Government of Malawi Ministry of Health

Integrated HIV Program Report
July-September 2016

- ***Integrated HIV Program Supervision***
- ***HIV Testing Services / Early Infant Diagnosis***
- ***Blood Safety***
- ***Post Exposure Prophylaxis***
- ***HIV Exposed Child Follow-Up***
- ***Pre-ART***
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- ***Supply of HIV Program Commodities***

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1 Executive Summary

A summary of the key achievements between **July and September 2016** is provided below:

- Scale-up of integrated HIV services had reached the following number of sites:
  - **724** static (579 within, 145 outside of health facilities) and 188 outreach HTC sites
  - **732** (static) ART sites; **639** of these had started at least one pregnant or breastfeeding woman this quarter
  - **369** sites with patients in pre-ART follow-up
  - **669** sites with HIV-exposed children in follow-up
- **872,393** persons were tested for HIV and received their results; **252,930 (29%)** accessed HIV testing for the first time; **619,463 (71%)** were repeat testers and **40,384 (7%)** of these received confirmatory testing (after having tested positive in the past). **36,253 (4%)** clients received a positive result for the first time.
- **17,337 (98%)** of 17,765 blood units collected were screened for (at least) HIV, hepatitis B and syphilis.
- **146,596 (96%)** of 151,941 women at ANC had their HIV status ascertained; **11,183 (7%)** of these were HIV positive. **130,260 (99%)** of 132,451 women at maternity had their HIV status ascertained **9,690 (7%)** of these were HIV positive.
- **41,994** patients started ART this quarter; **53%** of these were classified as asymptomatic / in WHO stage 1 and started under the new "Test & Treat" policy.
- **662,788** patients were alive and on ART by end of September 2016. This means that **68%** of the estimated 979,000 HIV positive population was on ART. [1] ART coverage was **65%** (52,721 / 81,000) for children[2] and **68%** (610,067 / 898,000) for adults.
- **76%** of adults and **79%** of children were retained alive on ART at 12 months after initiation. 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 15.4)
- **575,763 (93%)** of 620,164 patients on first line adult ART were on TDF/3TC/EFV.
- **12,083** [3] **(89%)** of an estimated **13,500** [1] HIV infected pregnant women in Malawi were on ART this quarter. **7,555 (63%)** of these were already on ART when getting pregnant and **4,483 (37%)** started ART during pregnancy/delivery.
- An additional **1,284** [2] breastfeeding women started ART due to ***Option B+*** (in WHO stage 1/2)
- **77%, 71%, 65%** and **65%** of women started under ***Option B+*** were retained on ART at **6, 12, 24** and **36 months** after initiation, respectively.
- **8,880 (7%)** of infants discharged alive from maternity were known to be HIV exposed, **8,683 (94%)** of these received ARV prophylaxis (nevirapine). **8,065 (93%)** were enrolled in exposed child follow-up before age 2 months.
- **11,362** HIV exposed children and **1,818** pre-ART patients were enrolled for follow-up in *HIV Care Clinics (HCC)* during this quarter.

[1] 2016 Spectrum HIV population estimates.
[2] Number of children (0-14 years) on ART extrapolated from patients on paediatric ARV formulations (see section 15.3 on page25).
[3] Adjusted for double counting due to patient transfers / 'failed ART initiations' among women lost to follow-up within 6 months of ART registration.

2 Integrated HIV Program Overview

Malawi's National HIV Program has undergone several important policy changes since its inception in 2004. The 3rd Edition of the ***Malawi Integrated Clinical HIV Guidelines*** was published in **May 2016**. Key new policies include:

- **Universal eligibility for ART ('Test & Treat'):** All children and adults with confirmed HIV infection should start ART without delay, regardless of clinical or immunological stage or any other criteria. Pre-ART services will be discontinued once the universal 'Test & Treat' policy is fully implemented.

- Preferred use of a **lopinavir/ritonavir based** regimen to initiate **children under 3 years**. Introduction of lopinavir/ritonavir oral pellets to replace liquid formulation.

- Children under 24 months who start ART need a **confirmatory DNA-PCR**. This can be collected on the day of starting ART. No follow-up testing using rapid antibody tests.

- Introduction of routine **annual screening for hypertension** for all adults (30 years +) in ART follow-up.

- Continued roll-out of scheduled **viral load monitoring** to improve early detection of treatment failure and initiation of second line ART. A targeted / repeat **VL result of 1000+** copies / ml in a dried blood spot or plasma sample from patient with good adherence in the 3 months before sample collection is considered to confirm ARV treatment failure with an indication to start 2nd line.

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 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

737 public and private sector facilities were visited for **clinical HIV program supervision** between 10th and 21st October 2016.

The large number of sites was covered by **170** supervisors working in **32** teams that spent a total of **2,048 working hours** at the sites. Each site visit lasted on average **2.9** hours, but up to 2 days were spent at the busiest sites. **365 (50%)** sites were awarded a *certificate* for **excellent performance.** This number is lower than the previous quarter (399). **66 (9%)** sites had significant weaknesses and were rated to require **intensive mentoring**. Mentoring capacity will need to be further expanded.

Table 1: Outcomes of integrated HIV services supervision for 2016 Q3

Zone	Total facil. visited*	Supervision hours spent at facilities		Performance (# and % of sites)	
		Total	Average per site	Excellent perform.	Mentoring needed
NZ	131	329	2.6	75 57%	15 11%
CEZ	103	279	2.8	41 40%	6 6%
CWZ	169	442	2.7	73 43%	18 11%
SEZ	166	497	3.1	91 55%	12 7%
SWZ	168	501	3.1	85 51%	15 9%
Malawi	737	2,048	2.9	365 50%	66 9%

* 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 **153** sites had cumulatively registered more than 2,000 ART patient and **62** of these had registered more than 5,000. **71 (46%)** of these high burden sites were using electronic data systems. 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 **724** static and **188** outreach HTC sites in Q3 2016; 145 of these were outside of health facilities.

Table 2: Facilities with integrated HIV services in the 5 Zones. Availability of services defined by performance (at least 1 patient enrolled) during 2016 Q3

Zone	Total fac.(1)	Facilities providing HIV services				CD4 count machines (2)		
		Exp. child	Pre-ART	PMTCT B+	ART	Installed	Functional	Results
NZ	136	120 88%	65 48%	106 78%	130 96%	24 18%	10 42%	195
CEZ	103	100 97%	51 50%	94 91%	103 100%	17 17%	5 29%	89
CWZ	169	138 82%	80 47%	143 85%	168 99%	35 21%	14 40%	1,164
SWZ	168	150 89%	90 54%	145 86%	166 99%	39 23%	11 28%	271
SEZ	166	161 97%	83 50%	151 91%	165 99%	34 20%	11 32%	829
Malawi	742	669 90%	369 50%	639 86%	732 99%	149 20%	51 34%	2,548

(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 **742** sites designated to provide clinical HIV services in Q3 2016, by zone. At the national level, there were **732** (static) sites with at least one patient on ART, **639** sites had enrolled women under PMTCT Option B+; **369** sites were providing pre-ART services. **669** had enrolled HIV exposed children for follow-up. ART services were now available at almost all designated sites in the 5 zones. The CEZ had reached 100% of designated sites with ART services.

CD4 count machines (including 'point of care' machines) were installed at **147** sites, and **51** (35%) of these had produced at least 1 result during Q3 2016. The total number of CD4 results produced (**2,548)** had declined considerably from the previous quarter (15,207). With the introduction of the 'Test & Treat' policy, routine CD4 count testing to determine when to start ART will become obsolete and only targeted CD4 counts are expected to continue.

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.

	2015 Q4	2016 Q1	2016 Q2	2016 Q3
Sites visited	**724**	**732**	**737**	**737**
Sites with any tests done	681 *94%*	690 *94%*	691 *94%*	691 *94%*
Sites with registered HTC staff	681 *94%*	686 *94%*	678 *92%*	641 *87%*
Total HTC staff at visited sites	**3,972**	**4,078**	**3,962**	**3,789**
Staff with any test done	2,342 *59%*	2,305 *57%*	2,430 *61%*	2,525 *67%*
Staff with 300+ tests done this quarte	492 *17%*	730 *31%*	794 *32%*	846 *29%*
Logbooks reviewed	2,929 *74%*	2,346 *58%*	2,516 *64%*	2,907 *77%*
HTC staff participating in PT this quart	111 *4%*	1,752 *75%*	816 *32%*	2,180 *75%*
Passed	0 *0%*	0 *0%*	0 *0%*	1,595 *73%*
Failed	0 *0%*	0 *0%*	0 *0%*	157 *7%*
Not documented	0 *0%*	0 *0%*	0 *0%*	428 *20%*
Total tests (HTC register)	**607,310**	**861,611**	**881,998**	**872,393**
Tests accounted for by individual staff	446,835 *74%*	584,623 *68%*	648,053 *73%*	672,932 *77%*
Source: logbooks	419,100 *94%*	479,900 *82%*	537,279 *61%*	627,217 *93%*
Source: HTC register	27,735 *6%*	104,723 *18%*	110,774 *21%*	45,715 *7%*
Total tests by staff with 300+ tests	271,897 *61%*	433,982 *74%*	494,160 *76%*	504,757 *75%*

641 (87%) of the 737 visited facilities had registered HIV testing providers and **691** (94%) sites had performed at least one test during Q3 2016. **2,907 (77%)** of **3,789** providers had their logbooks available for review. This is an improvement from the previous quarter (64 %).

According to the 2,907 reviewed logbooks, **2,180 (75%)** testing providers had participated in proficiency (panel) testing (PT) this quarter. This is higher than the participation rate from the previous quarter. However, documentation of PT may be incomplete given that not all logbooks were available for review. The national HIV reference laboratory is aiming to organize six monthly PT rounds for all practising HIV testing providers. **1,595 (73%)** of the 2,180 providers that participated in PT passed. **157(7%)** failed and for **428 (20%)** results were not documented. The 20% without a documented result are likely due to delays in updating the logbooks.

672,932 (77%) of all 872, 393 tests conducted this quarter (according to HTC register reports) were accounted for by individual HTC staff working at the visited sites. **627,217 (93%)** of these tests were documented in the reviewed logbooks and an additional **45,715 (7%)** could be attributed to individual providers from staff codes in the HTC registers. **846 (29%)** of 2,525 providers with documented activity had tested 300 or more clients 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 **846 staff** who met or exceeded this target provided **504,757 (75 %)** of the total number of tests accounted for by individual staff this quarter.

22,107 quality control samples were tested in the quarter. **12,737 (56%)** were negative samples and **9,734 (44%)** were positive. Only **88 (12%)** of 732 facilities had done a minimum

required of 48 quality control tests in the quarter[4]. **21,592 (98%)** of the quality control tests had an acceptable outcome.

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 100 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 total staffing levels have been fairly consistent over the last 3 quarters.

In October 2016, a total of 2,707 health providers, were working in ART clinics in Malawi. **683** were clinicians (physicians, clinical or medical officers); **1,055** were nurses and **949** were auxiliary staff (health surveillance assistants, clerks, etc.)

	2015 Q4		2016 Q1		2016 Q2		2016 Q3	
Clinicians	687	*25%*	669	*25%*	703	*25%*	683	*25%*
Nurses	1,028	*38%*	1,029	*38%*	1,092	*39%*	1,055	*39%*
Pharmacy staff	16	*1%*	21	*1%*	18	*1%*	20	*1%*
Auxiliary Staff	965	*36%*	974	*36%*	974	*35%*	949	*35%*
Total	**2,696**		**2,693**		**2,787**		**2,707**	

An estimated 3 million ART patient visits are currently managed at the 732 ART sites per annum, based on 662,788 patients alive on ART and an average dispensing interval of 2.5 months. With 260 working days per year, an average of 12,236 patient visits are therefore managed by the ART sites per working day. At current staffing levels, this translates into an average of **18** ART patient visits per clinician and **12** per nurse per day. This approximate HRH capacity assessment does not take account of site-specific differences in patient burden and staffing levels and there are several medium and high burden sites with sub-optimal staffing. However, the national treatment program is fully decentralized to the health centre level and the program continues to devolve the growing patient burden to peripheral facilities. Since 2011, the steepest increase in ART patient numbers has been recorded at the 300 small peripheral sites that have the largest collective staffing capacity (see Figure 4 on page 26).

By the end of September, only **1,165 (42%)** of these active ART providers who had been selected for the 'first wave' of refresher trainings for the new clinical guidelines had been successfully re-trained. Ongoing administrative challenges with the funding for refresher trainings are expected to delay the national roll-out of the Test & Treat policy and other new policies covered in the 2016 guidelines. These delays may affect program performance against targets.

[4] Each of the 2 test kits is supposed to be tested with the negative and the positive control serum at least once per week.

5 HIV Testing and Counselling Program Outputs

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

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

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

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

5.1 HIV Testing Outputs

872,393 people[5] were tested and counselled for HIV between July and September 2016. This is a slight decrease from the previous quarter's testing outputs. Similar to previous quarter, the high performance was most likely owed to the deployment of new dedicated 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 boost routine provider-initiated HIV testing for patients.

847,041 (97%) of all tests were performed at health facilities, **10,842 (1%)** were done in stand-alone HTC sites and **14,510 (2%)** were done outside of facilities / in the community. **36,253** people newly diagnosed with HIV this quarter. Out of these, **35,385 (98%)** were diagnosed at health facilities; **554 (2%)** at stand-alone HTC sites; and **314 (<1%)** through community-based testing. The 'yield' for new diagnoses was **4.4%** at health facilities, **5.4%** at stand-alone HTC sites and **2.2%** in community settings (excluding clients with a previous positive result from the denominator for all 3 settings).

5.2 HIV testing access type

582,124 (67%) of people tested were patients receiving provider-initiated testing and counselling (PITC); **284,027 (33%)** accessed voluntary testing and counselling, door-to-door, community-based testing, etc.; and **6,242 (<1%)** came for testing with a *Family HTC Referral Slip* (FRS) that was issued to a family member at a prior HTS encounter. Based on a total of 43,131 FRS issued to index clients this quarter, the successful referral rate for family members

[5] 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.

was **14%** (6,242 / 43,131). This is only slightly higher than in the previous quarter (12%). Referral slips have remained under-utilized.

5.3 Age and sex distribution among HIV testing clients

Out of **872,393** people tested and counselled, **37%** were males and **63%** were females. **36%** of females were pregnant. The ratio of males **(48%)** to non-pregnant females **(52%)** has slightly declined compared with previous quarters. Pregnant women have to be excluded from this comparison because testing among pregnant women is almost entirely provider-initiated and there is no comparable access route targeting males.

187,328 (21%) of all people tested accessed HTC with their partners (as a couple).

49% of all people tested and counselled were 25 years and above, **37 %** were between 15-24 years and **14%** were children below 15 years. **4,204 (<1%)** of rapid tests done were among infants.

5.4 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 either at enrolment into pre-ART follow-up, or when starting ART if the test to confirm was not done in pre-ART. The 2016 national guidelines require a confirmatory DNA-PCR at the time of starting ART for all children under 24 months, regardless if the initial diagnosis was based on a positive DNA-PCR or a rapid antibody test. Follow-up rapid antibody testing for children is no longer recommended. However, roll-out of this new policy has been delayed due to the slow progress with refresher trainings.

252,930 (29%) of all clients tested accessed testing for the first time and **619,463 (71%)** were repeat testers. Based on the cumulative number of people who accessed HTC for the first time, a total of **7,026,992** people have been tested since introduction of the *first time HTC access* indicator in July 2007.

36,253 (4.4 %) out of all clients received a positive result for the first time. Positive rapid test results among infants (**631**) and inconclusive test results (**798)** both accounted for **<1 %** of new results given to clients.

576,404 (93%) of 619,463 repeat testers reported a *last negative* result. **40,384 (7%)** 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 enrolment into care. *Confirmatory test results* exceeded by **274** the number of *previous positive* clients, indicating some misclassification or data errors. **39,860 (99%)** of 40,658 confirmatory test results were concordant positive and **798 (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). The number of 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 underscores the importance of both routine

confirmatory testing before ART initiation as well as the need to continue strengthening quality assurance.

The number of patients newly enrolled into care (1,818 new in pre-ART; 41,994 started ART) exceeded by 3,154 (8%) the number of confirmatory positive results this quarter. This gap is likely explained by the large number of patients transitioning from pre-ART to ART under the Test & Treat policy. Almost all of these patients will have already received their confirmatory test when enrolling in pre-ART.

Figure 1: Confirmatory HIV testing coverage at ART sites in the 5 zones

Num.: total confirmatory HIV tests documented in HTC registers. Denom.: total new patients initiating ART at the site

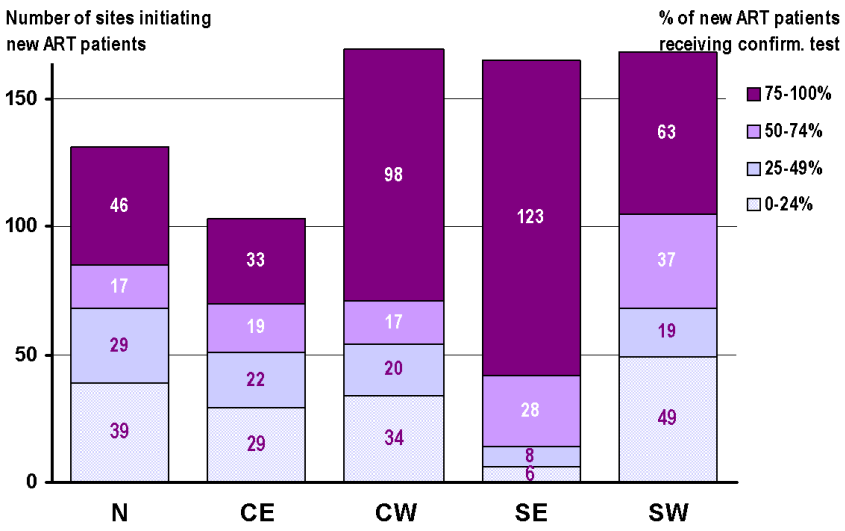


Figure 1 shows the number of ART sites by zone, stratified by the ratio of clients receiving confirmatory testing over the number of new ART patients. At 363 sites, the number of clients receiving confirmatory testing exceeded the number of new ART initiations. This was particularly common in the SE and CW zones with 123 and 98 sites, respectively. However, at most sites in the other zones, the number of confirmatory tests was less than half of the number of new ART initiations. Overall, confirmatory testing is increasingly performed at the site of first diagnosis, rather than at the ART clinic before initiation.

6 DNA-PCR testing for Early Infant Diagnosis of HIV (EID)

DNA-PCR testing is performed at 8 labs (Mzuzu Central Hospital, Mzimba District Hospital, Kamuzu Central Hospital, Queen Elizabeth Central Hospital, DREAM Blantyre, DREAM Balaka, Zomba Central 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.

561 (84%) of 669 sites with HIV exposed children in follow-up had collected and recorded at least 1 DNA-PCR sample during Q3 2016. A total of **9,157** 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 **5,421 (59%)** of these specimens and **3,113 (59%)** of these results had been communicated to the mother. The proportion of results received at the sites was **78%**, **66%** and **36%** for samples collected in July, August and September, respectively. A total of **180 (3%)** results received at the sites were positive.

The **8 laboratories** registered the **receipt** of **8,835** DNA-PCR samples that were collected during Q3 2016. This represents 96% of the 9,157 samples recorded in the logbooks at the sites. 7,859 (89 %) of the 8,835 registered samples arrived in the same quarter.

A total of **8,835** valid DNA-PCR results were dispatched from the labs in Q3 2016. **6,124 (69%)** of the dispatched results were from samples collected in Q3 2016, while 2,711 (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 15 and 33 days after sample collection.

5,073 (57%) of all results were from infants under 2 months old at the time of sample collection. 2,641 (30%) were 2-5 months, 752 (9%) were 6-11 months and 43 (<1%) were 12-17 months. 44 results were from older children or adults, presumably from samples sent to the lab as 'tie-breaker' for inconclusive rapid test results. The date of birth was missing for 282 samples.

Age at sample collection	Tot. Results	Positives	
<2 months	**5,073**	**62**	*1.2%*
2-5 months	**2,641**	**119**	*4.5%*
6-11 months	**752**	**64**	*8.5%*
12 months +	**87**	**17**	*19.6%*
(missing)	**282**	**19**	*6.7%*

281 (3.2%) 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 the process of early infant diagnosis and early initiation of ART for confirmed infected infants. The table below shows the distribution of ages when results were dispatched from the lab.

Age when result disp. from lab	Tot. Results	*(Col %)*	Positives	*(Col %)*
<2 months	**1,288**	*15%*	**12**	*4%*
2-5 months	**5,972**	*68%*	**144**	*51%*
6-11 months	**1,138**	*13%*	**82**	*29%*
12 months +	**155**	*2%*	**24**	*9%*
(missing)	**282**	*3%*	**19**	*7%*
Total	**8,835**	***100%***	**281**	***100%***

Out of 281 positive results dispatched, only 12 (4%) were sent before the child was 2 months old. A total of 156 (56 %) positive results were sent before the child was 6 months old and 238 (85%) were sent before the child was 12 months old. A total of 99 infants were started on ART in WHO stage 1 or 2 on the basis of confirmed HIV infection (see ART section below). This is equivalent to **42%** of the number of positive DNA-PCR results dispatched for children <12 months this quarter.

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 PMTCT/ART 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 **17,765** blood units were collected in Malawi during Q3 2016. MBTS collected **10,374 (58%)** of these, **100%** of which were screened comprehensively for the relevant TTIs (HIV, Hepatitis B, Hepatitis C, syphilis, malaria). In addition, **59** hospitals in Malawi collected a total of **7,391** units from replacement donors. **7,003 (95%)** of these units were screened for at least the 3 key TTIs (HIV, HepB and syphilis) and **5,047 (72%)** of these were also screened for HepC and malaria. This means that a total of **17,377 (98%)** 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, 374 were screened with any other combination of tests for TTIs.

A total of **11,914** potential replacement donors were documented in the blood donor registers at the facilities and **7,391** (62%) of these ended up donating. Facilities may have used different screening algorithms and potential donors may have been excluded on the basis of different criteria, including TTIs, blood group, haemoglobin concentration and/or clinical conditions. Testing for less prevalent TTs may have only been carried out for donors who passed the screening for more common conditions. In total, 79% of potential donors were tested for HIV, 79% for HepB, 79% for syphilis, 69% for malaria and 53% for HepC. Detailed data on outcomes of individual tests among all potential blood donors are presented in the Appendix.

8 Post Exposure Prophylaxis (PEP)

A total of **2,170** persons received PEP during Q3 2016. This is similar to the previous quarter (2,141).

9 Provider-Initiated Family Planning (PIFP)

The Integrated Clinical HIV Guidelines encourage health workers to routinely provide condoms to all adults in pre-ART and ART clinics. Women should also be offered at least the standard injectable contraceptive (Depo-Provera) during any pre-ART or ART visit. This policy aims to address the significant unmet need for family planning that had been observed among HIV patients in Malawi and to reduce the number of unwanted pregnancies among HIV-infected women (***PMTCT Prong 2***). HIV program reporting on PIFP is limited to women who received an injection of Depo-Provera in pre-ART and 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 3: Number and % of women retained in HIV care * who were on injectable contraceptives (Depo) by the end of 2016 Q3.

Zone	Pre-ART		ART		Both patient groups	
	Tot. women	On Depo	Tot. women	On Depo	Tot. women	On Depo
NZ	127	**33** *26%*	37,118	**11,924** *32%*	37,245	**11,957** *32%*
CEZ	57	**4** *8%*	30,025	**4,454** *15%*	30,082	**4,458** *15%*
CWZ	447	**132** *30%*	78,111	**12,046** *15%*	78,557	**12,178** *16%*
SEZ	514	**59** *12%*	119,850	**34,213** *29%*	120,364	**34,273** *28%*
SWZ	928	**165** *18%*	122,104	**24,969** *20%*	123,032	**25,134** *20%*
Malawi	2,073	**394** *19%*	387,207	**87,606** *23%*	389,280	**88,000** *23%*

* estimated from the total number of patients retained in pre-ART and ART, multiplied by the proportions of females and adults registered

Table 3 shows that **88,000 (23%)** of 389,280 women in care received Depo-Provera from HIV clinics in Q3 2016. The northern Zone had achieved the highest coverage among women in pre-ART and ART. Patient coverage has slightly increased in this quarter. 584 (80%) of ART/PMTCT sites had stocks of Depo-Provera in October 2016. This is a slight decline compared with 83% in July 2016.[6] The HIV Program is no longer supplementing FP supplies through procurement and distribution of additional Depo-Provera to sites.

10 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 pre-ART and 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 95%.

Table 4: Number and % of patients retained in HIV care who were on cotrimoxazole and isoniazid preventive therapy (CPT, IPT) by the end of 2016 Q3.

Zone	CPT								IPT	
	Exp. child		Pre-ART		ART		All patient groups		Pre-ART	
	Tot. pat.	On CPT	Tot. pat.	On CPT	Tot. pat.	On CPT	Tot. pat.	On CPT	Tot. pat.	On IPT
NZ	9,751	**7,180** *74%*	538	**353** *66%*	65,707	**61,064** *93%*	75,996	**68,598** *90%*	538	**245** *46%*
CEZ	8,705	**6,963** *80%*	271	**244** *90%*	52,356	**51,463** *98%*	61,332	**58,670** *96%*	271	**212** *78%*
CWZ	18,366	**13,832** *75%*	2,302	**2,105** *91%*	135,416	**132,537** *98%*	156,084	**148,473** *95%*	2,302	**1,453** *63%*
SEZ	33,193	**26,919** *81%*	2,460	**2,312** *94%*	194,771	**184,057** *94%*	230,424	**213,288** *93%*	2,460	**1,632** *66%*
SWZ	30,433	**25,975** *85%*	3,267	**2,954** *90%*	209,938	**187,686** *89%*	243,638	**216,614** *89%*	3,267	**2,365** *72%*
Malawi	100,448	**80,869** *81%*	8,838	**7,967** *90%*	658,188	**616,807** *94%*	767,474	**705,643** *92%*	8,838	**5,907** *67%*

Table 4 shows that **705,643 (92 %)** of 767,474 all patients in care were on CPT at the end of Q3 2016.

[6] Many Mission hospitals do not provide family planning.

10.1 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, pre-ART and 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 pre-ART and exposed child follow-up.

644,192 (98%) of all patients retained on ART were screened for TB at their last visit before end of September 2016. Out of these, **5,093 (1%)** patients were classified as new TB suspects. **2,007 (<1%)** patients were confirmed to have TB (clinical or lab based) and **1,414 (70%)** of these were on TB treatment; the remaining **593** had either not yet started or interrupted TB treatment. An excerpt from the data in the **Annex** (*Cumulative ART outcomes*) is shown below.

Current TB status among ART patients (ICF)

ICF not done (Current TB status unknown/ not circ)		**13,996**	**2%**
ICF done		**644,192**	**98%**
	TB not suspected	**637,092**	99%
	TB suspected	**5,093**	1%
	TB confirmed	**2,007**	0%
		TB confirmed, not on treatment	**593**	30%
		TB confirmed, on TB treatment	**1,414**	70%

10.2 Isoniazid Preventive Therapy (IPT)

All pre-ART patients with a negative screening outcome for TB symptoms are eligible for IPT. **5,907 (67%)** of 8,838 patients retained in pre-ART were on IPT by the end of September 2016. Isoniazid was in stock at 600 facilities during the October 2016 supervision visit. The pre-ART program will be phased out over the next quarter as all sites are expected to transition to universal Test & Treat.

11 HIV-Related Diseases

Table 5 shows the number of patients treated for key HIV-related indicator diseases. **4,613** patients were started on TB treatment this quarter and HIV status was ascertained for **4,532 (98%)**. **2,300 (51%)** of these were HIV positive and **1,953 (85%)** of all HIV positives were already on ART when starting TB treatment. In Q3 2016, **947** and **872** patients received Diflucan for acute cryptococcal meningitis and oesophageal candidiasis, respectively. **208** patients with Kaposi sarcoma were registered for ART in this quarter.

Table 5: 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
2015 Q4	3,931	3,751 *95%*	2,035 *54%*	1,665 *82%*	295	973	1,234
2016 Q1	4,028	3,861 *96%*	2,084 *54%*	1,592 *76%*	284	1,101	993
2016 Q2	3,998	3,887 *97%*	2,089 *54%*	1,681 *80%*	229	1,251	741
2016 Q3	4,613	4,532 *98%*	2,300 *51%*	1,953 *85%*	208	947	872

12 HIV-Exposed Child Follow-Up

12.1 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.

12.2 HIV Exposed Child Registration Data

11,362 HIV exposed children were newly enrolled into follow-up during Q3 2016; **8,065 (71%)** of these were under the age of 2 months. This represents timely enrolment for **91%** of the 8,880 known HIV exposed children discharged from maternity this quarter. The total number of new enrolments (11,362) exceeds by 2,482 (28%) the total number of known HIV exposed children discharged from maternity (8,880). 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.

12.3 Birth Cohort Outcomes

There were **8,409** infants in the **2-month age cohort**. **4,655 (55%)** had received a DNA-PCR result. **75 (2%)** of these were confirmed HIV infected. An additional **10** infants were diagnosed with *presumed severe HIV disease,* which means that a total of **85** infants were eligible for ART. **59 (69%)** of these had started ART. This is a considerable decrease from the previous quarter (84%). Out of the entire 2-month age cohort, **7,606 (94%)** were retained in exposed child follow-up, **59 (<1%)** had started ART and **36 (<1%)** were discharged confirmed uninfected[7]. **36 (<1%)** were known to have died and **342 (4%)** had been lost to follow-up.

There were **9,683** children in the **12-month age cohort**. Current HIV infection status was known for **5,961 (62%)** children (DNA-PCR or rapid antibody test) and **158 (3%)** of these were confirmed HIV infected. **5 (<1%)** additional children had been diagnosed with *presumed severe HIV disease,* which means that a total of **163** children were eligible for ART. **161 (99%)** had started ART. The proportion of positives starting ART is higher than the previous quarter (87 %). Out of the entire age cohort, **7,389 (80%)** were retained in exposed child follow-up, **161 (2%)** had started ART and **45 (<1%)** were discharged confirmed uninfected.[7] **1,577 (17%)** were lost to follow-up and **80 (<1%)** were known to have died.

There were **8,769** children in the **24 month age cohort**. Current HIV infection status was known for **5,059 (58%)** children (DNA-PCR or rapid antibody test) and **231 (5%)** of these were confirmed HIV infected. **27** additional children had been diagnosed with *presumed severe HIV disease,* which means that a total of **258** children were eligible for ART. **230 (89%)** of these had started ART. Out of the entire age cohort, **473 (6%)** were retained in exposed child follow-up, **230 (3%)** had started ART and **4,707 (56%)** were discharged confirmed uninfected. **2,863 (34%)** were lost to follow-up and **103 (1%)** were known to have died.

Confirmed HIV-free survival at age 24 months in this quarter remained implausibly low at **56%.** This was related to the fact that only 58% in this cohort had a known HIV status. 3,710 (42%) children were classified as '*current HIV infection status unknown*' and many of these may be among the 2,863 children lost to follow-up and the 103 children who had died. However, 473 (9%) 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. Although much progress has been made, there are still problems with scheduled HIV testing (and documentation of test results) at 6 weeks, 12 and 24 months of age.

[7] 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.

13 Pre-ART

13.1 Pre-ART Registration Data

The ongoing delays with the implementation of refresher trainings have resulted in a slow roll-out of the Test & Treat policy and many sites had maintained their pre-ART program. A total of **1,818** patients were newly registered for pre-ART follow-up in Q3 2016. **180 (2%)** of these were children aged 5-14 years. The number of new pre-ART enrolments decreased considerably from the previous quarter (6,623 total).

8,838 (4 %) of all patients ever registered were still retained in pre-ART follow-up by the end of September 2016; **145,104 (69 %)** had started ART; **55,237 (26 %)** had been lost to follow-up; **2,006 (1%)** were known to have died. Based on a subtraction of cumulative outcomes from the previous quarter, **26,336** pre-ART patients started ART during Q3 2016 and **2,355** were lost to follow-up. The cumulative number of patients who died in pre-ART was lower compared to previous quarter. This implausible decline is due to some EMR sites failure to report accurately. CPT coverage among pre-ART patients was **90%** in Q3 2016 and IPT coverage was **67%**. **395 (19%)** of 2,073 women had received Depo-Provera from their pre-ART clinic. Further details on CPT, Depo-Provera and IPT are presented in **Tables 3** and **4** in the sections above.

All remaining pre-ART patients are expected to transition to ART in the coming quarters as the Test & Treat policy is rolled out to all sites.

14 PMTCT / ART

The implementation of ***PMTCT Option B+*** has effectively integrated PMTCT and ART services. The program aims to initiate lifelong ART for all HIV infected women as early as possible in pregnancy. 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.

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

From **Q2 2015**, the PMTCT data elements (HIV ascertainment and ART status) were also added to the first section of ANC reporting form that captures women's status at their first (booking) visit. The ANC report now includes the HIV and ART status at the first visit for women starting ANC in the reporting period and the final HIV and ART status of women who had completed

ANC by the end of the reporting period. This addition aims to monitor PMTCT service implementation more closely in time, allowing for corrective action in the course of subsequent visits.

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

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

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

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

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

a) Double-counting of women starting ART in pregnancy and subsequently transferring to another site. These women are counted multiple times as 'pregnant at the time of starting ART' in the quarterly ART cohort reports because the disaggregation of age, sex and reason for starting ART applies to all patients newly registered in the quarter, including transfers in. Separate *ART 'survival' analyses* are collected each quarter for women started under Option

B+. The proportion of women transferred within 12 months of registration is used to adjust the quarterly number of pregnant women starting ART for transfers.

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

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

Coverage is calculated by dividing the number of patients served by population denominators. The denominators are derived from expected pregnancies based on population projections and HIV prevalence from epidemiological surveillance (source: 2016 Spectrum model for Malawi). There are an estimated 13,500 HIV infected pregnant women in the population per quarter (1/4 of 54,000 in 2016).[8]

14.2 ARV Coverage among Pregnant / Breastfeeding Women and Exposed Infants

12,038 (89%) of the estimated 13,500 HIV infected pregnant women in Malawi this quarter were on ART. This is based on **7,555** [9] women at maternity who were already on ART when getting pregnant and **4,483** [10] women who newly initiated ART in pregnancy. This is an increase in ART coverage from 83% in the previous quarter.

An additional **1,284** [11] breastfeeding women started ART due to ***Option B+*** (in WHO clinical stage 1 or 2), bringing the total number newly started on ART under *Option B+* to **5,767**. Most women starting ART while breastfeeding were probably identified late in maternity or early in the postnatal period, but this group may also include some women who re-initiated after interrupting ART in pregnancy. **8,386** infants were confirmed to have started NVP prophylaxis at maternity.

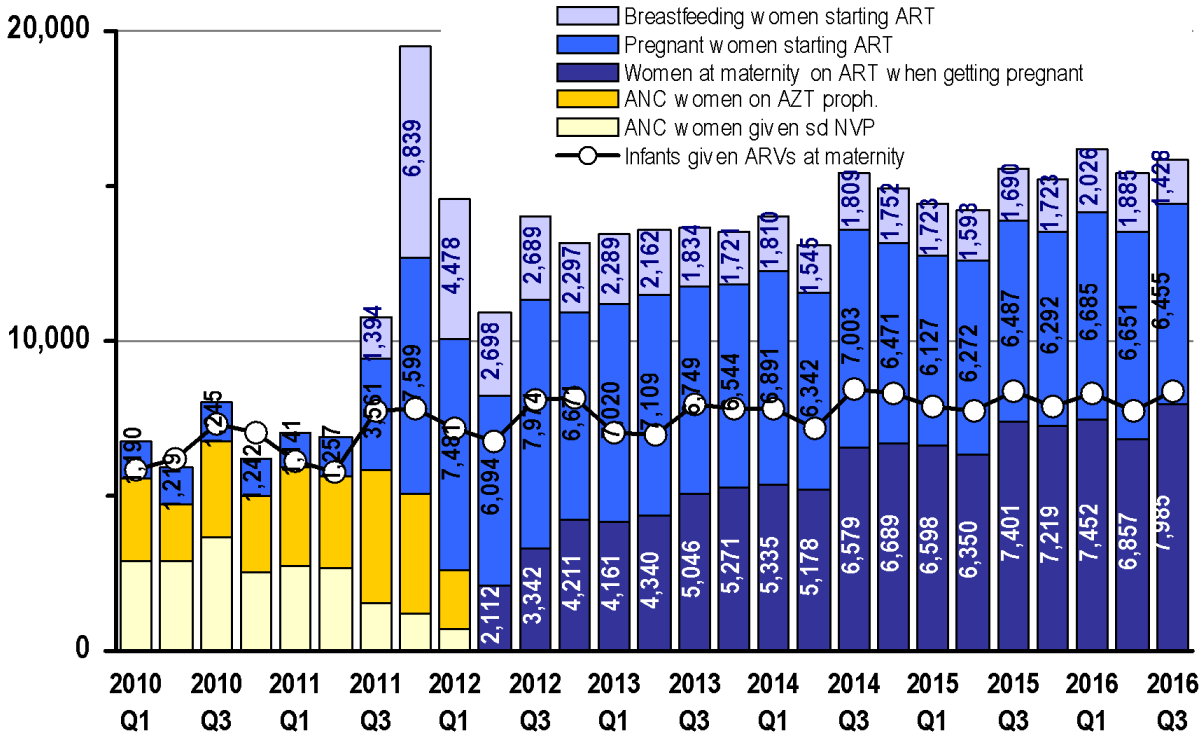
Figure 2 shows the transition from prophylactic ARV regimens for HIV infected mothers to universal ART under ***Option B+*** (registration data; not adjusted as above). The (less effective)

[8] 2016 Spectrum estimates.
[9] 7,985 women who started ART before pregnancy admitted at maternity; reduced by 5% to adjust for double-counting of 7,139 referrals among 132,461 total admissions.
[10] 6,455 women registered at ART clinics who were pregnant at the time of starting ART; a) 10% are discounted to adjust for double-counting of transfers based on 854 of 8,443 women who transferred within 12 months of registration (12 month Option B+ survival analysis); b) 22.7% are discounted to account for presumed failed ART initiations based on 1,782 of 7,836 women lost to follow-up within 6 months of registration (6 month Option B+ survival analysis).
[11] 1,428 women registered at ART clinics who were breastfeeding at the time of starting ART; reduced by 10% to adjust for double-counting of transfers based on 854 out of 8,443 women who transferred within 12 months of registration (12 month Option B+ survival analysis). Failed ART initiations are thought to be less common among this group, so no further adjustment is made.

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 2: 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.



14.3 HIV Services at ANC

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

14.3.1 HIV Ascertainment and ART Coverage

Booking cohort:

152,855 women attended ANC for their first visit between July and September 2016. This is 92% of the estimated 166,750 pregnant women in the 2016 population during one quarter.[12] **144,957 (95%)** of women in this cohort had their HIV status ascertained at the first visit. Out of these, **11,048 (8%)** presented with a valid previous test result and **133,909 (92%)** received a new test. A total of **11,072 (8%)** of women were found HIV positive: **6,325 (57%)** of these from a documented previous test and **4,723 (43%)** from a new test. **10,386 (94%)** of all positives were on ART: **6,137 (59%)** of these were already on ART when starting ANC and **4,249 (41%)** newly started ART at their first ANC visit. Out of these, **3,646 (86%)** were in their 1st or 2nd trimester and **603 (14%)** were in the 3rd trimester of pregnancy.

[12] Estimated as ¼ of 667,000 births projected for 2016 (Demographic Proj Spectrum 2016).

Outcome cohort:

151,941 women had started ANC between January and March 2016 and their outcomes were reported between July and September 2016. Only **38,078 (25%)** of women in this cohort attended the recommended minimum of 4 focussed ANC visits.

146,596 (96%) of the outcome cohort had their HIV status ascertained at least once in the course of ANC. This is similar to the previous quarter (95 %). **10,546 (7 %)** presented with a valid documented previous HIV test result and **136,050 (93 %)** received a new HIV test result at ANC. A total of **11,183 (7.6 %)** women were found HIV positive. This is consistent with the latest Spectrum projections (8.1% HIV prevalence among pregnant women in 2016).[8]

10,503 (92 %) of (known) HIV infected women were on ART by the end of ANC. This represents **78%** coverage of the estimated 13,500 HIV positive pregnant women per quarter at the population level. Of the **10,503** ANC women who were known to receive ART, **5,493 (52%)** were already on ART when starting ANC, **4,159 (40%)** initiated before 28 weeks of pregnancy and **851 (8%)** initiated during the last trimester of pregnancy. **10,466 (94%)** of HIV infected women at ANC were on Cotrimoxazole Preventive Therapy. **10,198 (91%)** of known HIV infected women attending ANC received the infant dose of ARVs (nevirapine syrup) to take home.

14.3.2 Syphilis Screening

93,651 (62%) of women in the outcome cohort were tested for syphilis and **1,192 (1%)** were syphilis positive. The syphilis testing rate has improved considerably over the last few quarters and the proportion of positive syphilis test results is now very close to the syphilis prevalence estimated from the 2010 ANC sentinel surveillance round.

14.4 HIV Services at Maternity

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

Between July and September 2016, **125,312** women were admitted for delivery to maternity; **7,139** of these were referred to another facility before delivery, resulting in **132,451** total admissions to maternity during Q3 2016. Out of all admissions, **122,831 (96%)** delivered at health facilities, while **4,495 (4%)** had already delivered before reaching a facility. The **122,831** facility deliveries represent **74%** of the estimated 166,750 quarterly deliveries in the population in 2016. This is considerably less than the 91% reported in the 2015-2016 Malawi DHS.[13]

A total of **120,302 (96%)** deliveries were conducted by skilled birth attendants, **468 (<1%)** by paramedical staff and **4,227 (3%)** were not attended by any of the above (probably mainly among women who delivered before reaching maternity). **16,390 (12%)** of women developed obstetric complications. The most common leading complications were obstructed / prolonged labour (**5,499** cases) and post-partum haemorrhage (**1,908** cases). A total of **127,326** babies were born, **123,159 (97%)** were singletons and **4,167 (3%)** were

[13] National Statistical Office (NSO) [Malawi] and ICF International. 2016. Malawi Demographic and Health Survey 2015-16: Key Indicators Report. Zomba, Malawi, and Rockville, Maryland, USA. NSO and ICF International.

twins/multiples. There were **125,289 (98%)** live births and **2,037 (2%)** stillbirths. **124,366 (99%)** of babies born alive were discharged alive and **923 (1%)** died before discharge. **124,961 (>99%)** of women were discharged alive and **86 (<1%)** women died before discharge, which is equivalent to a maternal mortality ratio of **69 per 100,000** live births among women attending maternity.

14.4.1 HIV Ascertainment at Maternity

130,260 (99%) women had their HIV status ascertained at maternity. Out of these, **124,730 (96%)** presented with a valid previous HIV test result and **5,530 (4%)** received a new test. A total of **9,690 (7%)** women were HIV positive and **120,570 (93%)** were negative. The **130,260** women whose HIV status was ascertained at maternity represent **78%** of the expected 166,750 women delivering in the population.

HIV exposure status was ascertained for **123,018 (99%)** out of 124,366 babies born and discharged alive. **8,880 (7%)** of these were born to a known HIV positive mother.

14.4.2 ARV Coverage at Maternity

A total of **9,648 (>99%)** of known HIV infected women admitted to maternity received ART. Out of these, **7,985 (83 %)** had started ART before pregnancy, **914 (9%)** initiated ART during the 1st or 2nd trimester, **486 (5%)** initiated during the 3rd trimester and **263 (3%)** initiated ART at maternity.

A total of **8,683 (94%)** of 8,880 infants who were known HIV exposed and discharged alive started daily NVP prophylaxis at maternity. This represents **64%** coverage of the estimated 13,500 HIV exposed infants born in the population in this quarter.

15 ART Access and Follow-Up Outcomes

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

15.1 New ART Registrations during Q3 2016

By the end of September 2016, there were 732 static ART sites in Malawi. 63% of these sites were managed by government, 20% 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.

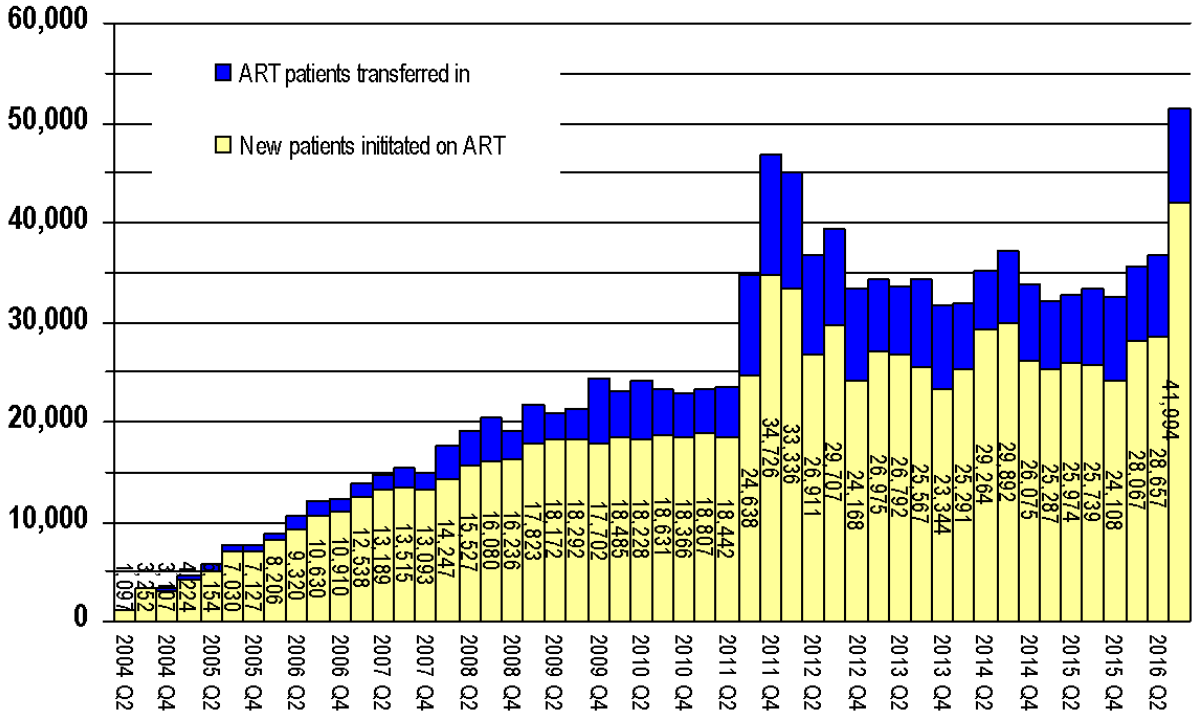
Implementation of the Malawi Integrated Clinical HIV Guidelines, which adopted Option B+, started in July 2011, triggering a massive surge in new ART initiations (see **Figure 3**). The new policy for universal ART eligibility ("**Test & Treat**") was introduced in **May 2016**. This policy has led to an unprecedented increase in ART initiations in the quarter.

A total of **41,994** patients initiated ART for the first time in Q3 2016. This is an increase of 13,337 compared with the number of patients initiated in Q2, when only 29 sites had started asymptomatic patients on ART due to the delayed roll-out of refresher trainings for the 2016 guidelines. The total number of patients newly initiated on treatment exceeds by **5,741 (16%)** the total number of people newly diagnosed with HIV during the quarter. This is due to the change in eligibility criteria to a new policy of universal treatment. The majority of pre-ART patients have therefore been initiated ART in Q3 2016.

Among all new ART clinic registrations in Q3 [14], **37%** were males and **63%** were females. **6,455 (20%)** of the registered females were pregnant at the time of starting ART.

Figure 3: Patients newly inititated 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 **40,888 (80%)** of all patients registered started in WHO stage 1 or 2 and **27,059 (66%)** of these started under universal ART eligibility policy. **9,036 (18%)** of patients registered started in WHO stage 3 and **1,298 (3%)** started in stage 4.

4,512 children were registered at ART sites in Q3 2016. **795 (18%)** of these were children aged 12-59 months in WHO stage 1 or 2. **102 (2%)** children started ART with presumed severe HIV disease. This is slightly lower than the previous quarter (111). **99** 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 8,880 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)[15], only about 202 of these known HIV exposed infants may have been infected perinatally during Q3 2016. However, considering the projected 1,160 new infant HIV infections in the 2016 population per quarter[8], early infant treatment coverage remains low at an estimated **9%** (99 / 1,160). The most significant bottleneck for

[14] These proportions include the 28,657 patients newly initiating ART, but also 7,533 patients previously started on ART who transferred between sites and 442 patients who re-initiated ART after treatment interruption.

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

early infant treatment remains the identification of HIV infected pregnant / breastfeeding women.

776 (2 %) out of all ART clinic registrations were patients with TB: **406 (1%)** had a current and **370 (1%)** a recent history of TB. **208 (1%)** of patients registered had Kaposi's sarcoma.

15.2 Cumulative ART Registrations up to September 2016

By the end of September 2016, there were a cumulative total of **1,216,404** clinic registrations, of which **973,627 (80%)** were patients newly initiated on ART and **229,141 (19%)** were patients who transferred between clinics. **13,636 (1%)** out of all clinic registrations were patients who re-initiated ART after treatment interruption. Out of all registrations, **36**% were males and **64**% were females, **91**% were adults and **9**% were children (<15 years). Private sector clinics accounted for **35,681** (2.9%) of total patient registrations.

15.3 ART Outcomes

662,788 patients were alive on ART by the end of June 2016. This is equivalent to **68% ART coverage** among the estimated 979,000 HIV positive population in Malawi in 2016. This achievement slightly exceeds the national ART coverage target for June 2016 (63%). The number of patients on ART includes an estimated 4,600 patients in transit between sites (given the standard 3 month dispensing interval, 50% of the 9,200 patients newly registered as transferred out at sites across the country are assumed to be in transit at the end of the quarter).

Out of the **973,627** patients ever initiated on ART, **662,788 (68%)** were retained alive on ART, **89,092 (9%)** were known to have died, **237,122 (24%)** were lost to follow-up and **3875** (<1%) were known to have stopped ART.

An estimated **610,067** adults and **52,721** children (<15 years)[16] were alive on ART by the end of September 2016. This represents **65%** (52,721 / 81,000) and **68%** (610,067 / 898,000) ART coverage among children and adults, respectively.

[16] The number of ART patients with current age <15 years is extrapolated from the subgroup of 28,218 children on paediatric ARV formulation (28,080 retained at last site of registration + 0.49% assumed in transit between sites). Children above 25kg use adult formulation ARVs. In 2014, DHA and CHAI conducted a retrospective weight cohort survey of over 16,000 children on ART which showed a growing proportion of children <15 years were above the weight threshold for paediatric formulation. For Q2 2016, the number of children aged <15 years is estimated at 1.76 times the number of children on paediatric formulation.

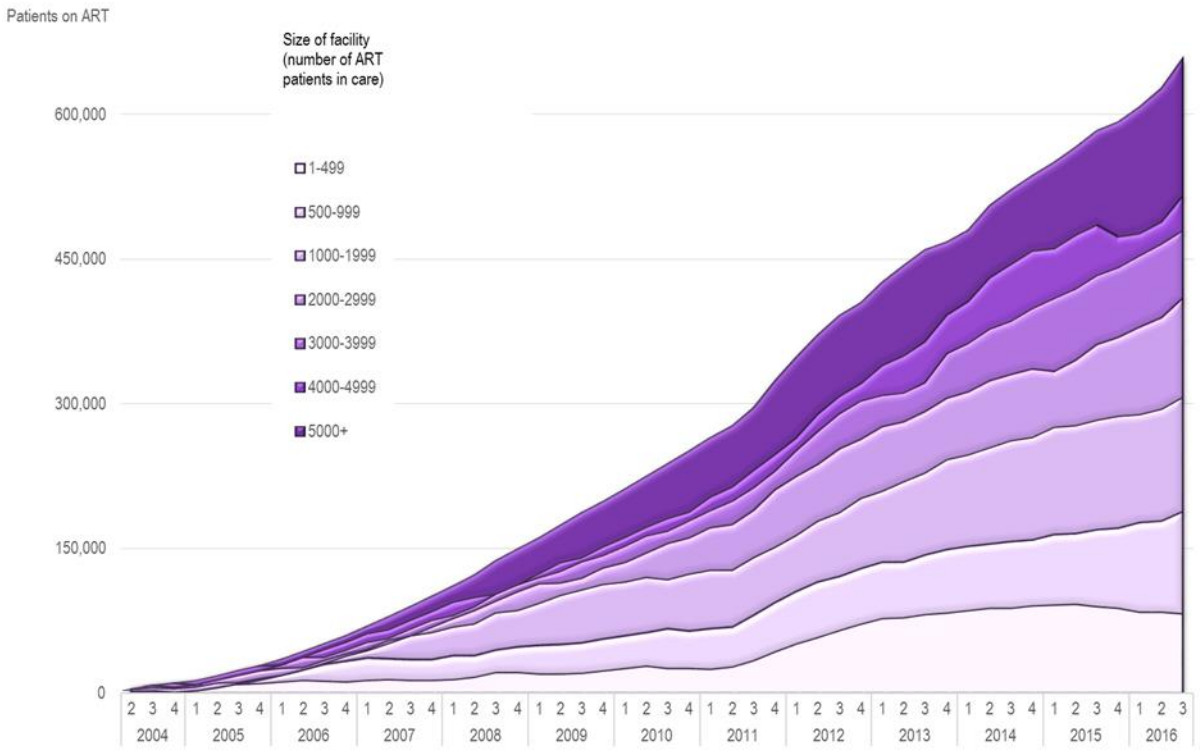


Figure 4 Patients alive on ART at the end of each quarter, stratified by size of facility (number of patients alive on ART)

Figure 4 shows the increase of patients alive on ART by the end of each quarter, stratified by facility volume. There was a net increase of **31,619** patients in Q3 of 2016. **Figure 4** also shows the decentralization of Malawi's ART program that followed the opening of over 300 new ART sites with the introduction of Option B+ in Q3 2011. During 2012 and 2013, the greatest increase in ART patient numbers was seen at sites with fewer than 500 patients alive on ART. However, patient numbers at the high and ultra-high burden sites have continued to increase considerably in the more recent quarters. By the end of June 2016, **47%** of the national ART patient cohort was in care at sites with fewer than 2,000 patients.

Figure 5: 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)

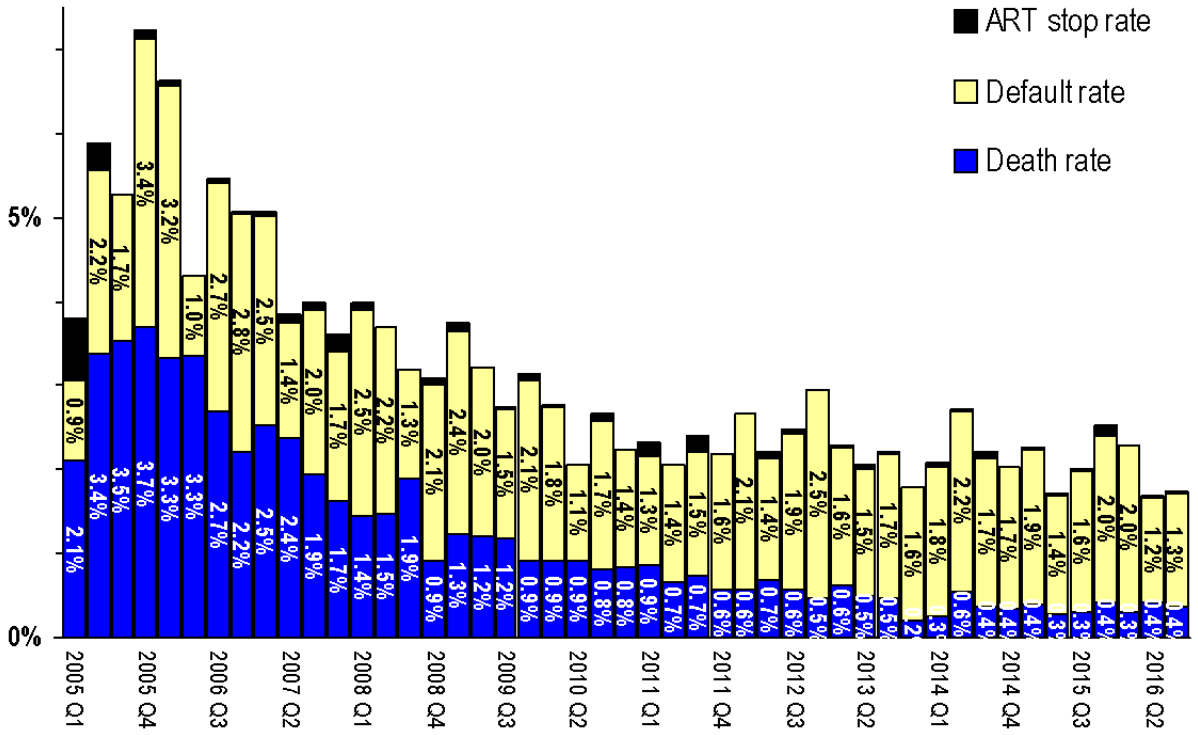


Figure 5 shows the considerable decrease of ART drop-out rates since the start of the national program most of which was contributed by reduction in mortality. Quarterly defaulter rates have stabilized around 1.8% over the last 5 years. This could partly be due to undocumented 'silent' transfers, undocumented mortality or people actually stopping treatment. Efforts to harmonize strategies for patient retention are currently ongoing, including national standard operating procedures (SOPs) and tools for linkage and retention aiming to better track patients who miss appointment and document outcomes.

There were **2,547** new deaths, **8,988** new defaulters and **123** new stops in Q3 2016. This translates into a quarterly death rate of **0.4%** and a defaulter rate of **1.3%** among the patients alive and on treatment in this quarter.

Figure 6: Patients starting ART in WHO stage 4 and deaths in the first 3 months after ART initiation. (Shown as proportions among new patients registered each quarter)

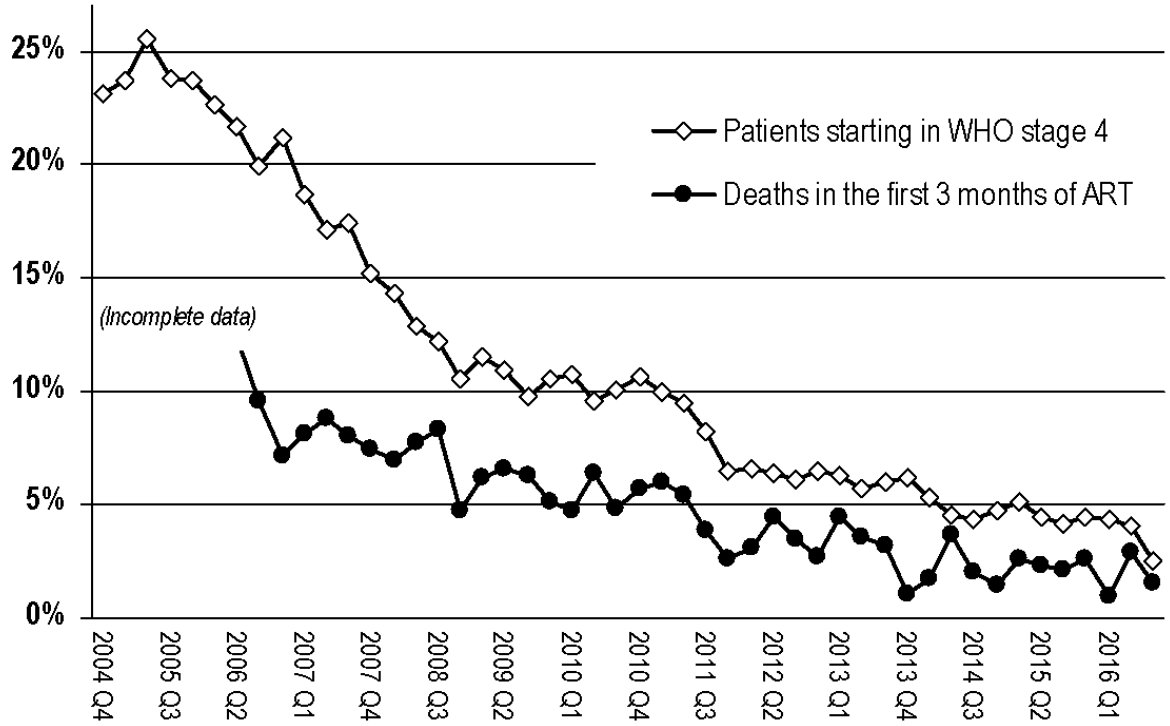


Figure 6 shows the considerable decline in **early mortality** since the start of the program. In Q2 of 2006 as many as 11% of new patients died within the first 3 months of ART initiation when about 20% of patients newly ART initiated on ART had WHO stage 4 conditions. As testing services were scaled up and people were diagnosed and linked to treatment earlier, in line with new guidelines recording ART initiation at higher CD4, early mortality on ART has since declined significantly. Over the past 5 years, fewer than 5% of new patients have died within the first 3months of ART initiation and early mortality seems to have stabilized around 2.5%. The test and treat policy for all may result in a further decline in early mortality.

15.4 ART Cohort Survival Analysis

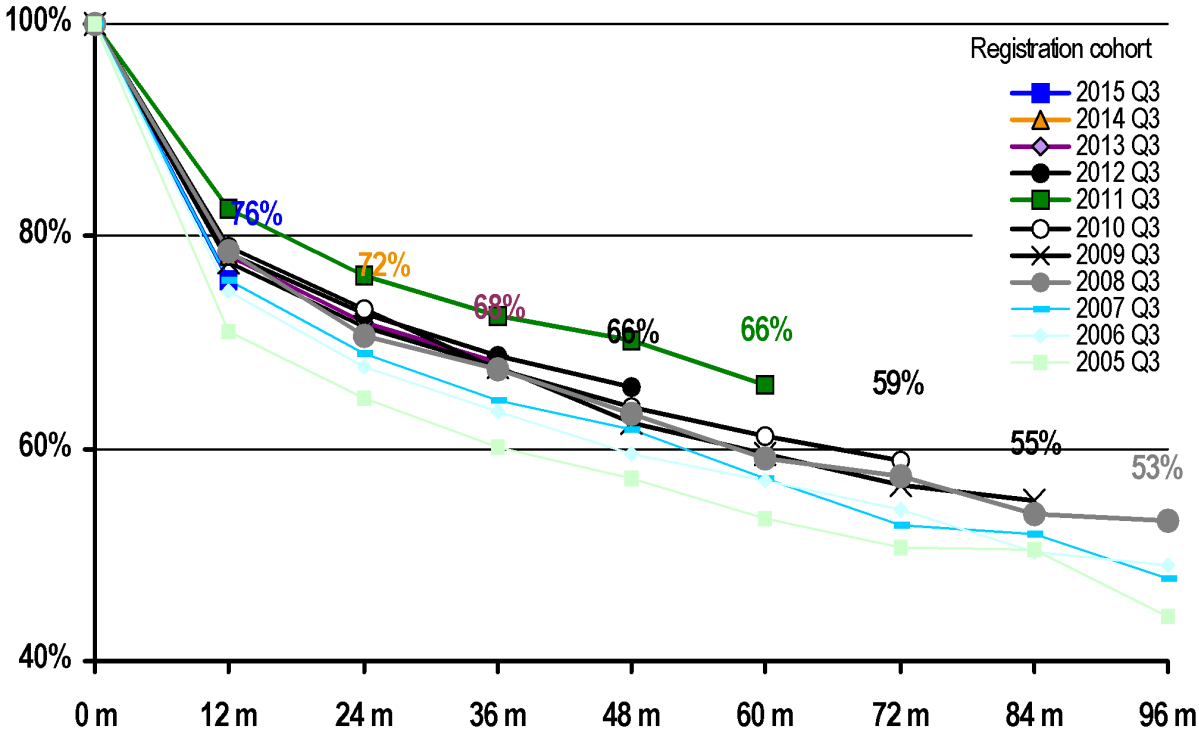
A 12, 24, 36, 48, 60, 72, 84 and 96-month **'cohort outcome survival analysis'** was conducted for patients registered in Q3 of 2008 to 2015, respectively. A separate 12-month cohort outcome analysis was conducted for children who were under 15 years at the time of ART initiation and who registered for ART in Q3 2015. A further subgroup analysis was done for women who started ART under ***Option B+*** in Q3 of 2013, 2014, 2015 and Q1 of 2016.

76% of adults and **79% of children** were retained alive on ART after 12 months on treatment. The 12-month retention rate among adults was affected by the lower retention of women who started under Option B+ (71%, see below). **78%** of adults who started for other reasons were retained at 12 months. These results remain below the WHO target of 85%. The majority of patients classified as lost to follow-up are likely to have stopped/ interrupted ART, but others will have transferred to another facility without notifying the previous site. 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.[17]

Figure 7 shows the continuous improvement of long-term treatment outcomes over time. However, contrary to expectations, 12-month retention for the 2014 and 2015 cohorts was similar to the cohorts initiated in 2010, 2011 and 2012. This is largely explained by the lower early retention among women started under Option B+ and an increase in 'silent transfers' due to the ongoing decentralization of ART services in Malawi.

Figure 7: Group cohort survival analysis: Proportion of patients retained alive on ART 12, 24, 36, 48, 60, 72, 84 and 96 months after ART initiation



6-month group cohort survival outcomes were known for **8,486 (98%)** out of 8,658 women registered as having started ART under *Option B+* in Q1 2016. [18] The 8,486 women in this cohort survival analysis include 650 (8%) women who transferred between sites. These transfers are double counted and discounted from the denominator (7,836) for the calculation of retention rates.

[17] 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

[18] 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.

5,995 (77%) women in this cohort were retained at 6 months after registration. Of those not retained, **1,782 (97%)** were lost to follow-up, **20 (1%)** were known to have stopped ART and **39 (2%)** were known to have died.

12-month group cohort survival outcomes were known for **8,443** women registered as having started ART under *Option B+* in Q3 2015. [18] This exceeds by 276 (3%) the number of women registered under Option B+ in the quarterly cohort analysis in Q3 2015. This small discrepancy is likely due to errors in data abstraction. The 8,443 women in this cohort survival analysis include 854 (9%) women who transferred between sites. These transfers are double counted and discounted from the denominator (7,589) for the calculation of retention rates.

5,353 (71%) of women in this cohort were retained at 12 months after registration. **2,130 (95%)** of those not retained were lost to follow-up, **33 (1%)** were known to have stopped ART and **73 (3%)** were known to have died.

24-month group cohort survival outcomes were known for **9,095 (98%)** women registered as having started ART under *Option B+* in Q3 2014. [18] This exceeds by 313 (4%) the number of women registered under Option B+ in the quarterly cohort analysis in Q3 2014. Similarly, this discrepancy is likely due to errors in data abstraction. The 1,083 women in this cohort survival analysis include 907 (12%) women who transferred between sites. These transfers are double counted and discounted from the denominator (8,012) for the calculation of retention rates.

5,216 (65%) of these were retained at 24 months after registration. **2,664 (95%)** of those not retained were lost to follow-up, **59 (2%)** were known to have stopped ART and **73 (3%)** were known to have died.

1,809 (21%) of the women in the 24-month Option B+ survival cohort had initiated ART in the breastfeeding period and **1,454 (17%)** started in the third trimester / in labour; considering the 24 month median breastfeeding period in Malawi (2010 MDHS), more than half of the women in this cohort can be assumed to have stopped breastfeeding. The **65% retention rate at both 24 and 36 months** after ART initiation confirms that a high proportion of women started under Option B+ **remain on ART beyond the cessation of breastfeeding**.

The 6-month retention rate was similar to previous quarter but slightly higher than in Q1 2016. These are satisfactory results. Most of the women lost to follow-up failed to return after their first visit and many of these may have never actually started ART due to inadequate counselling and preparation in the initial phase of implementation. The program is examining the different modes of delivery closely to further improve uptake and retention on *Option B+*.

6 month survival OptionB+

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations	8,486	100%
Transfers out (double counted)	650	8%
Total not transferred out (patients in cohort)	7,836	92%
Total alive on ART	5,995	77%
Total not retained	1,841	23%
Defaulted	1,782	97%
Stopped ART	20	1%
Died	39	2%

12 month survival OptionB+

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations	8,443	100%
Transfers out (double counted)	854	10%
Total not transferred out (patients in cohort)	7,589	90%
Total alive on ART	5,353	71%
Total not retained	2,236	29%
Defaulted	2,130	95%
Stopped ART	33	1%
Died	73	3%

24 month survival OptionB+

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations	9,095	100%
Transfers out (double counted)	1,083	12%
Total not transferred out (patients in cohort)	8,012	88%
Total alive on ART	5,216	65%
Total not retained	2,796	35%
Defaulted	2,664	95%
Stopped ART	59	2%
Died	73	3%

36 month survival OptionB+

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations	9,102	100%
Transfers out (double counted)	1,278	14%
Total not transferred out (patients in cohort)	7,824	86%
Total alive on ART	5,047	65%
Total not retained	2,777	35%
Defaulted	2,590	93%
Stopped ART	33	1%
Died	154	6%

15.4.1 Secondary outcomes of patients retained on ART

658,241 patients who were alive on ART and remained at their facilities have documented secondary outcomes.

ART Regimens

648,066 (98%) of patients were on first line regimens. The number of patients on 2nd line ART increased by 547 from the previous quarter, reaching **9,358** at the end of Q3. **764 (<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, **27,902 (4%)** were on paediatric formulations and **26,676 (96%)** of these were on the standard first line for children (regimen 2P: AZT/3TC/NVP). Almost all patients on 1st line ART in the country are on one of two regimens: **575,763 (93%)** on regimen **5A** (tenofovir / lamivudine / efavirenz) and **31,616 (5%)** on regimen 2A (zidovudine / lamivudine / nevirapine). Despite the transition from stavudine-based regimens that started in 2013, 74 facilities still recorded total of **791 (<1%)** patients on regimen 1A (stavudine / lamivudine / nevirapine). Half of these patients are from eight health facilities – Thyolo District Hospital, African Bible College, Zomba Central Hospital, Mulanje District Hospital, Chileka Health Centre, Karonga District Hospital Balaka District Hospital and Dedza District Hospital. It is likely that most of these patients were misclassified. All of the remaining stocks of regimen 1A will expire before the end of 2016.

Adherence to ART

Facilities are doing very well checking and documenting patient adherence. The evidence points to very high adherence rate among patients. **650,077 (99%)** of all patients retained in care had documented the number of missed doses at each visit and **584,770 (90%)** of patients were classified as >95% adherent.

ART Side Effects

ART side effects seem to be infrequent with the majority of the patients being on regimen 5A (tenofovir / lamivudine / efavirenz). Of the **637,684 (97%)** patients with information on drug side effects, only **3,167 (1%)** had documented side effects.

15.5 Viral Load (VL) Monitoring

Since the National Treatment Program started rolling out routine VL monitoring for patients on ART in 2012, there has been a steady increase in uptake as bottlenecks in implementation are being addressed. Over the past quarter, several activities were implemented that resulted in a **32% increase (from 63,034 in Q2 to 83,137 in Q3)** in number of VL results produced. With PEPFAR funding, URC supported MOH in training for additional lab technicians on VL/EID testing. Additional VL/EID platforms were procured for Zomba, Nsanje and KCH; a late shift was introduced to improve the utilization of existing machine capacity; samples were relocated from labs with a backlog to labs with spare capacity; monthly lab manager meetings where conducted to share best practices. We anticipate that the impact of many of these efforts will continue to accrue over the next quarters.

With the addition of 3 new EID/VL platforms and the setting up of a molecular lab at Nsanje, the country now has a total of **13** platforms in **10** molecular labs. All labs used the MOH lab information management system (LIMS) for registration of samples and storage of results. The following results are based on an analysis of exported LIMS data.

83,137 VL results were dispatched to **613** sites between July and September 2016. Half of these sites received fewer than **90** results and one quarter of sites received **225** or more.

6,681 (8%) of 83,137 samples processed were plasma and **70,802 (85%)** were DBS. For 5,654 results, the specimen type was not specified.

Lab	Samples Processed				Turn-around Time (Days)§
	Plasma	DBS	Oth/unk	Total	
DREAM Blantyre	1,662	2,629	8	**4,299**	**25**
DREAM Balaka	908	5,349	31	**6,288**	**46**
Kamuzu CH	3,421	9,410	2	**12,833**	**20**
Mzimba DH	0	3,750	22	**3,772**	**22**
Mzuzu CH	0	146	5,515	**5,661**	**35**
Partners in Hope	689	10,395	3	**11,087**	**39**
QUECH	0	11,275	1	**11,276**	**64**
Thyolo DH	1	5,112	5	**5,118**	**121**
Zomba CH	0	22,736	67	**22,803**	**64**
Total	**6,681**	**70,802**	**5,654**	**83,137**	**45**

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

Zomba CH, Kamuzu CH, QUECH and Partners in Hope labs processed 70% of all the VL samples. The median interval between sample collection and printing of results was **45 days** at the national level, ranging from **20 days** at Kamuzu CH to **121 days** at Thyolo DH. The most significant delays occurred between sample draw and sample receipt in the lab (median 16 days), while on average only 13 days elapsed between sample receipt and processing in the lab. There is still room for more capacity development at the labs to deal with the rapidly growing number of samples.

Reason	0-999		1000+		*Total*
Routine	**73,445**	*89%*	**9,212**	*11%*	**82,657**
Targeted	**216**	*82%*	**49**	*18%*	**265**
Other/unk	**161**	*75%*	**54**	*25%*	**215**
Total	**73,822**	*89%*	**9,315**	*11%*	**83,137**

Almost all the VL samples processed during the quarter **82,657 (99%)**, were classified as *routine scheduled.* This is **10%** higher than the estimated 75,000 ART patients passing a VL monitoring milestone this quarter, suggesting that the VL monitoring program is still catching up with patients who have never been tested. **265 (<1%)** of samples were classified as *targeted (suspected treatment failure / repeat)* and for **215 (<1%)** the reason for the sample was 'other' or not specified. **89% (73,822)** of patients with viral load results during the quarter under report achieved viral suppression (ie. <1,000 copies/ml). This represents a good quality outcome of the program.

Viral suppression rates were significantly lower among children (0-9 yrs: **59%**) and adolescents (10-19 yrs: **66%**) compared with adults in the age groups 20-29, 30-39, 40+ years who had viral suppression rates of **87%**, **88%** and **91%** respectively. 92% of routine VL samples were from adults 20+ years while the rest was among the age group <20 years, with 5% among 0-9 years and 4% among 10-19 years. The proportion of adults 20+ years has increased by 2% compared to previous quarter. Patient age was not recorded for 12,072 (14%) samples.

The increase of 547 patients new on 2nd line ART this quarter represents only 5% of 10,892 patients with a VL result of ≥1000 copies/ml. The majority of patients with an initial high VL are likely to re-suppress after intensified adherence counselling and the confirmation of treatment failure usually depends on a second VL result of ≥1000 after 3 months. However, this low ratio of new patients on 2nd line compared with the number of high VL results is likely due to long turnaround times for results and weak clinical follow-up management at the sites. A set of new VL registers has been designed to facilitate tracking of samples and results and to formalize follow-up action on high VL results. These new tools will be implemented in Q4 2016.

The time on ART was entered for only **13,643 (17%)** of 82,657 routine samples registered on the LIMS and only **3,482 (26%)** of these were drawn on schedule (from 1 month before to 3 months after a VL milestone). The proportion of patients with VL < 1000 was **91%, 89%, 89%, 87%, 89%** and **87%** at 6, 24, 48, 72, 96 and 120 months on ART respectively. Viral suppression rates of samples drawn on schedule were similar to those of 'catch-up' (extra-schedular) samples (**87 %**) or those with unknown timing (**87 %**).

15.6 TB / HIV Management

Approximately **96%** of HIV infected TB patients were receiving ART in Q3 2016. This estimate is based on the following triangulation of TB and ART program data:

TB Program Data: A total of **4,613** TB patients were registered during Q3 2016. Assuming an average HIV prevalence of 60% among TB patients, **2,768** TB patients were HIV positive and therefore in need of ART. Given that **1,953** TB patients registered were already on ART at the time of starting TB treatment, 2,768 – 1,953 = **815** TB patients needed to initiate ART.

ART Program Data: An estimated **644** patients[19] started ART with a current or recent episode of TB in Q3 2016. This is **44%** (644 of 815) of the TB patients who needed to start ART. This means that a total of 1,953 + 644 = **2,597 (94%)** of the estimated 2,768 HIV infected TB patients were receiving ART in Q3 2016.

[19] 17% of the 780 ART patients who were registered this quarter with a recent or current episode of TB at the time of ART initiation were assumed to be transfers and were subtracted to adjust for double-counting.

TB clinic registrations

Total TB patients registered	4,613	100%

HIV status ascertainment

HIV status not ascertained	81	2%
HIV status ascertained	4,532	98%
HIV negative	2,232	49%
HIV positive	2,300	51%
Already on ART	1,953	85%
Not on ART when starting TB treatment	347	15%

TB / ART program triangulation *

HIV-burden among TB patients (estimated)

HIV negative (est. 40%)	1,845	40%
HIV positive (est. 60%) in need of ART	2,768	60%
Not on ART	181	7%
Total on ART (coverage)	2,587	93%
Already on ART (TB prog)	1,953	75%
Started ART within 24m of TB diagnosis (ART prog)	634	25%
ART initiations with current TB (ART prog)	332	52%
ART initiations after recent TB (ART prog)	302	48%

16 STI Treatment

STI reports were actively collected during the Integrated HIV Program Supervision exercise for the 12th time this quarter. This decision was taken due to the persistent challenges with 'passive' reporting based on data aggregated by the district STI coordinators. This quarter, supervision teams collected STI data from 680 out of 928 facilities offering STI management according to the *2013-14 Service Provision Assessment*[20] in Malawi. The site-level reports included here may therefore only represent 73% of all STI services in Malawi. The supervision teams re-emphasized the importance of complete and accurate documentation at the sites and the data quality is expected to improve with resumption of regular site supervision for the STI program. The complete set of STI program data collected is included in the Appendix.

16.1 Access to STI treatment and coverage

Based on the data collected at the facilities, a total of **68,939** STI cases were treated in Q3 2016. Considering the 73% site-level completeness of reporting, this number is estimated to represent a total of **94,437** STI cases treated. This is equivalent to **96% STI treatment coverage** of the expected 98,600 STI cases in the population.

Out of **68,939** documented clients treated, **28,269** (41%) were male and **40,670** (59%) were female. **5,110** (13%) of female STI clients were pregnant. **46,861** (68%) clients were 25 years and above, **16,359** (24%) were 20-24 years and **5,719** (8%) were under 20 years old.

[20] 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

16.2 Client Type and STI History

61,059 (89%) of clients were symptomatic and **7,888** (11%) were asymptomatic (treated as partners). Among symptomatic clients, **55,365** (91%) of were index cases and **5,686** (9%) were partners. A total of **17,362** partner notification slips were issued, equivalent to an average of 0.31 slips per index case. Considering the 17,362 partner notification slips issued, **78%** (13,574) of those notified presented to the clinic. **51,191** (74%) of clients presented with their first lifetime episode of STI, **12,603** (71%) clients reported to have had an STI more than 3 months ago and **5,145** (29%) 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.

16.3 HIV Status

HIV status was ascertained for **51,416** (75%) clients and **11,076** (22%) of these were HIV positive. **2,844** (26%) of positives were identified through a new test initiated at the STI clinic, while **8,232** (74%) presented with a documented previous positive HIV test result. **7,142** (87%) of clients with a previous positive HIV test result were on ART.

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

16.4 STI Syndromes and Referrals

The most common syndrome was abnormal vaginal discharge (AVD) with **21,743** (29%) cases, followed by urethral discharge (UD, **18,602** cases), genital ulcers (GUD, **11,433** cases) and lower abdominal pain (LAP, **10,948** cases). Balanitis, bubo, scrotal swelling and warts each accounted for 1% of cases.

Given the high risk of recent HIV infection among STI clients, all clients with unknown status and those with a new negative test result should be referred for (repeat) HIV testing and counselling. **22,155 (38%)** of the 57,863 STI clients with unknown or new negative test result were referred for repeat HTC. **2,363 (83%)** of 2,844 clients who were newly tested HIV positive were referred for ART eligibility assessment.

17 Supply chain management of HIV Program Commodities Q3 2016

17.1 Quantification and procurement planning

The program conducted a review of the orders in the pipeline and provided feedback to the respective procurement agencies (Partnership for Supply Chain Management and IDA

Foundation). All HIV commodities expected during this period were delivered in line with the program supply plan (Refer to Table 6 for warehouse stock positions).

During Q3 2016, ARVs, medicines for opportunistic infections, anti-malarials and laboratory health products were received by the Bollore Africa Logistics managed warehouses dedicated for Department of HIV and National Malaria Control Program commodities. The program has expanded the storage area to **over 10,000 cubic meters** of space in light of the Test and Treat policy as per April 2016 guidelines. To maintain adequate stocks in the pipeline and hence ensure uninterrupted supply for subsequent orders, the Ministry has continued processing HIV commodity orders for ARVs, OI, RDTs and other related commodities through Partnership for Supply Chain Management (ARVs and RDTs) and IDA Foundation (laboratory commodities and medicines for opportunistic infections). The Ministry of Health has processed quotations for HIV commodity orders valued at **USD 95million**. This will enable the program continue implementing the various interventions aimed at contributing towards the 90-90-90 targets.

17.2 Quarterly supply chain support during Quarter 3 ART/PMTCT supervision

District and central level Supply Chain and Logistics Officers provided stock management support at over 232 sites during the Q3 2016 integrated ART/PMTCT 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 an overall improvement in the logistics management of ARVs and medicines for OI medicines. Some health facilities visited still had storage constraints hence providers had to conduct physical inventory at multiple locations. Health care providers have continued to use RDT daily activity registers and relocation books for registration of redistributed commodities to health facilities. However at selected health facilities, it was noted that RDT daily activity registers are not updated real time.

17.3 Stock Status of HIV Commodities by end Q3 2016

Physical stock counts for ARVs and other medicines for HIV-related diseases were performed at all sites during the supervision visits in October 2016. **Table 6** shows the total medicine stocks found at the sites and the estimated consumption patterns.

575,825 patients were on regimen 5A, which was 7,690 (1%) higher than projected for the end of this quarter **(568,135).**

17.4 Availability of standard first line ARVs

575,825 of all ART patients were on the standard first line regimen (5A; tenofovir / lamivudine / efavirenz). This is equivalent to 87% of patients overall and 93% of patients on first line adult regimens. By October 2016, the total stock of this regimen was equivalent to 5.0 and 2.9 months of consumption at the warehouse and site-level, respectively. The physical stock count carried out during supportive supervision in October 2016 confirmed that 734 (99.6%) of all 736 ART sites with patients on this regimen had available stocks. This translates into a 'stock-out' rate of only 0.2% of sites. Such stock-out events are managed through ad-hoc stock relocation between the affected facility and hub site. This is coordinated through the toll-free supply hotline. This healthy supply chain has enabled the program to consistently implement three monthly medicines dispensations for patients.

17.5 Bimonthly distribution of HIV & Malaria Commodities

One scheduled bimonthly distribution of HIV & Malaria commodities including laboratory items (Distribution Round 30) took place in August 2016.

Logistics monitoring and supply chain trail of HIV commodities for distribution round 29 was conducted at 30 selected health facilities in 13 districts. No discrepancies were noted on the signed delivery notes. Documentation of test kit consumption in the Daily Activity Registers (DAR) is still a challenge which affects test kits allocations at some HTS sites. The supply chain team provided mentorship and on job training in stock management and logistics tools documentation including DAR at 60% of the health facilities visited.

During Q3 2016, the logistics team at the Department of HIV and AIDS also coordinated a total of over 1550 individual commodity transactions between 461 ART sites to mitigate stock imbalances. The transactions are all 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 6: Total stocks of HIV program commodities at all sites visited during the 2016 Q3 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 05/10/2016

Inventory unit	Item	Sites with any Stock	Total Physical Stock		Consump-tion/ Month	Months of Stock *	
			At Sites	In Warehouse		At Sites	Wareh.
tins	ABC / 3TC 60 / 30mg tins (60 tabs)	**226**	**16,057**	**64,584**	6,054	2.7	10.7
	ABC / 3TC 600 / 300mg tins (30 tabs)	**156**	**3,273**	**26,217**	1,322	2.5	19.8
	ATV / r 300 / 100mg tins (30 tabs)	**302**	**12,335**	**111,904**	8,030	1.5	13.9
	AZT / 3TC / NVP 300 / 150 / 200mg tins (60 tabs)	**622**	**41,157**	**62,275**	31,616	1.3	2.0
	AZT / 3TC / NVP 60 / 30 / 50mg tins (60 tabs)	**670**	**438,444**	**456,012**	66,690	6.6	6.8
	AZT / 3TC 300 / 150mg tins (60 tabs)	**519**	**10,571**	**48,281**	4,554	2.3	10.6
	AZT / 3TC 60 / 30mg tins (60 tabs)	**605**	**18,734**	**4,513**	3,395	5.5	1.3
	d4T / 3TC / NVP 30 / 150 / 200mg tins (60 tabs)	**23**	**3,093**		729	4.2	
	d4T / 3TC 30 / 150mg tins (60 tabs)	**187**	**9,942**		66	150.6	
	EFV 200mg tins (90 tabs)	**191**	**2,239**	**3,850**	357	6.3	10.8
	EFV 600mg tins (30 tabs)	**141**	**1,429**	**1,441**	841	1.7	1.7
	LPV / r 100 / 25mg tins (60 tabs)	**127**	**4,313**	**60,140**	3,984	1.1	15.1
	LPV / r 200 / 50mg tins (120 tabs)	**73**	**1,645**	**4,788**	503	3.3	9.5
	NVP 200mg tins (60 tabs)	**522**	**12,823**	**64,803**	10,595	1.2	6.1
	NVP 50mg tins (60 tabs)	**159**	**5,932**	**12,242**	1,725	3.4	7.1
	TDF / 3TC / EFV 300 / 300 / 600mg tins (30 tabs)	**734**	**1,689,871**	**2,864,306**	575,825	2.9	5.0
	TDF / 3TC 300 / 300mg tins (30 tabs)	**647**	**22,127**	**75,275**	16,402	1.3	4.6
bottles	Fluconazole (Diflucan) 50mg / 5ml bottles (35 ml)	**5**	**2,579**		120	21.4	
	NVP 10mg/ml bottles (100 ml)	**579**	**63,833**	**75,584**	6,958	9.2	10.9
vials	Benzathine Penicillin 1.44g vials (50 each)	**634**	**274,523**	**91,150**	45,777	6.0	2.0
	Bleomycine 15,000IU vials (1 each)	**14**	**3,981**	**20,000**			
	Ceftriaxone 1g vials (50 each)	**516**	**307,570**		123,560	2.5	
	Depo-Provera 150mg/1ml vials (25 each)	**584**	**962,057**		422,859	2.3	
	Gentamicin 80mg / 2ml vials (50 each)	**681**	**1,013,663**		116,275	8.7	
	Streptomycin 1 gm vials (50 each)	**68**	**36,502**				
	Vincristine 1mg / 1ml vials (1 each)	**23**	**3,118**	**16,563**	2,496	1.2	6.6
tabs	Aciclovir 200mg blist packs (500 tabs)	**213**	**746,213**		744,818	1.0	
	Azithromycin 500mg blist packs (3 tabs)	**442**	**98,574**		12,292	8.0	
	Ciprofloxacin 500mg blist packs (100 tabs)	**348**	**481,352**	**2,329,900**	352,310	1.4	6.6
	Clotrimazole 500mg boxes (1 each)	**389**	**54,070**	**3,664**	45,286	1.2	0.1
	Codeine 30mg tins (100 tabs)	**552**	**375,280**	**525,000**	58,309	6.4	9.0
	Cotrimoxazole 100 / 20mg blist packs (1000 tabs)	**652**	**27,886,469**	**66,798,000**	9,108,863	3.1	7.3
	Cotrimoxazole 400 / 80mg tins (1000 tabs)	**708**	**60,880,539**	**11,666,000**	19,532,716	3.1	0.6
	Cotrimoxazole 960mg blist packs (1000 tabs)	**728**	**68,464,020**	**161,427,000**	19,610,564	3.5	8.2
	Doxycycline 100mg tins (1000 tabs)	**537**	**4,691,503**	**4,803,000**	5,220,148	0.9	0.9
	Erythromycin 250mg tins (1000 tabs)	**301**	**2,715,631**		4,669,951	0.6	
	Fluconazole (Diflucan) 200mg tins (28 tabs)	**205**	**562,797**	**215,880**	74,872	7.5	2.9
	Ibuprofen 200mg tins (100 tabs)	**287**	**3,789,307**		998,446	3.8	
	Isoniazid (H) 100mg blist packs (100 tabs)	**139**	**614,346**		32,241	19.1	
	Isoniazid (H) 300mg blist packs (672 tabs)	**29**	**508,804**	**4,800,096**	235,762	2.2	20.4
	Isoniazid (H) 300mg tins (1000 tabs)	**600**	**17,373,168**		235,975	73.6	
	Metronidazole 200mg tins (1000 tabs)	**647**	**19,208,833**	**20,765,000**	5,670,775	3.4	3.7
	Microgynon 0.03mg/0.15mg blist packs (84 tabs)	**481**	**7,023,853**				
	Morphine 10mg blist packs (60 tabs)	**40**	**262,684**	**453,180**	254,440	1.0	1.8
sheets	ART pat. card adult (yellow) Ver5 bundles (100 sh	**689**	**410,221**	**149,000**	15,634	26.2	9.5
	ART pat. card paed. (blue) Ver5 bundles (100 she	**652**	**94,922**	**25,300**	1,504	63.1	16.8
	Exposed child card (pink) Ver1 bundles (50 sheet	**486**	**49,051**		3,787	13.0	
	Family HTC Referral Slip bundles (100 sheets)	**244**	**41,888**				
	Polythene sleeve bundles (100 sheets)	**303**	**38,609**		21,531	1.8	
	Pre-ART pat. card (green) Ver1 bundles (100 she	**376**	**83,409**		606	137.6	
	STI Partner Referral Slip bundles (100 sheets)	**240**	**74,190**				
tests	DBS kit (filter paper, lancet, etc.) boxes (50 each)	**663**	**182,570**	**387,450**	37,454	4.9	10.3
	Determine HIV1/2 boxes (100 each)	**607**	**550,868**	**1,677,800**	275,964	2.0	6.1
	Determine syphilis boxes (100 each)	**551**	**389,033**	**345,100**	50,596	7.7	6.8
	Uni-Gold HIV1/2 boxes (20 each)	**650**	**139,968**	**96,560**	35,320	4.0	2.7
pieces	Condoms female boxes (1000 each)	**322**	**606,076**		218,649	2.8	
	Condoms male boxes (144 each)	**642**	**25,143,289**	**35,218,800**	7,534,410	3.3	4.7
	Etonorgestrel (Implanon NXT) 68mg boxes (1 eac	**299**	**20,546**				
	Etonorgestrel (Implanon) 68mg boxes (1 each)	**201**	**11,957**				
	Intrauterine device (Copper T) boxes (1 each)	**132**	**10,055**				
	Levonorgestrel (Jadelle) 2 x 75mg boxes (20 eac	**445**	**59,834**				

* '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.

18 Training and Mentoring

18.1 HIV Testing Services

35 participated in the Malawi comprehensive HIV testing and counselling training. **30 (86%)** of the 35 passed the certification exam.

18.2 Early Infant Diagnosis

220 providers participated EID pre-mentorship training. The providers consisted of HDAs, EID focal persons, nurses and ART clerks. One of the main challenges in the EID program is documentation in the exposed infant patient card. The training therefore had an emphasis on documentation.

PMTCT zonal review meeting were conducted in **3** zones of north, central west and central east zones. **116** participants attended the two day review meetings. The main highlight was that, districts with support from implementing partners reduced the turnaround time of EID results.

18.3 ART/PMTCT

613 were trained in initial ART training according to the new 2016 national guidelines. **158** of these were clinicians, **155** nurses, **213** data clerks and **87** are tutors based in training colleges.

19 Participants in Q3 2016 Supervision (Site visits 10-21 Oct. 2016)

Absalom Kaunda (CO, MOH, Mzimba DHO)
Alefa Fikira (CMT, MOH)
Alice Mdolo (, MOH)
Amosi Mahangula (, DI)
Andraida Mtoseni (Nurse, MOH)
Andrew Gompho (Clinician, MOH)
Anne Kantepa (, Baylor)
Annie Biza (Nurse, MDF)
Austins Namondwe (CO, CHAM)
Bannet Kalebe (Logistics, MOH)
Batoni Upindi (TB Zonal Supervisor, MOH)
Beatrice Malonje (Nurse, MOH)
Benard Kasinja (CO, I-TECH)
Bernedette Samala (, Lighthouse)
Brown Chiwandira (MA, MOH)
Catherine Kassam (, MOH)
Cecilia Manyawa (Nurse, MOH)
Cecilia Mphika (, MOH)
Charles F Sekani (CO, .)
Chifundo Makuluni (Nurse, MOH)
Chikayiko Majamanda (Nurse, MOH)
Chikumbutso Pendame (MA, MOH)
Chimwemwe Francis Mkandawire (IT Fellow, I-TECH)
Chimwemwe Mlenga (, MOH)
Chisomo Ngwalo (, COM)
Chiyambi Sande (, TB)
Chrissy Lizengo (, MOH)
Christopher Mkwezalamba (CO, MOH)
Cornelias Kang`ombe (, NTP)
Crust Mwagomba (CO, MOH)
Dalitso Midiani (PMTCT Officer, MOH)
Damison Msiska (CO, Dwangwa)
Davie Maseko (CO, SOS)
Davie Nkosi (, MOH)
Dennis Kacheche (, I-TECH)
Diana Chipande (, MOH)
Donald Nkhalango (, PIH)
Dorica Sambo (Nurse, MOH)
Edith Thaulo (Nurse, MOH)
Egnatius Mtambalika (, DTO)
Elesi Chimango (Nurse, MOH)
Elizabeth Chatsika (CO, CHAM)
Elizabeth Makwakwa (Nurse, MOH)
Elsie Kasambwe (, I-TECH)
Elton Masina (CO, EGPAF)
Envance Njaidi (MA, MOH)
Ephraim Chale (, MoH)
Erik Mittochi (CO (ART coord), MOH)
Erton Mtande (, MoH)
Ethel Kaluluma (Nurse, MOH)
Evans Kagwira (TB Zonal Supervisor, MOH)
Everista Mkandawire (Nurse, MOH)
Ezra Majoni (Nurse, MOH)
Fainala Muyila (Nurse, MOH)
Fatsireni Mapulanga (, MOH)
Fred Chagoma (, MoH)
Geoffrey Makhalira (, NTP)
Gladson Waluza (, MOH)
Grace Chipanga (Nurse, Private)
Grant Gondwe (, NTP)
Grey Malata (, MOH)
Hannock Matupi (ARV clinician, MOH, Rumphi DH)
Harry Tsapa (CO, MOH)
Henry Banda (CO, MOH)
Henry Kanyerere (TB/HIV Program Officer, MOH)
Innocent Kafakalawa (, EGPAF)
Innocent Mainjeni (Logistics, MOH)
Ireen Magongwa (, MSH)
James Mataya (MA, CHAM)
Janet Chikonda (Nurse, MOH)
Jean Kayamba (Nurse, MOH)
Jeremia Mwale (CO, EGPAF)
Jesse Lobeni (Nurse, MOH)
Jimmy Mmela (Logistics, MOH)
John Kabichi (CO, MOH)
John Mutai (CO, CHAM)
Jotham Nyasulu (, MOH)
Judith Ntopa (Nurse, Cobbe Barracks)
Juliana Soko (ARV nurse, MOH, Livingstonia MH)
Kingsley Makwale (MA, MOH)
Kingsley Mbewa (CO, MOH)
Knox Banda (TB Zonal Supervisor, MOH)
Kondwani Chikoti (CO, MOH)
Kuzani Mbendera (, NTP)
Lameck Mlauzi (, NTP(MOH))
Lameck Mzava (, NTP)
Laston Masamba (, Partners in Hope)
Leonard Banda (, MoH)
Leornad Kadongola (, JHPIEGO)
Lilian Kachali (Nurse, MOH)
Limbani Mbetewa (, DTO)
Lincy Chalunda (CO, MOH)
Lioyd Wella (CO, MOH)
Little Banda (, MOH)
Lizzie Kachale (, MoH)
Macleod Piringu (ART CORDINATOR, MOH)
Magret Chigona (CO, MOH)
Margaret Chigona (CO, Blantyre DHO)
Margaret Katumbi (Nurse, MOH)
Mark Suzumire (CO, MOH)
Marko Mwanda (, MOH)
Martin Katanga (CO, MOH)
Martin Maulidi (CO, I-TECH)
Mary Gosten (MA, MOH)
Mary Jerenje (, MoH)
Mary Kamiza (TB Zonal Supervisor, NTP)
Mary Kaponya (, MOH)
Mathilda Kamanga (Nurse, Army)
Matthews Kadewa (, I-TECH)
Maxon Musama (CO, PVT)
Maxwell Mvona (, MoH)
Menard Bvumbwe (CO, CHAM)
Mera Kayira (CO, MOH)
Mercy Makaika (Nurse, MOH)
Merthwin Chiwaya (, MOH)
Mike Nyirenda (CO, Lighthouse)
Miliayasi Misoya (CO, MOH)
Mirriam Chigwiya (CO, MOH)
Mirriam Malijani (, MoH)
Monica Simfukwe (Nurse, MOH, Chintheche RH)
Moses Tambala (Nusre, Baylor)
Mphatso Magwaya (, JHPIEGO)
Naomi Tanganyika (, PIH)
Noel Mphasa (TB Zonal Supervisor, NTP)
Nyembezi Chibonga (, NTP)
Offrey Mnduwira (CO, Police)
Oscar Kasiyamphanje (Nurse, CHAM)
Overtone Ndhlovu (CO, MOH)
Owen Manda (Nurse, Public)
Patrick Ngwira (, NTP)
Patrick Paul J M Chirwa (TB Zonal Supervisor, NTP)
Patrick Steven (, EGPAF)
Paul Nyasulu (CO, I-TECH)
Pax Mkupani (Logistics Fellow, MOH)
Pepsy Nangwale (Nurse, MOH)
Peter Chimphero (CO, MOH)
Peter Donda (CO, Dedza DH)
Regina Longwe (, MOH)
Rellia Nkhata (, MOH)
Rhoda Ching'ani (Community Nurse, Lighthouse)
Richard Abuduo (CO, MOH)
Rodney Gonani (CO, CHAM)
Rodrick Kaulere (CO, CHAM (Sister Tereza))
Rose Kalola (, MoH)
Rose Maviko (Nurse, Limbe HC)
Ruockia Mwachumu (Nurse, MOH Nsanje DHO)
Ruth Deula (Nurse, CHAM)
Sabina Phiri (Nurse, MOH)
Salimu Phiri (, DI)
Salome Chiwewe (Nurse, MOH, Ntchisi DH)
Sidder Hambisa (ENM, MOH)
Simon Makombe (ART officer, MOH, Department of HIV and AIDS)
Stanford Miyango (Pharmasist, MOH)
Stanley Ngoma (CO, MOH)
Stanley Phombo (Nurse, MOH)
Steven Nyika (, MOH)
Stone Mbiliyawanda (, MOH)
Stuart Chuka (CO, MBCA)
Symon Chiumia (, MOH)
Taona Selemani (, NTP)
Vera Kajawa (Nurse, MOH)
Virginia Mwafulirwa (, Partners in Hope)
Washingtone Ozitiosauka (CO, MOH)
Wells Banda (CO, MOH)
Weston Njamwaha (Clinician, PIH)
Wezzie Luhanga (, MOH)
William Kamiyango (clinician, moh)
William Mtonga (CO, CHAM)
Yamikani Mataka (, DI)
Yunus Chiosa (, NTP)

Report compiled by the Department of HIV and AIDS:
Rose Nyirenda (Director)
Thoko Kalua (Deputy Director)
Simon Makombe (ART Officer)
Eustice Mhango (ART Officer)
Washington Ozitosauka (ART Officer)
Michael Eliya (PMTCT Officer)
Dalitso Midiani (PMTCT Officer)
Andreas Jahn (Technical Assistant)
Caroline Ntale (Technical Assistant)
Dorica Chirwa (Logistics Officer)
Andrew Mganga (M&E Officer)
Paul Nyasulu (PMTCT/ART Officer)
Joseph Kasola (HTS Officer)
Khumbo Ngona (HTS Officer)
Stone Mbiriyawanda (M&E Officer)
Chimwemwe Mkandawire (IT Officer)

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.

9 December 2016

20 Appendix (Full National HIV Program Data)

HTC site report

Malawi (national)

2016 Q3 (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		**847,041**	**100%**
Sex			
Males tested		**309,397**	**37%**
Females tested		**537,644**	**63%**
	Females non-pregnant	**344,367**	64%
	Females pregnant	**193,277**	36%
Age			
Children 0-14 yrs		**114,859**	**14%**
	Children below 12 mths (Age group A)	**4,179**	4%
	Children 12 mths - 14 yrs (Age group B)	**110,680**	96%
Adults 15+ years		**732,182**	**86%**
	Young adults 15-24 years (Age group C)	**317,466**	43%
	Older adults 25+ yrs (Age group D)	**414,716**	57%
HTC access type			
PITC		**569,434**	**67%**
Family Referral Slip (FRS)		**6,155**	**1%**
Other (VCT, etc.) HTC access		**271,452**	**32%**
HTC first time / repeat			
Never tested before		**243,675**	**29%**
Previously accessed HTC		**603,366**	**71%**
	Last negative	**561,188**	93%
	Last positive	**39,517**	7%
	Last exposed infant	**1,528**	0%
	Last inconclusive	**1,133**	0%
Counseling session type / Partner present			
Counseled with partner / partner present		**184,737**	**22%**
Counseled alone / Partner not present		**662,304**	**78%**
Outcome summary (HIV test)			
Single test negative		**768,577**	**91%**
Single test positive		**142**	**0%**
Test 1&2 negative		**859**	**0%**
Test 1&2 positive		**75,159**	**9%**
Test 1&2 discordant		**2,304**	**0%**
Final result given to client			
Results among clients never tested / last negative		**807,171**	**95%**
	New negative	**769,090**	95%
	New positive	**35,385**	4%
	New exposed infants	**630**	0%
	New inconclusive	**2,066**	0%
Confirmatory results (previous positive clients)		**39,870**	**5%**
	Confirmatory positive	**39,081**	98%
	Confirmatory inconclusive	**789**	2%

* Subgroups may not add to 100% due to rounding

HTC site report

Malawi (national)

2016 Q3 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

HTC client details

*

Partner / Family HTC referral slips

Sum of slips given		**41,565**	**100%**
	Total clients presenting with referral slip	**6,155**	15%
	Total failed referrals (slips not returned)	**35,410**	85%

Clients tested in the community

HTC client details

*

Total HTC clients served

Total HIV tested		**14,510**	**100%**

Sex

Males tested		**6,762**	**47%**
Females tested		**7,748**	**53%**
	Females non-pregnant	**5,555**	72%
	Females pregnant	**2,193**	28%

Age

Children 0-14 yrs		**3,573**	**25%**
	Children below 12 mths (Age group A)	**20**	1%
	Children 12 mths - 14 yrs (Age group B)	**3,553**	99%
Adults 15+ years		**10,937**	**75%**
	Young adults 15-24 years (Age group C)	**5,575**	51%
	Older adults 25+ yrs (Age group D)	**5,362**	49%

HTC access type

PITC		**6,892**	**47%**
Family Referral Slip (FRS)		**51**	**0%**
Other (VCT, etc.) HTC access		**7,567**	**52%**

HTC first time / repeat

Never tested before		**6,898**	**48%**
Previously accessed HTC		**7,612**	**52%**
	Last negative	**7,431**	98%
	Last positive	**180**	2%
	Last exposed infant	**1**	0%
	Last inconclusive	**0**	0%

Counseling session type / Partner present

Counseled with partner / partner present		**1,143**	**8%**
Counseled alone / Partner not present		**13,367**	**92%**

Outcome summary (HIV test)

Single test negative		**14,004**	**97%**
Single test positive		**0**	**0%**
Test 1&2 negative		**2**	**0%**
Test 1&2 positive		**490**	**3%**
Test 1&2 discordant		**14**	**0%**

HTC site report

Malawi (national)

2016 Q3 (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		**14,333**	**99%**
	New negative	**14,006**	98%
	New positive	**314**	2%
	New exposed infants	**1**	0%
	New inconclusive	**12**	0%
Confirmatory results (previous positive clients)		**177**	**1%**
	Confirmatory positive	**173**	98%
	Confirmatory inconclusive	**4**	2%

Partner / Family HTC referral slips

Sum of slips given		**1,068**	**100%**
	Total clients presenting with referral slip	**51**	5%
	Total failed referrals (slips not returned)	**1,017**	95%

Clients at stand-alone HTC sites

HTC client details

*

Total HTC clients served

Total HIV tested		**10,842**	**100%**

Sex

Males tested		**5,360**	**49%**
Females tested		**5,482**	**51%**
	Females non-pregnant	**4,593**	84%
	Females pregnant	**889**	16%

Age

Children 0-14 yrs		**520**	**5%**
	Children below 12 mths (Age group A)	**5**	1%
	Children 12 mths - 14 yrs (Age group B)	**515**	99%
Adults 15+ years		**10,322**	**95%**
	Young adults 15-24 years (Age group C)	**3,024**	29%
	Older adults 25+ yrs (Age group D)	**7,298**	71%

HTC access type

PITC		**5,798**	**53%**
Family Referral Slip (FRS)		**36**	**0%**
Other (VCT, etc.) HTC access		**5,008**	**46%**

HTC first time / repeat

Never tested before		**2,357**	**22%**
Previously accessed HTC		**8,485**	**78%**
	Last negative	**7,785**	92%
	Last positive	**687**	8%
	Last exposed infant	**1**	0%
	Last inconclusive	**12**	0%

Counseling session type / Partner present

Counseled with partner / partner present		**1,448**	**13%**
Counseled alone / Partner not present		**9,394**	**87%**

HTC site report

Malawi (national)

2016 Q3 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

HTC client details

*

Outcome summary (HIV test)

Single test negative	**9,542**	**88%**
Single test positive	**1**	**0%**
Test 1&2 negative	**7**	**0%**
Test 1&2 positive	**1,239**	**11%**
Test 1&2 discordant	**53**	**0%**

Final result given to client

Results among clients never tested / last negative		**10,231**	**94%**
	New negative	**9,562**	93%
	New positive	**554**	5%
	New exposed infants	**0**	0%
	New inconclusive	**115**	1%
Confirmatory results (previous positive clients)		**611**	**6%**
	Confirmatory positive	**606**	99%
	Confirmatory inconclusive	**5**	1%

Partner / Family HTC referral slips

Sum of slips given		**498**	**100%**
	Total clients presenting with referral slip	**36**	7%
	Total failed referrals (slips not returned)	**462**	93%

* Subgroups may not add to 100% due to rounding

HIV Care Clinic (HCC) cohort analysis

Malawi (national)

2016 Q3 (Quarter)

Registration details

*

HCC clinic registrations

Total HCC registrations	**13,180**	**100%**

Registration type

Patients enrolled first time	**12,110**	**92%**
Patients re-enrolled	**31**	**0%**
Patients transferred in	**1,039**	**8%**

Sex

Males (all ages)	**6,384**	**48%**
Females (all ages)	**6,796**	**52%**
Non-pregnant	**6,773**	100%
Pregnant	**23**	0%

Age at registration

Adults 15+ yrs	**1,677**	**13%**
Children 0-14 yrs	**11,503**	**87%**
Children 24 months - 14 years	**180**	2%
Children below 24 months (exposed children)	**11,323**	98%
Children 2 - below 24 months	**3,258**	29%
Infants below 2 months	**8,065**	71%

Reason for HCC registration

Exposed infants	**11,362**	**86%**
Confirmed infected patients (pre-ART)	**1,818**	**14%**

* Subgroups may not add to 100% due to rounding

HIV Care Clinic (HCC) cohort analysis

Malawi (national)

2016 Q3 (Cumulative)

Registration details

*

HCC clinic registrations

Total HCC registrations	**439,103**	**100%**

Registration type

Patients enrolled first time	**421,443**	**96%**
Patients re-enrolled	**1,342**	**0%**
Patients transferred in	**16,318**	**4%**

Sex

Males (all ages)	**193,921**	**44%**
Females (all ages)	**245,182**	**56%**
Non-pregnant	**244,245**	100%
Pregnant	**937**	0%

Age at registration

Adults 15+ yrs	**203,516**	**46%**
Children 0-14 yrs	**235,587**	**54%**
Children 24 months - 14 years	**18,557**	8%
Children below 24 months (exposed children)	**217,030**	92%
Children 2 - below 24 months	**94,171**	43%
Infants below 2 months	**122,859**	57%

Reason for HCC registration

Exposed infants	**212,692**	**48%**
Confirmed infected patients (pre-ART)	**226,411**	**52%**

Pre-ART follow-up outcome

*

Primary follow-up outcomes

Total retained in pre-ART	**8,838**	**4%**
Started ART	**145,104**	**69%**
Defaulted	**55,237**	**26%**
Died	**2,006**	**1%**

Transfers between sites

Total not transferred out	**215,706**	**95%**
Transferred out	**10,705**	**5%**

* Subgroups may not add to 100% due to rounding

HIV exposed child follow-up

Malawi (national)

2016 Q3 (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	**8,409**	**100%**

CPT status

On CPT	**7,568**	**90%**
Not on CPT	**841**	**10%**

HIV status

Current HIV infection status unknown	**3,754**	**45%**
HIV infection not confirmed, not ART eligible	**3,744**	100%
HIV infection not confirmed, ART eligible (PSHD)	**10**	0%
Current HIV infection status known	**4,655**	**55%**
Confirmed not infected	**4,580**	98%
Confirmed infected (ART eligible)	**75**	2%

ART eligibility summary

Not eligible for ART	**8,324**	**99%**
ART eligible	**85**	**1%**
ART not initiated	**26**	31%
Initiated ART	**59**	69%

Primary follow-up outcome

Discharged uninfected	**36**	**0%**
Continue follow-up	**7,606**	**94%**
Started ART	**59**	**1%**
Defaulted	**342**	**4%**
Died	**36**	**0%**

Transfers between sites

Total not transferred out	**8,079**	**96%**
Transferred out	**330**	**4%**

Age 12 months

Age cohort outcomes

*

Total children in birth cohort

Total children registered	**9,683**	**100%**

CPT status

On CPT	**7,420**	**77%**
Not on CPT	**2,263**	**23%**

HIV status

Current HIV infection status unknown	**3,722**	**38%**
HIV infection not confirmed, not ART eligible	**3,717**	100%
HIV infection not confirmed, ART eligible (PSHD)	**5**	0%
Current HIV infection status known	**5,961**	**62%**
Confirmed not infected	**5,803**	97%
Confirmed infected (ART eligible)	**158**	3%

* Subgroups may not add to 100% due to rounding

HIV exposed child follow-up

Malawi (national)

2016 Q3 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

Age cohort outcomes

*

ART eligibility summary

Not eligible for ART	**9,520**	**98%**
ART eligible	**163**	**2%**
ART not initiated	**2**	1%
Initiated ART	**161**	99%

Primary follow-up outcome

Discharged uninfected	**45**	**0%**
Continue follow-up	**7,389**	**80%**
Started ART	**161**	**2%**
Defaulted	**1,577**	**17%**
Died	**80**	**1%**

Transfers between sites

Total not transferred out	**9,252**	**96%**
Transferred out	**431**	**4%**

Age 24 months

Age cohort outcomes

*

Total children in birth cohort

Total children registered	**8,769**	**100%**

CPT status

On CPT	**589**	**7%**
Not on CPT	**8,180**	**93%**

HIV status

Current HIV infection status unknown	**3,710**	**42%**
HIV infection not confirmed, not ART eligible	**3,683**	99%
HIV infection not confirmed, ART eligible (PSHD)	**27**	1%
Current HIV infection status known	**5,059**	**58%**
Confirmed not infected	**4,828**	95%
Confirmed infected (ART eligible)	**231**	5%

ART eligibility summary

Not eligible for ART	**8,511**	**97%**
ART eligible	**258**	**3%**
ART not initiated	**28**	11%
Initiated ART	**230**	89%

Primary follow-up outcome

Discharged uninfected	**4,707**	**56%**
Continue follow-up	**473**	**6%**
Started ART	**230**	**3%**
Defaulted	**2,863**	**34%**
Died	**103**	**1%**

Transfers between sites

Total not transferred out	**8,376**	**96%**
Transferred out	**393**	**4%**

* Subgroups may not add to 100% due to rounding

Blood safety

Malawi (national)

2016 Q3 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

Infect. disease screening among potential donors *

HIV screening

HIV testing not done	**2,453**	**21%**
Tested for HIV	**9,461**	**79%**
HIV negative	**8,949**	95%
HIV positive	**512**	5%

Hepatitis B screening

HepB testing not done	**2,482**	**21%**
Tested for Hepatitis B	**9,432**	**79%**
HepB Negative	**8,914**	95%
HepB Positive	**518**	5%

Hepatitis C screening

HepC testing not done	**5,646**	**47%**
Tested for Hepatitis C	**6,268**	**53%**
HepC Negative	**6,087**	97%
HepC Positive	**181**	3%

Syphilis screening

Syphilis testing not done	**2,508**	**21%**
Tested for Syphilis	**9,406**	**79%**
Syphilis Negative	**9,148**	97%
Syphilis Positive	**258**	3%

Malaria screening

Malaria testing not done	**3,686**	**31%**
Tested for malaria	**8,228**	**69%**
Malaria Negative	**7,641**	93%
Malaria Positive	**587**	7%

Summary screening outcome

Not donated	**4,523**	**38%**
Donated	**7,391**	**62%**
Screened for at least HIV, HepB and syphilis	**7,003**	95%
Screened for HIV, HepB, HepC, Syphilis, Malaria	**5,047**	72%
Screened for HIV, HepB, Syphilis	**1,956**	28%
Screened for HIV, HepB	**6**	0%
Screened for HIV only	**8**	0%
Screened with any other combination of tests	**374**	5%

Cross-matching report *

Blood group typing (for units and patients)

Total blood group typing done	**22,968**	**100%**

Blood units cross-matched (by source)

Total blood units cross-matched	**14,290**	**100%**
Total units from MBTS (estimated)	**6,899**	48%
Total units from replacement donors	**7,391**	52%

Blood units cross-matched by patient group

Units cross-matched for maternity	**3,297**	**23%**
Units cross-matched for paediatrics	**4,307**	**30%**
Units cross-matched for other ward	**6,686**	**47%**

* Subgroups may not add to 100% due to rounding

Blood safety

Malawi (national)

2016 Q3 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

Cross-matching report

*

Transfusion reactions

Units transfused without adverse events	**14,268**	**100%**
Units with suspected transfusion reactions	**17**	**0%**
Units with confirmed transfusion reactions	**5**	**0%**

* Subgroups may not add to 100% due to rounding

Antenatal Care

Malawi (national)

2016 Q3 (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	**152,855**	**100%**

ANC cohort analysis *

Trimester of first visit

Started ANC 0-12 wks	**18,469**	**12%**
Started ANC 13+ wks	**134,386**	**88%**

HIV status ascertainment

HIV status not ascertained	**7,898**	**5%**
HIV status ascertained	**144,957**	**95%**
Valid previous test result	**11,048**	8%
Previous negative	**4,723**	43%
Previous positive	**6,325**	57%
New test at ANC	**133,909**	92%
New negative	**129,162**	96%
New positive	**4,747**	4%

HIV status summary

Total women HIV negative	**133,885**	**92%**
Total women HIV positive	**11,072**	**8%**

PMTCT regimen mother

No ARVs	**686**	**6%**
Any ARVs	**10,386**	**94%**
ART (by time of initiation)	**10,386**	100%
Already on ART when starting ANC	**6,137**	59%
Started ART at 0-27 weeks of pregnancy	**3,646**	35%
Started ART at 28+ weeks of preg.	**603**	6%

ANC women after 6 months

ANC cohort analysis *

Total women completing ANC in the reporting period

Total women in booking cohort	**151,941**	**100%**

Visits per woman

Women with 1 visit	**32,170**	**21%**
Women with 2 visits	**36,915**	**24%**
Women with 3 visits	**44,778**	**29%**
Women with 4 visits	**30,362**	**20%**
Women with 5+ visits	**7,716**	**5%**

Pre-eclampsia

No pre-eclampsia	**150,743**	**99%**
Pre-eclampsia	**1,198**	**1%**

TTV doses

0-1 TTV doses	**71,082**	**47%**
2+ TTV doses	**80,859**	**53%**

SP tablets

0 SP doses	**18,515**	**12%**
1 SP dose (1 x 3 tabs)	**38,056**	**25%**
6+ SP tablets (2 x 3 tabs)	**95,370**	**63%**

* Subgroups may not add to 100% due to rounding

Antenatal Care

Malawi (national)

2016 Q3 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

ANC cohort analysis

*

FeFo tablets		
0-119 FeFo tablets	**137,312**	**90%**
120+ FeFo tablets	**14,629**	**10%**
Albendazole (Deworming)		
0 Albend. doses	**31,439**	**20%**
1 Albend. dose	**122,551**	**80%**
ITN (bednets)		
No ITN	**224,475**	**70%**
ITN received	**98,248**	**30%**
Syphilis status		
Not tested for syphilis	**58,290**	**38%**
Tested for syphilis	**93,651**	**62%**
Syphilis negative	**92,459**	99%
Syphilis positive	**1,192**	1%
HIV status ascertainment		
HIV status not ascertained	**5,345**	**4%**
HIV status ascertained	**146,596**	**96%**
Valid previous test result	**10,546**	7%
Previous negative	**4,533**	43%
Previous positive	**6,013**	57%
New test at ANC	**136,050**	93%
New negative	**130,880**	96%
New positive	**5,170**	4%
HIV status summary		
Total women HIV negative	**135,413**	**92%**
Total women HIV positive	**11,183**	**8%**
CPT status (among HIV pos)		
Not on CPT	**717**	**6%**
On CPT	**10,466**	**94%**
PMTCT regimen mother		
No ARVs	**680**	**6%**
Any ARVs	**10,503**	**94%**
ART (by time of initiation)	**10,503**	100%
Already on ART when starting ANC	**5,493**	52%
Started ART at 0-27 weeks of pregnancy	**4,159**	40%
Started ART at 28+ weeks of preg.	**851**	8%
Baby's ARVs dispensed		
No ARVs dispensed for infant	**985**	**9%**
ARVs dispensed for infant	**10,198**	**91%**

* Subgroups may not add to 100% due to rounding

Maternity

Malawi (national)

2016 Q3 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

Maternal details

*

Admissions in the reporting period

Total admissions (referrals double-counted)	**132,461**	**100%**
Not referred to other site (total women)	**125,322**	95%
Referred out before delivery (multiple admissions)	**7,139**	5%

HIV status ascertainment

HIV status not ascertained	**1,926**	**1%**
HIV status ascertained	**130,260**	**99%**
Valid previous test result	**124,730**	96%
Previous negative	**115,225**	92%
Previous positive	**9,505**	8%
New test at maternity	**5,530**	4%
New negative	**5,343**	97%
New positive	**187**	3%

HIV status summary

Total women HIV negative	**120,568**	**93%**
Total women HIV positive	**9,692**	**7%**

ARVs during pregnancy (among HIV pos)

No ARV in pregnancy	**44**	**0%**
Any ARVs	**9,648**	**100%**
ART (by time of initiation)	**9,648**	100%
ART initiated before pregnancy	**7,985**	83%
ART initiated in 1st / 2nd trimester	**914**	9%
ART initiated in 3rd trimester	**486**	5%
ART initiated during labour	**263**	3%

Obstetric complications

No obstetric complications	**115,768**	**88%**
Any obstetric complications	**16,390**	**12%**
Haemorrhage	**2,769**	17%
Haemorrhage ante-partum	**861**	31%
Haemorrhage post-partum	**1,908**	69%
Obstr / prol labour	**5,499**	34%
(pre-) Eclampsia	**1,404**	9%
Maternal sepsis	**111**	1%
Ruptured uterus	**111**	1%
Other obstetric complications	**6,496**	40%

Emergency obstetric care

Oxytocin	**122,769**	**94%**
Anticonvulsive	**846**	**1%**
Antibiotics	**6,489**	**5%**
Blood transfusion	**400**	**0%**
Manual removal of placenta	**465**	**0%**

Vitamin A

Vit A not given	**49,144**	**37%**
Vit A given	**83,014**	**63%**

Maternity

Malawi (national)

2016 Q3 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

Maternal details

*

Staff conducting delivery

Category A: MO, CO, nurse/midwife, MA	**120,302**	**96%**
Category B: PA, WA, HSA	**468**	**0%**
Category C: Other	**4,277**	**3%**

Mother survival

Mother alive	**124,961**	**100%**
Mother died	**86**	**0%**

Infant details

*

Single babies / multiple deliveries

Total babies delivered	**127,326**	**100%**
Single babies	**123,159**	97%
Twin / multiple babies	**4,167**	3%

Delivery place

Total deliveries at a health facility	**122,831**	**96%**
This facility	**122,495**	100%
Other facility	**336**	0%
Total deliveries before reaching the facility	**4,495**	**4%**
In transit	**2,955**	66%
Home / TBA	**1,540**	34%

Delivery mode

Spontaneous vaginal	**114,322**	**90%**
Vacuum extraction	**1,499**	**1%**
Breech	**2,120**	**2%**
Caesarean section	**9,385**	**7%**

Infant complications

No infant complications	**111,627**	**88%**
Total infants with complications	**15,699**	**12%**
Prematurity	**3,281**	21%
Weight less 2500g	**4,904**	31%
Asphyxia	**5,327**	34%
Sepsis	**426**	3%
Other newborn complication	**1,761**	11%

Infant survival

Total live births	**125,289**	**98%**
Discharged alive	**124,366**	99%
Neonatal deaths	**923**	1%
Stillbirths	**2,037**	**2%**
Stillbirth, fresh	**1,038**	51%
Stillbirth, macerated	**999**	49%

* Subgroups may not add to 100% due to rounding

Maternity

Malawi (national)

2016 Q3 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

Infant details

*

HIV exposure / ARV proph. (among discharged alive)

Infants with unknown HIV exposure status	**1,348**	**1%**
Infants with known HIV exposure status	**123,018**	**99%**
Not HIV exposed	**114,138**	93%
HIV exposed	**8,880**	7%
Received no ARVs	**494**	6%
Received ARVs	**8,386**	94%
Nevirapine	**8,386**	100%

Breastfeeding initiated

BF not started within 60min	**10,246**	**8%**
BF started within 60min	**117,080**	**92%**

Tetracycline eye ointment given

TO not given	**11,427**	**9%**
TO given	**115,899**	**91%**

* Subgroups may not add to 100% due to rounding

ART cohort analysis

Malawi (national)

2016 Q3 (Quarter)

Registration details

*

ART clinic registrations

Total ART clinic registrations	**51,414**	**100%**

Registration type

First time ART initiations (total patients)	**41,994**	**82%**
ART re-initiations	**468**	**1%**
ART transfers in	**8,952**	**17%**

Sex

Males	**19,184**	**37%**
Females	**32,230**	**63%**
Non-pregnant	**25,775**	80%
Pregnant	**6,455**	20%

Age at ART initiation

Adults 15+ yrs	**46,902**	**91%**
Children 0-14 yrs	**4,512**	**9%**
Children 2-14 yrs	**3,867**	86%
Children below 24 mths	**645**	14%

Reason for starting ART

Presumed severe HIV Disease	**102**	**0%**
Confirmed HIV infection	**51,312**	**100%**
WHO stage 1 or 2	**40,888**	80%
CD4 below threshold	**5,220**	13%
CD4 unknown or >threshold	**35,668**	87%
PCR infants	**99**	0%
Children 12-59 mths	**795**	2%
Pregnant women	**6,287**	18%
Breastfeeding mothers	**1,428**	4%
Asymptomatic / mild	**27,059**	76%
WHO stage 3	**9,036**	18%
WHO stage 4	**1,298**	3%
Unknown / reason outside of guidelines	**90**	0%

TB at ART initiation

Never TB / TB > 24 months ago	**50,638**	**98%**
TB within the last 24 months	**370**	**1%**
Current episode of TB	**406**	**1%**

Kaposi's sarcoma at ART initiation

No KS	**51,206**	**100%**
Patients with KS	**208**	**0%**

* Subgroups may not add to 100% due to rounding

ART cohort analysis

Malawi (national)

2016 Q3 (Cumulative)

Registration details

*

ART clinic registrations

Total ART clinic registrations	**1,216,404**	**100%**

Registration type

First time ART initiations (total patients)	**973,627**	**80%**
ART re-initiations	**13,636**	**1%**
ART transfers in	**229,141**	**19%**

Sex

Males	**439,685**	**36%**
Females	**776,719**	**64%**
Non-pregnant	**623,533**	80%
Pregnant	**153,186**	20%

Age at ART initiation

Adults 15+ yrs	**1,110,669**	**91%**
Children 0-14 yrs	**105,735**	**9%**
Children 2-14 yrs	**81,887**	77%
Children below 24 mths	**23,848**	23%

Reason for starting ART

Presumed severe HIV Disease	**3,969**	**0%**
Confirmed HIV infection	**1,212,428**	**100%**
WHO stage 1 or 2	**575,115**	47%
CD4 below threshold	**351,833**	61%
CD4 unknown or >threshold	**223,282**	39%
PCR infants	**3,271**	1%
Children 12-59 mths	**10,644**	5%
Pregnant women	**135,042**	60%
Breastfeeding mothers	**46,319**	21%
Asymptomatic / mild	**28,006**	13%
WHO stage 3	**521,616**	43%
WHO stage 4	**108,791**	9%
Unknown / reason outside of guidelines	**6,906**	1%

TB at ART initiation

Never TB / TB > 24 months ago	**1,140,704**	**94%**
TB within the last 24 months	**38,380**	**3%**
Current episode of TB	**37,320**	**3%**

Kaposi's sarcoma at ART initiation

No KS	**1,195,840**	**98%**
Patients with KS	**20,564**	**2%**

* Subgroups may not add to 100% due to rounding

ART cohort analysis

Malawi (national)

2016 Q3 (Cumulative)

ART outcomes

*

Primary follow-up outcomes

Total alive on ART	**658,241**	**67%**
Alive on ART at site of last registration	**658,188**	100%
ART patients in transit between sites	**53**	0%
Defaulted	**237,122**	**24%**
Stopped ART	**3,875**	**0%**
Total died	**89,092**	**9%**
Died month 1	**20,522**	23%
Died month 2	**12,817**	14%
Died month 3	**7,817**	9%
Died month 4+	**47,936**	54%

Transfers between sites

Total not transferred out	**987,210**	**81%**
Transferred out	**229,194**	**19%**

ART regimens

First line regimens	**648,066**	**98%**
Adult formulation	**620,164**	96%
Regimen 0A	**558**	0%
Regimen 1A	**791**	0%
Regimen 2A	**31,616**	5%
Regimen 3A	**66**	0%
Regimen 4A	**775**	0%
Regimen 5A	**575,763**	93%
Regimen 6A	**10,595**	2%
Paed. formulation	**27,902**	4%
Regimen 0P	**633**	2%
Regimen 1P	**57**	0%
Regimen 2P	**26,676**	96%
Regimen 3P	**12**	0%
Regimen 4P	**524**	2%
Second line regimens	**9,358**	**1%**
Adult formulation	**8,030**	86%
Regimen 7A	**5,029**	63%
Regimen 8A	**3,001**	37%
Paed. Formulation	**1,328**	14%
Regimen 9P	**1,328**	100%
Other regimen (adult / paed)	**764**	**0%**

Adherence

Adherence unknown (not recorded)	**8,111**	**1%**
Adherence recorded	**650,077**	**99%**
0-3 doses missed	**584,770**	90%
4+ doses missed	**65,307**	10%

ART side effects

Side effects unknown (not recorded)	**20,504**	**3%**
Side effects recorded	**637,684**	**97%**
No side effects	**624,511**	98%
Any side effects	**13,173**	2%

* Subgroups may not add to 100% due to rounding

ART cohort analysis

Malawi (national)

2016 Q3 (Cumulative)

ART outcomes

*

Current TB status among ART patients (ICF)

ICF not done (Current TB status unknown/ not circ)	**13,996**	**2%**
ICF done	**644,192**	**98%**
TB not suspected	**637,092**	99%
TB suspected	**5,093**	1%
TB confirmed	**2,007**	0%
TB confirmed, not on treatment	**593**	30%
TB confirmed, on TB treatment	**1,414**	70%

* Subgroups may not add to 100% due to rounding

ART survival analysis

Malawi (national)

2016 Q3 (Quarter)

12 month survival children

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations	**2,494**	**100%**
Transfers out (double counted)	**281**	11%
Total not transferred out (patients in cohort)	**2,213**	89%
Total alive on ART	**1,748**	79%
Total not retained	**465**	21%
Defaulted	**375**	81%
Stopped ART	**10**	2%
Died	**80**	17%

12 month survival all ages

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations	**32,697**	**100%**
Transfers out (double counted)	**3,466**	11%
Total not transferred out (patients in cohort)	**29,231**	89%
Total alive on ART	**22,207**	76%
Total not retained	**7,024**	24%
Defaulted	**5,873**	84%
Stopped ART	**83**	1%
Died	**1,068**	15%

24 month survival all ages

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations	**35,879**	**100%**
Transfers out (double counted)	**4,377**	12%
Total not transferred out (patients in cohort)	**31,502**	88%
Total alive on ART	**22,663**	72%
Total not retained	**8,839**	28%
Defaulted	**7,512**	85%
Stopped ART	**100**	1%
Died	**1,227**	14%

36 month survival all ages

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations	**33,448**	**100%**
Transfers out (double counted)	**5,083**	15%
Total not transferred out (patients in cohort)	**28,365**	85%
Total alive on ART	**19,297**	68%
Total not retained	**9,068**	32%
Defaulted	**7,343**	81%
Stopped ART	**92**	1%
Died	**1,633**	18%

* Subgroups may not add to 100% due to rounding

ART survival analysis

Malawi (national)

2016 Q3 (Quarter)

48 month survival all ages

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations		**38,251**	**100%**
	Transfers out (double counted)	**6,487**	17%
	Total not transferred out (patients in cohort)	**31,764**	83%
	Total alive on ART	**20,934**	66%
	Total not retained	**10,830**	34%
	Defaulted	**8,365**	77%
	Stopped ART	**124**	1%
	Died	**2,341**	22%

60 month survival all ages

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations		**32,867**	**100%**
	Transfers out (double counted)	**7,145**	22%
	Total not transferred out (patients in cohort)	**25,722**	78%
	Total alive on ART	**16,998**	66%
	Total not retained	**8,724**	34%
	Defaulted	**6,294**	72%
	Stopped ART	**128**	1%
	Died	**2,302**	26%

72 month survival all ages

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations		**23,249**	**100%**
	Transfers out (double counted)	**6,191**	27%
	Total not transferred out (patients in cohort)	**17,058**	73%
	Total alive on ART	**10,052**	59%
	Total not retained	**7,006**	41%
	Defaulted	**4,782**	68%
	Stopped ART	**79**	1%
	Died	**2,145**	31%

84 month survival all ages

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations		**21,451**	**100%**
	Transfers out (double counted)	**6,283**	29%
	Total not transferred out (patients in cohort)	**15,168**	71%
	Total alive on ART	**8,345**	55%
	Total not retained	**6,823**	45%
	Defaulted	**4,656**	68%
	Stopped ART	**94**	1%
	Died	**2,073**	30%

* Subgroups may not add to 100% due to rounding

ART survival analysis

Malawi (national)

2016 Q3 (Quarter)

96 month survival all ages

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations	**20,512**	**100%**
Transfers out (double counted)	**5,937**	29%
Total not transferred out (patients in cohort)	**14,575**	71%
Total alive on ART	**7,747**	53%
Total not retained	**6,828**	47%
Defaulted	**4,382**	64%
Stopped ART	**83**	1%
Died	**2,363**	35%

108 month survival all ages

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations	**15,582**	**100%**
Transfers out (double counted)	**4,943**	32%
Total not transferred out (patients in cohort)	**10,639**	68%
Total alive on ART	**5,151**	48%
Total not retained	**5,488**	52%
Defaulted	**3,440**	63%
Stopped ART	**53**	1%
Died	**1,995**	36%

120 month survival all ages

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations	**12,679**	**100%**
Transfers out (double counted)	**4,044**	32%
Total not transferred out (patients in cohort)	**8,635**	68%
Total alive on ART	**3,966**	46%
Total not retained	**4,669**	54%
Defaulted	**2,401**	51%
Stopped ART	**52**	1%
Died	**2,216**	47%

6 month survival OptionB+

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations	**8,486**	**100%**
Transfers out (double counted)	**650**	8%
Total not transferred out (patients in cohort)	**7,836**	92%
Total alive on ART	**5,995**	77%
Total not retained	**1,841**	23%
Defaulted	**1,782**	97%
Stopped ART	**20**	1%
Died	**39**	2%

* Subgroups may not add to 100% due to rounding

ART survival analysis

Malawi (national)

2016 Q3 (Quarter)

12 month survival OptionB+

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations		**8,443**	**100%**
	Transfers out (double counted)	**854**	10%
	Total not transferred out (patients in cohort)	**7,589**	90%
		Total alive on ART	**5,353**	71%
		Total not retained	**2,236**	29%
			Defaulted	**2,130**	95%
			Stopped ART	**33**	1%
			Died	**73**	3%

24 month survival OptionB+

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations		**9,095**	**100%**
	Transfers out (double counted)	**1,083**	12%
	Total not transferred out (patients in cohort)	**8,012**	88%
		Total alive on ART	**5,216**	65%
		Total not retained	**2,796**	35%
			Defaulted	**2,664**	95%
			Stopped ART	**59**	2%
			Died	**73**	3%

36 month survival OptionB+

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations		**9,102**	**100%**
	Transfers out (double counted)	**1,278**	14%
	Total not transferred out (patients in cohort)	**7,824**	86%
		Total alive on ART	**5,047**	65%
		Total not retained	**2,777**	35%
			Defaulted	**2,590**	93%
			Stopped ART	**33**	1%
			Died	**154**	6%

* Subgroups may not add to 100% due to rounding

STI site report

Malawi (national)

2016 Q3 (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		**68,939**	**100%**
	Index patients treated (symptomatic)	**55,365**	80%
	Partners treated	**13,574**	20%

Sex

Males		**28,269**	**41%**
Females		**40,670**	**59%**
	Non-pregnant	**35,560**	87%
	Pregnant	**5,110**	13%

Age group

Age group A (0-19 years)		**5,719**	**8%**
Age group B (20-24 years)		**16,359**	**24%**
Age group C (25+ years)		**46,861**	**68%**

Client type

Symptomatic cases		**61,051**	**89%**
	Index cases	**55,365**	91%
	Partners symptomatic	**5,686**	9%
Partners asymptomatic		**7,888**	**11%**

STI treatment history

Never treated for STI		**51,191**	**74%**
Previously treated for STI		**17,748**	**26%**
	Old >3 months ago	**12,603**	71%
	Recent ≤3 months ago	**5,145**	29%

STI syndromic diagnosis

GUD		**11,433**	**15%**
UD		**18,602**	**25%**
AVD		**21,743**	**29%**
	Low risk	**8,353**	38%
	High risk	**13,390**	62%
LAP		**10,948**	**15%**
SS		**1,029**	**1%**
BU		**747**	**1%**
BA		**1,032**	**1%**
NC		**240**	**0%**
Genital Warts		**681**	**1%**
Syphilis RPR VDRL		**3,158**	**4%**
Other STI		**4,673**	**6%**

STI partner notification

Total partner notification slips issued		**17,362**	**100%**
	Total partners returned	**13,574**	78%
	Total partners not seen	**3,788**	22%

* Subgroups may not add to 100% due to rounding

STI site report

Malawi (national)

2016 Q3 (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	**17,523**	**25%**
HIV status ascertained	**51,416**	**75%**
HIV negative (new test)	**40,340**	78%
HIV positive	**11,076**	22%
New positive	**2,844**	26%
Previous positive	**8,232**	74%
Not on ART	**1,090**	13%
On ART	**7,142**	87%

STI clients referred for services

Lab	**859**	**3%**
Gynae review	**769**	**3%**
Surgical review	**307**	**1%**
Repeat HTC	**22,155**	**75%**
ART (for assessment)	**2,363**	**8%**
PMTCT	**221**	**1%**
Other (service referrals)	**2,723**	**9%**