0.0	0.0
	Fluconazole (Diffucan) 200mg tins (28 tabs)	170	791,296	116,340	0	0.0	0.0
	Ibuprofen 200mg tins (100 tabs)	258	3,375,854		1,264,050	2.7	
	Isoniazid (H) 100mg blist packs (100 tabs)	351	2,838,290		0	0.0	0.0
	Isoniazid (H) 300mg blist packs (672 tabs)	214	25,159,614	7,707,840	0	0.0	0.0
	Isoniazid (H) 300mg tins (1000 tabs)	5	12,502		0	0.0	0.0
	Metronidazole 200mg tins (1000 tabs)	432	6,989,468	11,410,000	0	0.0	0.0
	Morphine 10mg blist packs (60 tabs)	41	379,536		322,126	1.2	
	Pyridoxine 25mg tins (100 tabs)	211	10,182,660	10,331,100	#####	0.0	0.0
	RH 150 / 75 mg blist packs (672 tabs)	309	1,484,911				
	RH 75/50mg blist packs (84 tabs)	87	120,932				
	RHE 150 / 75/ 275 mg blist packs (1000 tabs)	4	2,592				
	RHZ 75/50/150mg blist packs (84 tabs)	132	116,123				
	RHZE 150/75/400/275mg blist packs (672 tabs)	338	1,030,060				
<b>sheets</b>	ART pat. card adult (yellow) Ver7 bundles (50 she	336	79,019	68,250			
	ART pat. card paed. (blue) Ver7 bundles (50 shee	95	7,754				
	Exposed child card (pink) Ver2 bundles (50 sheet	440	44,577	102,900	4,909	9.1	21.0
	Family HTC Referral Slip bundles (100 sheets)	443	201,094				
	Polythene sleeve bundles (100 sheets)	60	7,291		17,125	0.4	
	STI Partner Referral Slip bundles (100 sheets)	84	12,238				
<b>tests</b>	Cryptococcal antigen CrAg bundles (50 each)	30	7,654	85,500	0	0.0	0.0
	DBS kit (filter paper, lancet, etc.) 70ul boxes (50 t	712	327,515	142,150	89,219	3.7	1.6
	Determine HIV1/2 boxes (100 each)	707	1,651,624	2,912,900	313,261	5.3	9.3
	Determine TB LAM Ag bundles (100 each)	26	13,887	102,200	0	0.0	0.0
	OraQuick HIV Self-test bundles (25 each)	383	277,245	851,850	0	0.0	0.0
	SD Bioline Syphilis boxes (30 each)	652	193,712	69,330	54,926	3.5	1.3
	Uni-Gold HIV1/2 boxes (20 each)	706	255,822	228,960	25,664	10.0	8.9
<b>pieces</b>	Condoms female boxes (1000 each)	528	311,694				
	Condoms male boxes (144 each)	701	50,770,868	57,558,672	8,334,580	6.1	6.9

\* '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

- **450** pharmacy personnel were trained on 2018 Malawi Integrated Guidelines and Standard Operating Procedures for Clinical HIV Services.
- **294** Nurses and clinicians were trained and certified for the first time in the Integrated ART/PMTCT/TB guidelines.
- **90** Nurses and clinicians were refreshed on the 2019 guideline addendum to the 4<sup>th</sup> Edition of the Malawi Integrated Guidelines and Standard Operating procedures for Clinical HIV Services.
- **371** providers (incl. pharmacy personnel, nurses, clinicians & laboratorians) were trained in Advanced HIV Disease (AHD).

## 14.2 VMMC

**21** participants were trained in the initial VMMC training. **10 (48%)** of 20 were Medical Assistants, **7 (33%)** clinicians and 4(19%) Nurses. All participants passed the certification examination.

## 14.3 HIV Testing Services

**26** HIV Diagnostic Assistants (HDAs) were trained in conventional testing and oriented in the HIV Self-testing and Index testing.

## 15 Participants in the Q4 2019 Supervision (13-24 January 2020)

Knox Banda (TB Zonal Supervisor, MOH)  
 Leonard Banda (, MoH)  
 Lucy Banda (, MOH)  
 Sam Banda (, moh)  
 Samuel Banda (, MOH)  
 Wells Banda (CO, MOH)  
 Semu Bangelo (, MOH)  
 Kalemera Beata (, AHF)  
 Robert Beston (, MOH)  
 Luciano Billion (Clerk, LIGHTHOUSE)  
 Thomas Biseck (, MOH)  
 Annie Biza (Nurse, MDF)  
 Regina Bwanali (, MOH)  
 Herbert Chafulumira (, MOH)  
 Duncan Chakana (, moh)  
 Rachel Champiti (, MOH)  
 Andrew Chapani (, MGBE)  
 Elita Chasanga (, MOH)  
 Elizabeth Chatsika (CO, CHAM)  
 Ronard Chawinga (nurse, MOH)  
 Davie Chawiya (, moh)  
 Margaret Chigona (CO, Blantyre DHO)  
 Grace Chikhwaya (, MOH)  
 Grace Chikhwaya (, MOH)  
 Kondwani Chikoti (CO, MOH)  
 Patrick Chikuni (, MoH)  
 Lusayo Chikuta (, Nkhatabay)  
 Chimwemwe Chimaliro (, MOH)  
 Spain Chimaliro (, moh)  
 Charles Chimunya (Logistics, MOH)  
 Tiwonge Chimpandule (, MoH)  
 Peter Chimphero (CO, MOH)  
 Matthews Chintenga (, Lighthouse)  
 Chikhulupiliro Chimwaza (, MOH)  
 Rhoda Ching'ani (, Light House)  
 Patience Chingwalungwalu (, MoH)  
 Yunus Chiosa (, NTP)  
 Diana Chipande (, MOH)  
 Grace Chipanga (Nurse, Private)  
 Clement Chiphota (CO, MoH)  
 Esnat Chirambo (, MoH)  
 Patrick Paul J M Chirwa (TB Zonal Supervisor, NTP)  
 Samson Chitsulo (, other)  
 Willie Chiumbuzo (, MoH)  
 Dan Chiundu (, MOH)  
 Brown Chiwandira (MA, MOH)  
 Madalitso Chosalawa (, MOH)  
 Stuart Chuka (CO, MBCA)  
 Ackim Chuzu (, MoH)  
 Isaiah Dambe (, NTP)  
 Ruth Deula (, moh)  
 Andrew Dimba (, NTP)  
 Peter Donda (CO, Dedza DH)  
 Lackson Gawani (, MoH)  
 Symon Goliath (, Dignitas)  
 Suave Gombwa (, CHAM)  
 Grant Gondwe (, NTP)  
 Paul Gondwe (, MOH)  
 James Gundeni (, moh)  
 Sidder Hambisa (ENM, MOH)  
 Mirriam Hanjahanja (, cham)  
 Rhoda Jamu (, CHAM)  
 Shadreck John (, MoH)  
 Joe Jembe (, MoH)  
 Edwin Jumbo (, MoH)  
 John Kabichi (CO, MOH)  
 Francis Kachali (, MoH)  
 Lilian Kachali (Nurse, MOH)  
 Arlene Kachapira (, MoH)  
 Vera Kajawa (Nurse, MOH)  
 Agnes Kalitsiro (Nurse, Mlambe Mission Hospital)  
 Ashani Kaliza (, MOH)  
 Ethel Kaluluma (Nurse, MOH)  
 Richard Kamalizeni (, MOH)  
 Blessings Kamanga (Clerk, MOH)  
 Mary Kamiza (TB Zonal Supervisor, NTP)  
 Emmanuel Kampaliro (, MOH)  
 Gift Kamphika (MA, MOH)  
 Mercy Kamwela (, supervisor)  
 Cornelias Kang'ombe (, NTP)  
 Cornelius Kang'ombe (, NTP)  
 Annie Kanyemba (Nurse, MOH)  
 Henry Kanyerere (TB/HIV Program Officer, MOH)  
 Saulosi Kanyinji (, MoH)  
 Justice Kaphiri (, NTP)  
 Prosperina Kapwata (, Lighthouse)  
 Elsie Kasambwe (, other)  
 Elsie Kasambwe (, other)  
 Fredrick Kasanga (Nurse, MOH)  
 Annie Kaseka (RNM, MOH)  
 Paul Kaseka (, MOH)  
 Oscar Kasiyamphanje (Nurse, CHAM)  
 Catherine Kassam (, MOH)  
 Gift Kathumba (, Partners in Hope)  
 Margaret Katumbi (Nurse, MOH)  
 Rodrick Kaulere (CO, CHAM (Sister Tereza))  
 Absalom Kaunda (CO, MOH, Mzimba DHO)  
 William Kaunda (, MOH)  
 Jean Kayamba (Nurse, MOH)  
 Mera Kayira (CO, MOH)  
 Daniel Kazingatchire (, MOH)  
 Robert Khombe (, MOH)  
 Sydney Kubwalo (, MoH)  
 Charles Kwenje (, MoH)  
 George Lipande (CO, MOH)  
 Jesse Lobeni (Nurse, MOH)  
 Malumbo Luwina (Logistics, Kamuzu Central)  
 Rose Mabviko (, MOH)  
 Belito Madetsa (CO, MOH)  
 Mercy Makaika (Nurse, MOH)  
 Geoffrey Makhallira (, NTP)  
 Chifundo Makuluni (Nurse, MOH)  
 Grey Malata (, MOH)  
 Thokozani Malimelo (, MoH)  
 Pauline Maluwaya (, MOH)  
 Charles Mandambwe (, MoH)  
 Relia Mandindi (, Public)  
 Cecilia Manyawa (Nurse, MOH)  
 Fatsireni Mapulanga (, MOH)  
 Randof Maseya (, MOH)  
 Angela Masumba (, moh)  
 Jeke Mataya (, moh)  
 Steven Mawere (, Chichiri Prison Clinic)  
 Hannock Matupi (ARV clinician, MOH, Rumpho DH)  
 Martin Maulidi (CO, I-TECH)  
 Yanjanani Mawindo (, MoH)  
 Charles Mazunda (, MOH)  
 Felix Mbalale (CO, MOH)  
 Nyuma Mbale (, MoH)  
 Loyd Mbaza (Nurse, MOH)  
 Kingsley Mbewa (CO, MOH)  
 Stony Mbiriyawanda (, MOH)  
 Alice Mdolo (, MOH)  
 Dalitso Midiani (PMTCT Officer, MOH)  
 Miliyasi Misoya (CO, MOH)  
 Portifer Mission (, moh)  
 Owen Mitochi (, MOH)  
 Stanford Miyango (Pharmacist, MOH)  
 Towera Mjimapemba (, moh)  
 Chimwenwe Francis Mkandawire (IT Fellow, I-TECH)  
 Florence Mkandawire (, MOH)  
 Taonga Mkandawire (, moh)  
 Hermes Mlambe (, Chemonics)  
 Lameck Mlauzi (, NTP (MOH))  
 Offrey Mnduwira (CO, Police)  
 Yvonne Mnjeza (, MOH)  
 Joseph Mphasa (, MoH)  
 Noel Mphasa (TB Zonal Supervisor, NTP)  
 Henry Mphonde (CO, Lighthouse)  
 Tryness Mponda (NMT, MOH)  
 Willie Mpute (, MoH)  
 Chawanangwa Msonda (, MOH)  
 Catherine Flora Msukwa (, MoH)  
 Voster Msutu (, MOH)  
 Sosten Mtalika (, Dedza)  
 Egnatius Mtambalika (, DTO)  
 Temweka Mtenje (, MoH)  
 Clement Mtika (CO, MOH, Mzuzu CH)  
 Ekwala Mubiala (HIV Zonal Supervisor, MOH, UNV)  
 Dave Mhuasuwa (, MoH)  
 Yamikani Mulole (, MOH)  
 Yamikani Mulore (, MOH)  
 Fainala Muyila (Nurse, MOH)  
 Maxwell Mvona (, MoH)  
 Tereza Mvula (, MOH)  
 Thomas Mwale (, MOH)  
 Innocent Mwaluka (, moh)  
 Henry Mwamatembe (, MOH)  
 Patrick Mwamlima (, MoH)  
 Patrick Mwamulima (NMT, MOH)  
 Golden Mwathunga (MA, Press)  
 Anne Mwenye (, Private)  
 Tuwepo Mwitha (, MOH)  
 Riff Mzava (Nurse, MOH)  
 Peter Mzumara (ART clinician, MOH)  
 Austins Namondwe (CO, CHAM)  
 Nelson Nanchinga (, MOH)  
 Francis Nangantani (, moh)  
 Pepsy Nangwale (Nurse, MOH)  
 Overton Ndhlovu (, MOH)  
 Youngson Ngonya (, MoH)  
 Chisomo Ngwalo (, COM)  
 Hannock Ngwena (, NGO)  
 Charles Ngwira (, MoH)  
 Eunice Ngwira (, MOH)  
 Jephther Ngwira (, MoH)  
 Beatrice Nindi (, MoH)  
 Trevor Chifundo Nindi (, Balaka DHO)  
 Dumbo Njera (, MOH)  
 Hilda Njikhoo (, MOH)  
 Merium Nkangala (, moh)  
 Grace Juma Nkhata (Nurse, MOH)  
 Relia Nkhata Mandindi (Logistics, HIV Dept)  
 Hannah Nkhoma (, MOH)  
 Joe Nkhonjera (, moh)  
 Zinaumaleka Nkhono (, MOH)  
 Sam Nowa (Pharmacist, MOH)  
 George Nsitu (, MOH)  
 Jotham Nyasulu (, MOH)  
 Paul Nyasulu (CO, I-TECH)  
 Misonzi Nyatuka (Nurse, MOH)  
 Steven Nyika (, MOH)  
 Feliya Nyirenda (, Machinga)  
 Janet Nyirenda (, MOH)  
 Jannet Nyirenda (, KCH)  
 Mabvuto Nyirenda (, MOH)

Mike Nyirenda (CO, Lighthouse)  
Macjones Nyirongo (, MOH)  
Angella Nyondo (, MoH)  
Washington Ozitiosauka (CO, MOH)  
Laura Pangani (, moh)  
Kelvin Phiri (, EGPAF)  
Mackson Phiri (, PIH)  
Precious Phiri (, MoH)  
Tifera Phiri (, moh)  
Stanley Phombo (Nurse, MOH)  
Alice Sajeni (, moh)  
Dorica Sambo (Nurse, MOH)  
George Sankhulani (CO, Dignitas)

John Shadreck (, moh)  
Gabriel Simwanza (, MOH)  
Aleka Simwela (, moh)  
George Sinkala (CO, LIGHTHOUSE)  
Mr Sinkonda (CO, CHAM)  
Juliana Soko (ARV nurse, MOH,  
Livingstonia MH)  
Yohane Solomon (Nurse, MOH)  
Mark Suzumire (CO, MOH)  
Bruce Tambwali (Nurse, NGO)  
Andrea Tembo (Nurse, Dignitas)  
Harrison Tembo (CO, MOH)  
Vuso Tembo (, MoH)

Cecelia Tenesi (Nurse, MOH)  
Edith Thaulo (Nurse, MOH)  
Darlington Thole (CO, NGO)  
Biseck Thomas (, MOH)  
Chisomo Thondolo (Nurse, EGPAF)  
Harry Tsapa (CO, MOH)  
Linda Vito (, MOH)  
Peter Watson (, Lighthouse)  
Lloyd Wella (CO, MOH)  
Shaibu Witman (, 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.

**17<sup>th</sup> July 2020**

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



# HTC site report

Malawi (National)

2019 Q4 (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	882,345	100%
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#### Sex

Males tested	296,317	34%
Females tested	586,028	66%
Females non-pregnant	390,542	67%
Females pregnant	195,486	33%

#### Age

Children 0-14 yrs	83,119	9%
Children below 12 mths (Age group A)	1,257	2%
Children 12 mths - 14 yrs (Age group B)	81,862	98%
Adults 15+ years	799,226	91%
Young adults 15-24 years (Age group C)	356,265	45%
Older adults 25+ yrs (Age group D)	442,961	55%

#### HTC access type

PITC	661,609	75%
Family Referral Slip (FRS)	15,982	2%
Other (VCT, etc.) HTC access	204,754	23%

#### HTC first time / repeat

Never tested before	171,184	19%
Previously accessed HTC	711,161	81%
Last negative	680,988	96%
Last positive	29,029	4%
Last exposed infant	331	0%
Last inconclusive	813	0%

#### Counseling session type / Partner present

Counseled with partner / partner present	188,513	21%
Counseled alone / Partner not present	693,832	79%

#### Outcome summary (HIV test)

Single test negative	825,230	94%
Single test positive	0	0%
Test 1&2 negative	757	0%
Test 1&2 positive	54,320	6%
Test 1&2 discordant	2,038	0%

## HTC site report

Malawi (National)

2019 Q4 (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	853,167	97%
New negative	825,733	97%
New positive	25,451	3%
New positive (non-sex dissag)	2,207	9%
New positive (dissag by sex)	23,244	91%
New positive male	9,697	42%
New positive female	13,547	58%
New inconclusive	1,869	0%
New exposed infants	114	0%
Confirmatory results (previous positive clients)	29,178	3%
Confirmatory positive	29,011	99%
Confirmatory positive (non-sex dissag)	2,522	9%
Confirmatory positive (dissag by sex)	26,489	91%
Confirmatory positive male	10,972	41%
Confirmatory positive female	15,517	59%
Confirmatory inconclusive	167	1%

#### Partner / Family HTC referral slips

Sum of slips given	43,045	100%
Total clients presenting with referral slip	15,982	37%
Total failed referrals (slips not returned)	27,063	63%

### Clients tested in the community

#### HTC client details

\*

#### Total HTC clients served

Total HIV tested	34,986	100%
------------------	--------	------

#### Sex

Males tested	12,650	36%
Females tested	22,336	64%
Females non-pregnant	18,435	83%
Females pregnant	3,901	17%

#### Age

Children 0-14 yrs	5,458	16%
Children below 12 mths (Age group A)	230	4%
Children 12 mths - 14 yrs (Age group B)	5,228	96%
Adults 15+ years	29,528	84%
Young adults 15-24 years (Age group C)	15,271	52%
Older adults 25+ yrs (Age group D)	14,257	48%

#### HTC access type

PITC	13,241	38%
Family Referral Slip (FRS)	2,312	7%
Other (VCT, etc.) HTC access	19,433	56%

## HTC site report

Malawi (National)

2019 Q4 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### HTC client details

\*

#### HTC first time / repeat

Never tested before	10,273	29%
Previously accessed HTC	24,713	71%
Last negative	24,174	98%
Last positive	513	2%
Last exposed infant	22	0%
Last inconclusive	4	0%

#### Counseling session type / Partner present

Counseled with partner / partner present	2,305	7%
Counseled alone / Partner not present	32,681	93%

#### Outcome summary (HIV test)

Single test negative	33,641	96%
Single test positive	0	0%
Test 1&2 negative	96	0%
Test 1&2 positive	1,208	3%
Test 1&2 discordant	41	0%

#### Final result given to client

Results among clients never tested / last negative	34,472	99%
New negative	33,705	98%
New positive	730	2%
New positive (non-sex dissag)	130	18%
New positive (dissag by sex)	600	82%
New positive male	270	45%
New positive female	330	55%
New inconclusive	32	0%
New exposed infants	5	0%
Confirmatory results (previous positive clients)	514	1%
Confirmatory positive	509	99%
Confirmatory positive (non-sex dissag)	53	10%
Confirmatory positive (dissag by sex)	456	90%
Confirmatory positive male	182	40%
Confirmatory positive female	274	60%
Confirmatory inconclusive	5	1%

#### Partner / Family HTC referral slips

Sum of slips given	683	100%
Total clients presenting with referral slip	2,312	339%
Total failed referrals (slips not returned)	-1,629	-239%

### Clients at stand-alone HTC sites

#### HTC client details

\*

#### Total HTC clients served

Total HIV tested	5,142	100%
------------------	-------	------

#### Sex

Males tested	2,892	56%
Females tested	2,250	44%
Females non-pregnant	2,073	92%
Females pregnant	177	8%

# HTC site report

Malawi (National)

2019 Q4 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

## HTC client details

\*

### Age

Children 0-14 yrs	438	9%
Children below 12 mths (Age group A)	1	0%
Children 12 mths - 14 yrs (Age group B)	437	100%
Adults 15+ years	4,704	91%
Young adults 15-24 years (Age group C)	2,130	45%
Older adults 25+ yrs (Age group D)	2,574	55%

### HTC access type

PITC	2,471	48%
Family Referral Slip (FRS)	54	1%
Other (VCT, etc.) HTC access	2,617	51%

### HTC first time / repeat

Never tested before	1,193	23%
Previously accessed HTC	3,949	77%
Last negative	3,865	98%
Last positive	82	2%
Last exposed infant	0	0%
Last inconclusive	2	0%

### Counseling session type / Partner present

Counseled with partner / partner present	582	11%
Counseled alone / Partner not present	4,560	89%

### Outcome summary (HIV test)

Single test negative	4,940	96%
Single test positive	0	0%
Test 1&2 negative	9	0%
Test 1&2 positive	181	4%
Test 1&2 discordant	12	0%

### Final result given to client

Results among clients never tested / last negative	5,055	98%
New negative	4,949	98%
New positive	95	2%
New positive (non-sex dissag)	12	13%
New positive (dissag by sex)	83	87%
New positive male	50	60%
New positive female	33	40%
New inconclusive	11	0%
New exposed infants	0	0%
Confirmatory results (previous positive clients)	87	2%
Confirmatory positive	86	99%
Confirmatory positive (non-sex dissag)	11	13%
Confirmatory positive (dissag by sex)	75	87%
Confirmatory positive male	42	56%
Confirmatory positive female	33	44%
Confirmatory inconclusive	1	1%

## HTC site report

Malawi (National)

2019 Q4 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### HTC client details

\*

#### Partner / Family HTC referral slips

Sum of slips given	95	100%
Total clients presenting with referral slip	54	57%
Total failed referrals (slips not returned)	41	43%

## HIV self-test (ST) distribution

Malawi (National)

2019 Q4 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### ANC clinic

#### HIV self test client details

\*

##### Total HIV self-test kit

Total HIV self-test kit recipients	2,956	100%
------------------------------------	-------	------

##### Sex

Male recipients	553	19%
Female recipients	2,403	81%
Non-pregnant	781	33%
Pregnant	1,622	67%

##### Last HIV test of recipient

Never tested	226	8%
Previously tested	2,730	92%
Last negative	2,384	87%
Last positive	345	13%
Not on ART	37	11%
On art	308	89%
Last inconclusive	1	0%

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

Total self-test kits distributed to end users	3,913	100%
---	-------	------

##### Intended end user distribution type

Self (recipient)	408	10%
Secondary distribution	3,505	90%
Sex-partner	2,971	85%
Other	534	15%

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

Total males	2,852	73%
Boys 13-14 years old	41	1%
Adolescent boys and young men 15-24 years old	671	24%
Adolescent boys 15 - 19 years old	133	20%
Young men 20 - 24 years old	538	80%
Adults	2,140	75%
Young adults 25 - 35 years old	1,222	57%
Middle adults 36 - 49 years old	852	40%
Older adults 50+	66	3%
Total females	1,061	27%
Girls 13-14 years old	52	5%
Adolescent girls and young women 15-24 years	423	40%
Adolescent girls 15 - 19 years old	142	34%
Young women 20 - 24 years old	281	66%
Adults	586	55%
Young adults 25 - 35 years old	380	65%
Middle adults 36 - 49 years old	186	32%
Older adults 50+	20	3%

##### Total condoms

Total condoms distributed	7,800	100%
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## HIV self-test (ST) distribution

Malawi (National)

2019 Q4 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### Maternity

#### HIV self test client details

\*

##### Total HIV self-test kit

Total HIV self-test kit recipients	191	100%
------------------------------------	-----	------

##### Sex

Male recipients	57	30%
Female recipients	134	70%
Non-pregnant	113	84%
Pregnant	21	16%

##### Last HIV test of recipient

Never tested	3	2%
Previously tested	188	98%
Last negative	187	99%
Last positive	1	1%
Not on ART	0	0%
On art	1	100%
Last inconclusive	0	0%

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

Total self-test kits distributed to end users	292	100%
---	-----	------

##### Intended end user distribution type

Self (recipient)	33	11%
Secondary distribution	259	89%
Sex-partner	171	66%
Other	88	34%

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

Total males	202	69%
Boys 13-14 years old	15	7%
Adolescent boys and young men 15-24 years old	26	13%
Adolescent boys 15 - 19 years old	13	50%
Young men 20 - 24 years old	13	50%
Adults	161	80%
Young adults 25 - 35 years old	70	43%
Middle adults 36 - 49 years old	79	49%
Older adults 50+	12	7%
Total females	90	31%
Girls 13-14 years old	12	13%
Adolescent girls and young women 15-24 years	34	38%
Adolescent girls 15 - 19 years old	15	44%
Young women 20 - 24 years old	19	56%
Adults	44	49%
Young adults 25 - 35 years old	25	57%
Middle adults 36 - 49 years old	16	36%
Older adults 50+	3	7%

##### Total condoms

Total condoms distributed	195	100%
---------------------------	-----	------



## HIV self-test (ST) distribution

Malawi (National)

2019 Q4 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### ART clinic

#### HIV self test client details

\*

##### Total HIV self-test kit

Total HIV self-test kit recipients	3,307	100%
------------------------------------	-------	------

##### Sex

Male recipients	1,086	33%
Female recipients	2,221	67%
Non-pregnant	1,743	78%
Pregnant	478	22%

##### Last HIV test of recipient

Never tested	96	3%
Previously tested	3,211	97%
Last negative	2,181	68%
Last positive	1,026	32%
Not on ART	102	10%
On art	924	90%
Last inconclusive	4	0%

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

Total self-test kits distributed to end users	5,043	100%
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##### Intended end user distribution type

Self (recipient)	245	5%
Secondary distribution	4,798	95%
Sex-partner	3,325	69%
Other	1,473	31%

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

Total males	2,970	59%
Boys 13-14 years old	193	6%
Adolescent boys and young men 15-24 years old	625	21%
Adolescent boys 15 - 19 years old	243	39%
Young men 20 - 24 years old	382	61%
Adults	2,152	72%
Young adults 25 - 35 years old	1,113	52%
Middle adults 36 - 49 years old	913	42%
Older adults 50+	126	6%
Total females	2,073	41%
Girls 13-14 years old	217	10%
Adolescent girls and young women 15-24 years	772	37%
Adolescent girls 15 - 19 years old	338	44%
Young women 20 - 24 years old	434	56%
Adults	1,084	52%
Young adults 25 - 35 years old	711	66%
Middle adults 36 - 49 years old	301	28%
Older adults 50+	72	7%

##### Total condoms

Total condoms distributed	13,656	100%
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## HIV self-test (ST) distribution

Malawi (National)

2019 Q4 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### HTC room

#### HIV self test client details

\*

##### Total HIV self-test kit

Total HIV self-test kit recipients	18,226	100%
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##### Sex

Male recipients	7,275	40%
Female recipients	10,951	60%
Non-pregnant	7,451	68%
Pregnant	3,500	32%

##### Last HIV test of recipient

Never tested	1,671	9%
Previously tested	16,555	91%
Last negative	14,003	85%
Last positive	2,541	15%
Not on ART	306	12%
On art	2,235	88%
Last inconclusive	11	0%

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

Total self-test kits distributed to end users	25,639	100%
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##### Intended end user distribution type

Self (recipient)	5,368	21%
Secondary distribution	20,271	79%
Sex-partner	15,791	78%
Other	4,480	22%

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

Total males	15,134	59%
Boys 13-14 years old	304	2%
Adolescent boys and young men 15-24 years old	3,576	24%
Adolescent boys 15 - 19 years old	1,158	32%
Young men 20 - 24 years old	2,418	68%
Adults	11,254	74%
Young adults 25 - 35 years old	6,248	56%
Middle adults 36 - 49 years old	4,440	39%
Older adults 50+	566	5%
Total females	10,505	41%
Girls 13-14 years old	480	5%
Adolescent girls and young women 15-24 years	4,585	44%
Adolescent girls 15 - 19 years old	1,885	41%
Young women 20 - 24 years old	2,700	59%
Adults	5,440	52%
Young adults 25 - 35 years old	3,737	69%
Middle adults 36 - 49 years old	1,497	28%
Older adults 50+	206	4%

##### Total condoms

Total condoms distributed	102,812	100%
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## HIV self-test (ST) distribution

Malawi (National)

2019 Q4 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### Other point in HF

#### HIV self test client details

\*

##### Total HIV self-test kit

Total HIV self-test kit recipients	3,204	100%
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##### Sex

Male recipients	1,591	50%
Female recipients	1,613	50%
Non-pregnant	1,388	86%
Pregnant	225	14%

##### Last HIV test of recipient

Never tested	511	16%
Previously tested	2,693	84%
Last negative	2,563	95%
Last positive	130	5%
Not on ART	28	22%
On art	102	78%
Last inconclusive	0	0%

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

Total self-test kits distributed to end users	5,620	100%
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##### Intended end user distribution type

Self (recipient)	2,018	36%
Secondary distribution	3,602	64%
Sex-partner	2,494	69%
Other	1,108	31%

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

Total males	2,976	53%
Boys 13-14 years old	93	3%
Adolescent boys and young men 15-24 years old	967	32%
Adolescent boys 15 - 19 years old	432	45%
Young men 20 - 24 years old	535	55%
Adults	1,916	64%
Young adults 25 - 35 years old	1,047	55%
Middle adults 36 - 49 years old	743	39%
Older adults 50+	126	7%
Total females	2,644	47%
Girls 13-14 years old	147	6%
Adolescent girls and young women 15-24 years	1,195	45%
Adolescent girls 15 - 19 years old	557	47%
Young women 20 - 24 years old	638	53%
Adults	1,302	49%
Young adults 25 - 35 years old	842	65%
Middle adults 36 - 49 years old	399	31%
Older adults 50+	61	5%

##### Total condoms

Total condoms distributed	8,932	100%
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## HIV self-test (ST) distribution

Malawi (National)

2019 Q4 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### VCT stand-alone

#### HIV self test client details

\*

##### Total HIV self-test kit

Total HIV self-test kit recipients	50	100%
------------------------------------	----	------

##### Sex

Male recipients	14	28%
Female recipients	36	72%
Non-pregnant	35	97%
Pregnant	1	3%

##### Last HIV test of recipient

Never tested	4	8%
Previously tested	46	92%
Last negative	39	85%
Last positive	7	15%
Not on ART	0	0%
On art	7	100%
Last inconclusive	0	0%

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

Total self-test kits distributed to end users	74	100%
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##### Intended end user distribution type

Self (recipient)	29	39%
Secondary distribution	45	61%
Sex-partner	38	84%
Other	7	16%

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

Total males	42	57%
Boys 13-14 years old	0	0%
Adolescent boys and young men 15-24 years old	10	24%
Adolescent boys 15 - 19 years old	1	10%
Young men 20 - 24 years old	9	90%
Adults	32	76%
Young adults 25 - 35 years old	14	44%
Middle adults 36 - 49 years old	14	44%
Older adults 50+	4	13%
Total females	32	43%
Girls 13-14 years old	0	0%
Adolescent girls and young women 15-24 years	18	56%
Adolescent girls 15 - 19 years old	8	44%
Young women 20 - 24 years old	10	56%
Adults	14	44%
Young adults 25 - 35 years old	10	71%
Middle adults 36 - 49 years old	3	21%
Older adults 50+	1	7%

##### Total condoms

Total condoms distributed	166	100%
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## HIV self-test (ST) distribution

Malawi (National)

2019 Q4 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### Workplace formal

#### HIV self test client details

\*

##### Total HIV self-test kit

Total HIV self-test kit recipients	131	100%
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##### Sex

Male recipients	88	67%
Female recipients	43	33%
Non-pregnant	39	91%
Pregnant	4	9%

##### Last HIV test of recipient

Never tested	5	4%
Previously tested	126	96%
Last negative	123	98%
Last positive	3	2%
Not on ART	0	0%
On art	3	100%
Last inconclusive	0	0%

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

Total self-test kits distributed to end users	210	100%
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##### Intended end user distribution type

Self (recipient)	127	60%
Secondary distribution	83	40%
Sex-partner	67	81%
Other	16	19%

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

Total males	112	53%
Boys 13-14 years old	2	2%
Adolescent boys and young men 15-24 years old	28	25%
Adolescent boys 15 - 19 years old	8	29%
Young men 20 - 24 years old	20	71%
Adults	82	73%
Young adults 25 - 35 years old	53	65%
Middle adults 36 - 49 years old	27	33%
Older adults 50+	2	2%
Total females	98	47%
Girls 13-14 years old	3	3%
Adolescent girls and young women 15-24 years	34	35%
Adolescent girls 15 - 19 years old	11	32%
Young women 20 - 24 years old	23	68%
Adults	61	62%
Young adults 25 - 35 years old	45	74%
Middle adults 36 - 49 years old	14	23%
Older adults 50+	2	3%

##### Total condoms

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

Malawi (National)

2019 Q4 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### Workplace informal

#### HIV self test client details

\*

##### Total HIV self-test kit

Total HIV self-test kit recipients	23	100%
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##### Sex

Male recipients	13	57%
Female recipients	10	43%
Non-pregnant	10	100%
Pregnant	0	0%

##### Last HIV test of recipient

Never tested	0	0%
Previously tested	23	100%
Last negative	21	91%
Last positive	2	9%
Not on ART	0	0%
On art	2	100%
Last inconclusive	0	0%

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

Total self-test kits distributed to end users	40	100%
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##### Intended end user distribution type

Self (recipient)	19	48%
Secondary distribution	21	53%
Sex-partner	20	95%
Other	1	5%

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

Total males	19	48%
Boys 13-14 years old	0	0%
Adolescent boys and young men 15-24 years old	8	42%
Adolescent boys 15 - 19 years old	0	0%
Young men 20 - 24 years old	8	100%
Adults	11	58%
Young adults 25 - 35 years old	7	64%
Middle adults 36 - 49 years old	4	36%
Older adults 50+	0	0%
Total females	21	53%
Girls 13-14 years old	0	0%
Adolescent girls and young women 15-24 years	3	14%
Adolescent girls 15 - 19 years old	0	0%
Young women 20 - 24 years old	3	100%
Adults	18	86%
Young adults 25 - 35 years old	14	78%
Middle adults 36 - 49 years old	4	22%
Older adults 50+	0	0%

##### Total condoms

Total condoms distributed	192	100%
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## HIV self-test (ST) distribution

Malawi (National)

2019 Q4 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### Hotspot

#### HIV self test client details

\*

##### Total HIV self-test kit

Total HIV self-test kit recipients	0
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##### Sex

Male recipients	0
Female recipients	0
Non-pregnant	0
Pregnant	0

##### Last HIV test of recipient

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

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

Total self-test kits distributed to end users	0
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##### Intended end user distribution type

Self (recipient)	0
Secondary distribution	0
Sex-partner	0
Other	0

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

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

##### Total condoms

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

Malawi (National)

2019 Q4 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### Other community point

#### HIV self test client details

\*

##### Total HIV self-test kit

Total HIV self-test kit recipients	3,659	100%
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##### Sex

Male recipients	2,281	62%
Female recipients	1,378	38%
Non-pregnant	1,077	78%
Pregnant	301	22%

##### Last HIV test of recipient

Never tested	799	22%
Previously tested	2,860	78%
Last negative	2,544	89%
Last positive	315	11%
Not on ART	35	11%
On art	280	89%
Last inconclusive	1	0%

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

Total self-test kits distributed to end users	4,580	100%
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##### Intended end user distribution type

Self (recipient)	2,761	60%
Secondary distribution	1,819	40%
Sex-partner	1,550	85%
Other	269	15%

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

Total males	2,985	65%
Boys 13-14 years old	41	1%
Adolescent boys and young men 15-24 years old	1,105	37%
Adolescent boys 15 - 19 years old	537	49%
Young men 20 - 24 years old	568	51%
Adults	1,839	62%
Young adults 25 - 35 years old	917	50%
Middle adults 36 - 49 years old	719	39%
Older adults 50+	203	11%
Total females	1,595	35%
Girls 13-14 years old	64	4%
Adolescent girls and young women 15-24 years	697	44%
Adolescent girls 15 - 19 years old	367	53%
Young women 20 - 24 years old	330	47%
Adults	834	52%
Young adults 25 - 35 years old	497	60%
Middle adults 36 - 49 years old	279	33%
Older adults 50+	58	7%

##### Total condoms

Total condoms distributed	11,449	100%
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## Blood safety

Malawi (National)

2019 Q4 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### Infect. disease screening among potential donors

\*

#### HIV screening

HIV testing not done	1,113	23%
Tested for HIV	3,797	77%
HIV negative	3,644	96%
HIV positive	153	4%

#### Hepatitis B screening

HepB testing not done	1,176	24%
Tested for Hepatitis B	3,734	76%
HepB Negative	3,574	96%
HepB Positive	160	4%

#### Hepatitis C screening

HepC testing not done	2,323	47%
Tested for Hepatitis C	2,587	53%
HepC Negative	2,473	96%
HepC Positive	114	4%

#### Syphilis screening

Syphilis testing not done	1,089	22%
Tested for Syphilis	3,821	78%
Syphilis Negative	3,669	96%
Syphilis Positive	152	4%

#### Malaria screening

Malaria testing not done	1,439	29%
Tested for malaria	3,471	71%
Malaria Negative	3,174	91%
Malaria Positive	297	9%

#### Summary screening outcome

Not donated	1,768	36%
Donated	3,142	64%
Screened for at least HIV, HepB and syphilis	2,609	83%
Screened for HIV, HepB, HepC, Syphilis, Malaria	1,823	70%
Screened for HIV, HepB, Syphilis	786	30%
Screened for HIV, HepB	35	1%
Screened for HIV only	9	0%
Screened with any other combination of tests	489	16%

### Cross-matching report

\*

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

Total blood group typing done	21,237	100%
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#### Blood units cross-matched (by source)

Total blood units cross-matched	16,171	100%
Total units from MBTS (estimated)	13,029	81%
Total units from replacement donors	3,142	19%

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

Units cross-matched for maternity	3,805	24%
Units cross-matched for paediatrics	3,341	21%
Units cross-matched for other ward	9,025	56%

## Blood safety

Malawi (National)

2019 Q4 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### Cross-matching report

\*

#### Transfusion reactions

Units transfused without adverse events	16,093	100%
Units with suspected transfusion reactions	56	0%
Units with confirmed transfusion reactions	22	0%

# HIV exposed child follow-up

Malawi (National)

2019 Q4 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

## Age 2 months

### Age cohort outcomes

\*

#### Total children in birth cohort

Total children registered	11,705	100%
---------------------------	--------	------

#### CPT status

On CPT	10,019	86%
Not on CPT	1,686	14%

#### HIV status

Current HIV infection status unknown	3,519	30%
HIV infection not confirmed, not ART eligible	3,512	100%
HIV infection not confirmed, ART eligible (PSHD)	7	0%
Current HIV infection status known	8,186	70%
Confirmed not infected	8,081	99%
Confirmed infected (ART eligible)	105	1%

#### ART eligibility summary

Not eligible for ART	11,593	99%
ART eligible	112	1%
ART not initiated	20	18%
Initiated ART	92	82%

#### Primary follow-up outcome

Discharged uninfected	13	0%
Continue follow-up	9,987	94%
Started ART	92	1%
Defaulted	504	5%
Died	45	0%

#### Transfers between sites

Total not transferred out	10,641	91%
Transferred out	1,064	9%

## Age 12 months

### Age cohort outcomes

\*

#### Total children in birth cohort

Total children registered	12,283	100%
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#### CPT status

On CPT	9,296	76%
Not on CPT	2,987	24%

#### HIV status

Current HIV infection status unknown	3,264	27%
HIV infection not confirmed, not ART eligible	3,259	100%
HIV infection not confirmed, ART eligible (PSHD)	5	0%
Current HIV infection status known	9,019	73%
Confirmed not infected	8,805	98%
Confirmed infected (ART eligible)	214	2%

# HIV exposed child follow-up

Malawi (National)

2019 Q4 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

## Age cohort outcomes

\*

### ART eligibility summary

Not eligible for ART	12,064	98%
ART eligible	219	2%
ART not initiated	21	10%
Initiated ART	198	90%

### Primary follow-up outcome

Discharged uninfected	47	0%
Continue follow-up	9,176	84%
Started ART	198	2%
Defaulted	1,415	13%
Died	96	1%

### Transfers between sites

Total not transferred out	10,932	89%
Transferred out	1,351	11%

## Age 24 months

### Age cohort outcomes

\*

#### Total children in birth cohort

Total children registered	11,417	100%
---------------------------	--------	------

#### CPT status

On CPT	412	4%
Not on CPT	11,005	96%

#### HIV status

Current HIV infection status unknown	3,479	30%
HIV infection not confirmed, not ART eligible	3,405	98%
HIV infection not confirmed, ART eligible (PSHD)	74	2%
Current HIV infection status known	7,938	70%
Confirmed not infected	7,708	97%
Confirmed infected (ART eligible)	230	3%

#### ART eligibility summary

Not eligible for ART	11,113	97%
ART eligible	304	3%
ART not initiated	67	22%
Initiated ART	237	78%

#### Primary follow-up outcome

Discharged uninfected	7,568	74%
Continue follow-up	184	2%
Started ART	237	2%
Defaulted	2,149	21%
Died	135	1%

#### Transfers between sites

Total not transferred out	10,273	90%
Transferred out	1,144	10%

## Antenatal Care

Malawi (National)

2019 Q4 (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	160,653	100%
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### ANC cohort analysis

\*

#### HIV status ascertainment

HIV status not ascertained	3,482	2%
HIV status ascertained	157,171	98%
Valid previous test result	9,610	6%
Previous negative	2,076	22%
Previous positive	7,534	78%
New test at ANC	147,561	94%
New negative	144,929	98%
New positive	2,632	2%

#### HIV status summary

Total women HIV negative	147,005	94%
Total women HIV positive	10,166	6%

#### PMTCT regimen mother

No ARVs	147	1%
Any ARVs	10,019	99%
ART (by time of initiation)	10,019	100%
Already on ART when starting ANC	7,451	74%
Started ART at 0-27 weeks of pregnancy	2,260	23%
Started ART at 28+ weeks of preg.	308	3%

### ANC women after 6 months

#### ANC cohort analysis

\*

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

Total women in booking cohort	164,892	100%
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#### Syphilis status

Not tested for syphilis	16,757	10%
Tested for syphilis	148,135	90%
Syphilis negative	145,034	98%
Syphilis positive	3,101	2%

#### HIV status ascertainment

HIV status not ascertained	2,802	2%
HIV status ascertained	162,090	98%
Valid previous test result	12,383	8%
Previous negative	4,217	34%
Previous positive	8,166	66%
New test at ANC	149,707	92%
New negative	146,693	98%
New positive	3,014	2%

#### HIV status summary

Total women HIV negative	150,910	93%
Total women HIV positive	11,180	7%

## Antenatal Care

Malawi (National)

2019 Q4 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

### ANC cohort analysis

\*

#### CPT status (among HIV pos)

Not on CPT	197	2%
On CPT	10,983	98%

#### PMTCT regimen mother

No ARVs	125	1%
Any ARVs	11,055	99%
ART (by time of initiation)	11,055	100%
Already on ART when starting ANC	8,109	73%
Started ART at 0-27 weeks of pregnancy	2,576	23%
Started ART at 28+ weeks of preg.	370	3%

#### Baby's ARVs dispensed

No ARVs dispensed for infant	302	3%
ARVs dispensed for infant	10,878	97%



# Maternity

Malawi (National)

2019 Q4 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

## Maternal details

\*

### Admissions in the reporting period

Total admissions (referrals double-counted)	187,799	100%
Not referred to other site (total women)	178,568	95%
Referred out before delivery (multiple admissions)	9,231	5%

### HIV status ascertainment

HIV status not ascertained	6,341	4%
HIV status ascertained	144,357	96%
Valid previous test result	11,271	8%
Previous negative	867	8%
Previous positive	10,404	92%
New test at maternity	133,086	92%
New negative	132,667	100%
New positive	419	0%

### HIV status summary

Total women HIV negative	133,534	93%
Total women HIV positive	10,823	7%

### ARVs during pregnancy (among HIV pos)

No ARV in pregnancy	82	1%
Any ARVs	10,741	99%
ART (by time of initiation)	10,741	100%
ART initiated before pregnancy	10,085	94%
ART initiated in 1st / 2nd trimester	393	4%
ART initiated in 3rd trimester	92	1%
ART initiated during labour	171	2%

## Infant details

\*

### Single babies / multiple deliveries

Total babies delivered	145,800	100%
Single babies	140,911	97%
Twin / multiple babies	4,889	3%

### Infant survival

Total live births	143,334	98%
Discharged alive	142,338	99%
Neonatal deaths	996	1%
Stillbirths	2,466	2%
Stillbirth, fresh	1,297	53%
Stillbirth, macerated	1,169	47%

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

Infants with unknown HIV exposure status	3,617	3%
Infants with known HIV exposure status	138,721	97%
Not HIV exposed	128,654	93%
HIV exposed	10,067	7%
Received no ARVs	369	4%
Received ARVs	9,698	96%
Nevirapine	9,698	100%

# ART cohort analysis

Malawi (National)

2019 Q4 (Quarter)

## Registration details

\*

### ART clinic registrations

Total ART clinic registrations	36,460	100%
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### Registration type

ART initiations, first time (total patients)	25,354	70%
ART initiations, first time (non sex-disagg.)	3,976	16%
ART initiations, first time (by sex)	21,378	84%
ART initiations, first time, males	8,648	40%
ART initiations, first time, females	12,730	60%
ART initiations, first time, females non-pregnant	9,825	77%
ART initiations, first time, females pregnant	2,905	23%
ART re-initiations	345	1%
ART transfers in	10,759	30%

### Sex

Males	14,364	39%
Females	22,096	61%
Non-pregnant	17,464	79%
Pregnant	4,632	21%

### Age at ART initiation

Adults 15+ yrs	34,069	93%
Children 0-14 yrs	2,391	7%
Children 2-14 yrs	1,803	75%
Children below 24 mths	588	25%

### Reason for starting ART

Presumed severe HIV Disease	20	0%
Confirmed HIV infection	36,440	100%
WHO stage 1 or 2	32,311	89%
CD4 below threshold	1,530	5%
CD4 unknown or >threshold	30,781	95%
PCR infants	79	0%
Children 12-59 mths	523	2%
Pregnant women	4,467	15%
Breastfeeding mothers	1,239	4%
Asymptomatic / mild	24,473	80%
WHO stage 3	3,221	9%
WHO stage 4	830	2%
Unknown / reason outside of guidelines	78	0%

### TB at ART initiation

Never TB / TB > 24 months ago	35,953	99%
TB within the last 24 months	261	1%
Current episode of TB	246	1%

### Kaposi's sarcoma at ART initiation

No KS	36,321	100%
Patients with KS	139	0%

# ART cohort analysis

Malawi (National)

2019 Q4 (Cumulative)

## Registration details

\*

### ART clinic registrations

Total ART clinic registrations	1,746,902	100%
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### Registration type

ART initiations, first time (total patients)	1,378,156	79%
ART initiations, first time (non sex-disagg.)	1,288,031	93%
ART initiations, first time (by sex)	90,125	7%
ART initiations, first time, males	36,680	41%
ART initiations, first time, females	53,445	59%
ART initiations, first time, females non-pregnant	42,504	80%
ART initiations, first time, females pregnant	10,941	20%
ART re-initiations	25,364	1%
ART transfers in	343,384	20%

### Sex

Males	653,384	37%
Females	1,093,518	63%
Non-pregnant	879,103	80%
Pregnant	214,415	20%

### Age at ART initiation

Adults 15+ yrs	1,597,034	91%
Children 0-14 yrs	149,868	9%
Children 2-14 yrs	116,396	78%
Children below 24 mths	33,472	22%

### Reason for starting ART

Presumed severe HIV Disease	4,540	0%
Confirmed HIV infection	1,742,362	100%
WHO stage 1 or 2	1,026,589	59%
CD4 below threshold	362,248	35%
CD4 unknown or >threshold	664,341	65%
PCR infants	4,202	1%
Children 12-59 mths	20,207	3%
Pregnant women	201,033	30%
Breastfeeding mothers	63,974	10%
Asymptomatic / mild	374,925	56%
WHO stage 3	574,525	33%
WHO stage 4	126,267	7%
Unknown / reason outside of guidelines	14,981	1%

### TB at ART initiation

Never TB / TB > 24 months ago	1,672,853	96%
TB within the last 24 months	37,801	2%
Current episode of TB	36,248	2%

### Kaposi's sarcoma at ART initiation

No KS	1,726,981	99%
Patients with KS	19,921	1%

# ART cohort analysis

Malawi (National)

2019 Q4 (Cumulative)

## ART outcomes

\*

### Primary follow-up outcomes

Total alive on ART	883,784	63%
Alive on ART at site of last registration	833,277	94%
ART patients in transit between sites	50,507	6%
Defaulted	384,973	27%
Stopped ART	10,702	1%
Total died	122,732	9%
Died month 1	23,307	19%
Died month 2	14,206	12%
Died month 3	9,329	8%
Died month 4+	75,890	62%

### Transfers between sites

Total not transferred out	1,353,011	77%
Transferred out	393,891	23%

### ART regimens

First line regimens	800,994	96%
Adult formulation	782,594	98%
Regimen 0A	609	0%
Regimen 2A	12,017	2%
Regimen 4A	418	0%
Regimen 5A	210,935	27%
Regimen 6A	2,676	0%
Regimen 13A	554,060	71%
Regimen 14A	577	0%
Regimen 15A	1,302	0%
Paed. formulation	18,400	2%
Regimen 0P	560	3%
Regimen 2P	17,485	95%
Regimen 4P	355	2%
Second line regimens	29,846	4%
Adult formulation	23,251	78%
Regimen 7A	7,504	32%
Regimen 8A	13,879	60%
Regimen 9A	1,462	6%
Regimen 10A	145	1%
Regimen 11A	190	1%
Regimen 12A	71	0%
Paed. Formulation	6,595	22%
Regimen 9P	6,057	92%
Regimen 11P	538	8%
Other regimen (adult / paed)	2,437	0%

### Adherence

Adherence unknown (not recorded)	21,770	3%
Adherence recorded	811,507	97%
0-3 doses missed	549,201	68%
4+ doses missed	262,306	32%

## ART cohort analysis

Malawi (National)

2019 Q4 (Cumulative)

### ART outcomes

\*

#### ART side effects

Side effects unknown (not recorded)	4,650	1%
Side effects recorded	828,627	99%
No side effects	818,471	99%
Any side effects	10,156	1%

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

ICF not done (Current TB status unknown/ not circ)	8,405	1%
ICF done	824,872	99%
TB not suspected	818,798	99%
TB suspected	4,374	1%
TB confirmed	1,700	0%
TB confirmed, not on treatment	55	3%
TB confirmed, on TB treatment	1,645	97%

#### Pregnant / Breastfeeding

Pregnant females	833,277	100%
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2019 Q4 (Quarter)

**12 month survival children****Survival and retention in ART program**

\*

**ART cohort registration group outcomes**

Total ART clinic registrations	2,724	100%
Transfers out (double counted)	512	19%
Total not transferred out (patients in cohort)	2,212	81%
Total alive on ART	1,684	76%
Total not retained	528	24%
Defaulted	460	87%
Stopped ART	16	3%
Died	52	10%

**12 month survival all ages****Survival and retention in ART program**

\*

**ART cohort registration group outcomes**

Total ART clinic registrations	39,188	100%
Transfers out (double counted)	6,995	18%
Total not transferred out (patients in cohort)	32,193	82%
Total alive on ART	23,271	72%
Total not retained	8,922	28%
Defaulted	8,184	92%
Stopped ART	150	2%
Died	588	7%

**6 month survival OptionB+****Survival and retention in ART program**

\*

**ART cohort registration group outcomes**

Total ART clinic registrations	5,445	100%
Transfers out (double counted)	596	11%
Total not transferred out (patients in cohort)	4,849	89%
Total alive on ART	3,726	77%
Total not retained	1,123	23%
Defaulted	1,095	98%
Stopped ART	8	1%
Died	20	2%

**12 month survival OptionB+****Survival and retention in ART program**

\*

**ART cohort registration group outcomes**

Total ART clinic registrations	5,891	100%
Transfers out (double counted)	1,049	18%
Total not transferred out (patients in cohort)	4,842	82%
Total alive on ART	3,483	72%
Total not retained	1,359	28%
Defaulted	1,315	97%
Stopped ART	20	1%
Died	24	2%

# Viral load monitoring cohort report

Malawi (National)

2019 Q4 (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	167,720	100%
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### Reason for VL test

Routine / scheduled monitoring	144,047	86%
Extra-schedular	20,759	12%
Targeted (clinical suspicion of failure)	4,108	20%
Follow-up after high VL	16,651	80%
Replacement of lost sample / missing result	2,914	2%

## Results for VL samples collected 6 months ago

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### Total VL samples with outcomes

Total VL samples collected 6 months ago	178,975	100%
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### VL test results

Valid results	163,934	92%
<1000 copies / ml	148,304	90%
1000+ copies / ml	15,630	10%
Rejected samples / invalid results	615	0%
Missing / outstanding results	14,426	8%

### Result transmission type

Paper results	162,563	99%
Electronic results	2,399	1%

### Time from sample collection to receipt of results

0-4 Weeks	82,222	46%
5-8 Weeks	59,200	33%
9-12 Weeks	13,506	8%
13+ Weeks / still missing	24,047	13%

### Time from sample collection to client notification

0-4 Weeks	38,135	21%
5-8 Weeks	44,494	25%
9-12 Weeks	27,295	15%
13+ Weeks / pending	69,051	39%

## Patients with high VL: outcome after 6 months

\*

### Patients in high VL cohort

Total high VL patients evaluated after 6 months	20,351	100%
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### Initial high VL: reason for test

Routine / scheduled monitoring	18,947	93%
Targeted (clinical suspicion of failure)	1,132	6%
Repeat sample	272	1%

### Intensive adherence counselling

3 Sessions completed	12,187	60%
Sessions not completed	8,164	40%



# Viral load monitoring cohort report

Malawi (National)

2019 Q4 (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	10,152	50%
Valid results	7,932	78%
<1000 copies / ml	5,422	68%
1000+ copies / ml	2,510	32%
Rejected samples / invalid results	26	0%
Missing / outstanding results	2,194	22%
Follow-up sample pending	10,199	50%

### Preliminary opinion

Conclusion made	8,078	40%
Continue current regimen	6,499	80%
Switch to 2nd line ART	1,579	20%
Conclusion pending	12,273	60%

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

Decision made	6,927	34%
Continue current regimen	5,493	79%
Switch to 2nd line ART	1,405	20%
Refer to HIV specialist	29	0%
Decision pending	13,424	66%

# STI site report

Malawi (National)

2019 Q4 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

## STI clients treated in the reporting period

\*

### Total STI clients

Total STI clients treated	103,345	100%
Index patients treated (symptomatic)	84,717	82%
Partners treated	18,628	18%

### Sex

Males	41,800	40%
Males Non-circumcised	29,112	70%
Males Circumcised	12,688	30%
Females	61,545	60%
Non-pregnant	51,766	84%
Pregnant	9,779	16%

### Age group

Age group A (0-19 years)	9,819	10%
Age group B (20-24 years)	23,500	23%
Age group C (25+ years)	70,026	68%

### Client type

Symptomatic cases	90,854	88%
Index cases	84,717	93%
Partners symptomatic	6,137	7%
Partners asymptomatic	12,491	12%

### STI treatment history

Never treated for STI	76,466	74%
Previously treated for STI	26,879	26%
Old >3 months ago	19,959	74%
Recent ≤3 months ago	6,920	26%

### STI syndromic diagnosis

GUD	13,827	12%
UD	28,341	25%
AVD	32,191	29%
Low risk	9,049	28%
High risk	23,142	72%
LAP	13,376	12%
SS	1,127	1%
BU	681	1%
BA	1,074	1%
NC	614	1%
Genital Warts	760	1%
Syphilis RPR VDRL	12,767	11%
Other STI	6,489	6%

### STI partner notification

Total partner notification slips issued	28,814	100%
Total partners returned	18,628	65%
Total partners not seen	10,186	35%

## STI site report

Malawi (National)

2019 Q4 (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	10,500	10%
HIV status ascertained	92,845	90%
HIV negative (new test)	75,187	81%
HIV positive	17,658	19%
New positive	2,321	13%
Previous positive	15,337	87%
Not on ART	632	4%
On ART	14,705	96%

#### STI clients referred for services

Lab	1,685	3%
Gynae review	878	2%
Surgical review	377	1%
Repeat HTC	38,770	73%
ART (for assessment)	4,864	9%
Other (service referrals)	3,155	6%
VMMC	3,630	7%