Government of Malawi Ministry of Health

Integrated HIV Program Report
January-March 2016

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

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1 Executive Summary

A summary of the key achievements between **January and March 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
  - **724** (static) ART sites
  - **631** PMTCT sites (Option B+, all included in ART sites above)
  - **661** Pre-ART sites
  - **653** sites with HIV-exposed child follow-up
- **862,157** persons were tested for HIV and received their results; **270,252 (31%)** accessed HTC for the first time; **591,905 (69%)** were repeat testers and **30,048 (5%)** of these received confirmatory testing (after having tested positive in the past). **41,901 (5%)** clients received a positive result for the first time.
- **22,727 (97%)** of 23,335 blood units collected were screened for (at least) HIV, hepatitis B and syphilis.
- **147,765 (95%)** of 156,222 women at ANC had their HIV status ascertained; **11,567 (9%)** of these were HIV positive. **120,777 (98%)** of 123,203 women at maternity had their HIV status ascertained **9,408 (8%)** of these were HIV positive.
- **28,052** patients started ART this quarter.
- **611,031** patients were alive and on ART by end of March 2016. This means that **62%** of the estimated 979,000 HIV positive population was on ART. [1] ART coverage was **61%** (49,672 / 81,000) for children[2] and **63%** (561,359 / 898,000) for adults.
- **76%** of adults and **74%** 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)
- **532,156 (93%)** of 599,315 patients on first line adult ART were on regimen 5A (TDF/3TC/EFV).
- **11,715** [3] **(87%)** of an estimated **13,500** [1] HIV infected pregnant women in Malawi were on ART this quarter. **7,074 (60%)** of these were already on ART when getting pregnant and **4,641 (40%)** started ART during pregnancy/delivery.
- An additional **1,864** [2] breastfeeding women started ART due to ***Option B+*** (in WHO stage 1/2)
- **75%, 69%, 66%** and **65%** of women started under ***Option B+*** were retained on ART at **6, 12, 24** and **36 months** after initiation, respectively.
- **8,784 (8%)** of infants discharged alive from maternity were known to be HIV exposed, **8,332 (95%)** of these received ARV prophylaxis (nevirapine). **8,329 (95%)** were enrolled in exposed child follow-up before age 2 months.
- **12,296** HIV exposed children and **7,047** 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 implemented a revised HIV Program in all health facilities following the release of the ***2011 Malawi Integrated Clinical HIV Guidelines***. The second edition of these guidelines was published in March 2014 and implementation of revised policies commenced in April 2014. Key policies include:

- **PMTCT Option B+:** Universal life-long ART for all HIV infected pregnant and breastfeeding women regardless of clinical or immunological stage.

- Standard **HIV exposed child follow-up** to age 24 months. This program aims to improve early infant diagnosis and ART initiation using DNA-PCR testing for all infants from age 6 weeks; rapid antibody testing is considered diagnostic from age 12 months and repeated at 24 months. HIV exposed child enrolment and follow-up should be integrated with maternal ART follow-up (Option B+) to improve retention and adherence.

- **Early ART initiation**: universal ART for children under 5 years (confirmed HIV infection, CD4% no longer required), children over 5 years and adults with a **CD4** count **≤500**, patients with HIV and hepatitis B co-infection.

- Transition to a **new first line ART regimens** for adults (Malawi regimen 5A: tenofovir / lamivudine / efavirenz) and children (Malawi regimen 2: zidovudine / lamivudine / nevirapine), including provision of paediatric ARV formulations for all children under 25kg. Transition to 5A was completed by end 2013.

- Standardized **pre-ART services** for all HIV-infected persons not yet eligible for ART. The pre-ART program aims to reduce the incidence of HIV-related diseases and to enable early ART initiation based on the new CD4 cell threshold (500) through scheduled CD4 count monitoring.

- Provider-initiated provision of **contraceptives and condoms** for all adults in pre-ART and ART clinics to reduce the rate of unwanted pregnancies among HIV-infected adults and to reduce HIV-transmission between sexual partners.

- Isoniazid preventive therapy (**IPT**) for pre-ART patients to reduce the incidence of TB and intensified TB case finding (**ICF**) for all patients in pre-ART and ART follow-up to enable early diagnosis and treatment of TB and to reduce TB transmission in HIV clinics.

- Roll-out of scheduled **viral load monitoring** to improve early detection of treatment failure and initiation of second line ART.

Implementation of PMTCT Option B+ requires provision of ART services at all health facilities with Maternal and Child Health services. This required a massive acceleration of the **decentralization of ART services** from 303 (static) sites in June 2011 to currently 724 sites.

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 HIV Department database. The 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 HTC, 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 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 HTC 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

731 public and private sector facilities were visited for **clinical HIV program supervision** between 6th and 19th April 2016.

The large number of sites was covered by **177** supervisors working in **32** teams that spent a total of **2,125 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. **335 (46%)** sites were awarded a *certificate* for **excellent performance.** This number is slightly higher than the previous quarter (330). **76 (10%)** sites had significant weaknesses and were rated to require **intensive mentoring**. Mentoring capacity will need to be further expanded.

Table 1: Outcomes of integrated HIV services supervision for 2016 Q1

Zone	Total facil. visited*	Supervision hours spent at facilities		Performance (# and % of sites)	
		Total	Average per site	Excellent perform.	Mentoring needed
NZ	126	305	2.5	69 55%	7 6%
CEZ	103	270	2.6	55 53%	13 13%
CWZ	169	455	2.7	59 35%	25 15%
SEZ	165	586	3.6	74 45%	17 10%
SWZ	168	509	3	78 46%	14 8%
Malawi	731	2,125	2.9	335 46%	76 10%

* 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 **139** sites had cumulatively registered more than 2,000 ART patient and **53** of these had registered more than 5,000. **71 (51%)** 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 Q1 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 Q1

Zone	Total fac.(1)	Facilities providing HIV services				CD4 count machines (2)		
		Exp. child	Pre-ART	PMTCT B+	ART	Installed	Functional	Results
NZ	135	113 84%	116 86%	100 74%	124 92%	31 23%	26 84%	2,302
CEZ	103	98 95%	94 91%	97 94%	103 100%	14 14%	14 100%	1,444
CWZ	169	134 79%	134 79%	136 80%	166 98%	35 21%	26 74%	3,127
SWZ	168	148 88%	159 95%	141 84%	167 99%	40 24%	39 98%	5,845
SEZ	166	160 96%	158 95%	157 95%	164 99%	47 28%	33 70%	3,446
Malawi	741	653 88%	661 89%	631 85%	724 98%	167 23%	138 83%	16,164

(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 **741** sites designated to provide clinical HIV services in Q1 2016, by zone. At the national level, there were **724** (static) sites with at least one patient on ART, **631** sites had enrolled women under PMTCT Option B+; **661** sites were providing pre-ART services. **653** 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 **167** sites, and **138** (83%) of these had produced at least 1 result during Q1 2016. The total number of CD4 results produced (**16, 164)** was similar to previous quarter (16, 227). 36% of these outputs were generated by 39 machines in the SW zone, implying that many CD4 machines continued to experience down-time or to be running considerably below capacity. The raised CD4 count threshold for ART eligibility may have also resulted in a decrease in the number of pre-ART patients requiring CD4 monitoring as a large proportion is likely to be started on ART after their first CD4 count.

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 HTC Providers since 2011. This separate registration system is needed because HIV testing providers include lay persons with HTC training who are not registered with any other professional body. All HTC providers are issued with a unique ID and a professional logbook for documentation of duty stations, HTC 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 Q2	2015 Q3	2015 Q4	2016 Q1
Sites visited	**718**	**727**	**722**	**731**
Sites with any tests done	674 *94%*	684 *94%*	678 *94%*	689 *94%*
Sites with registered HTC staff	671 *93%*	669 *92%*	679 *94%*	684 *94%*
Total HTC staff at visited sites	**3,830**	**3,933**	**3,959**	**4,064**
Staff with any test done	2,495 *65%*	2,287 *58%*	2,336 *59%*	2,295 *56%*
Staff with 300+ tests done this quarter	326 *11%*	474 *17%*	492 *17%*	730 *31%*
Logbooks reviewed	2,870 *75%*	2,856 *73%*	2,918 *74%*	2,332 *57%*
HTC staff participating in PT this quart	931 *32%*	209 *7%*	111 *4%*	1,752 *75%*
Total tests (HTC register)	**494,006**	**625,803**	**606,558**	**862,157**
Tests accounted for by individual staff	380,159 *77%*	443,193 *71%*	446,400 *74%*	584,156 *68%*
Source: logbooks	359,042 *94%*	420,985 *95%*	418,665 *69%*	479,433 *82%*
Source: HTC register	21,117 *6%*	22,208 *5%*	27,735 *7%*	104,723 *18%*
Total tests by staff with 300+ tests	166,291 *44%*	263,234 *59%*	271,897 *61%*	433,982 *74%*

684 (94%) of the 731 visited facilities had registered HTC providers and **689** (94%) sites had performed at least one test during Q1 2016. **2,332 (57%)** of **4,064** HTC providers had their logbooks available for review. The proportion of HTC providers with logbook reviewed is lower compared to previous quarter (74%). This is probably because, the HTC provider logbook has been revised and most providers are yet to have a revised logbook.

According to the 2,332 reviewed logbooks, **1,752 (75%)** HTC providers had participated in proficiency (panel) testing (PT) this quarter. This is higher than the participation rate from the previous quarters. 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 HTC providers.

584,156 (68%) of all 862,157 tests conducted this quarter (according to HTC register reports) were accounted for by individual HTC staff working at the visited sites. **479,433 (82%)** of these tests were documented in the reviewed logbooks and an additional **104,723 (18%)** could be attributed to individual providers from staff codes in the HTC registers. **730** (31%) of 2,295 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 **730 staff** who met or exceeded this target provided **433,982 (74%)** of the total number of tests accounted for by individual staff this quarter.

4.2.2 ART/PMTCT

Integrated HIV program supervision has included a staffing census for ART clinics since Q3 2014. This census is implemented 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 April 2016, **668** clinicians (physicians, clinical or medical officers); **1,035** nurses and **974** auxiliary staff (health surveillance assistants, clerks, etc.) were working in ART clinics in Malawi.

	2015 Q2		2015 Q3		2015 Q4		2016 Q1	
Clinicians	659	*27%*	702	*26%*	684	*25%*	668	*25%*
Nurses	894	*36%*	981	*37%*	1,026	*38%*	1,035	*38%*
Pharmacy staff	13	*1%*	16	*1%*	16	*1%*	19	*1%*
Auxiliary Staff	884	*36%*	957	*36%*	962	*36%*	974	*36%*
Total	**2,450**		**2,656**		**2,688**		**2,696**	

An estimated 2.9 million ART patient visits are currently managed at the 724 ART sites per annum, based on 611,031 patients alive on ART and an average dispensing interval of 2.5 months. With 260 working days per year, an average of 11,281 patient visits are therefore managed by the ART sites per working day. At current staffing levels, this translates into an average of **17** ART patient visits per clinician and **11** per nurse per day. This approximate HRH capacity assessment does not take account of site-specific differences in patient burden and staffing levels and there are several medium and high burden sites with sub-optimal staffing. However, the national treatment program is fully decentralized to the health centre level and the program continues to devolve the growing patient burden to peripheral facilities. Since 2011, the steepest increase in ART patient numbers has been recorded at the 300 small peripheral sites that have the largest collective staffing capacity (see Figure 4 on page 26).

5 HIV Testing and Counselling Program Outputs

HTC protocols have been revised in 2013 and a new HTC 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 HTS program outputs were affected by a number of challenges. First, despite the availability of quality control (QC) samples, most had not ran QC samples. Space also remains a challenge and in most facilities, providers have to share the testing rooms. Some mentors supported by partners are not trained and the mentorship provided is therefore not comprehensive. Conveyor belt HIV testing is still being practised in some facilities despite the policy change. Finally, some partner supported facilities use an edited version of the national M&E tools.

The full national HTC data are presented in the **Appendix**.

5.1 HIV Testing Outputs

862,157 people[4] were tested and counselled for HIV between January and March 2016. This is the largest number of people ever tested within one quarter and represents a **43%** increase from the previous quarter, where testing outputs may have been affected by the festive season. 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.

829,528 (96%) of all tests were performed at health facilities, **4,906 (<1%)** were done in stand-alone HTC sites and **27,723 (3%)** were done outside of facilities / in the community. Out of a total of **41,901** people newly diagnosed with HIV this quarter; **40,870 (98%)** of these at health facilities; **202 (<1%)** at stand-alone HTC sites; and **829 (2%)** in a community-based testing. The 'yield' for new diagnoses was **4.9%** at health facilities, **4.1%** at stand-alone HTC sites and **3.0%** in community settings (excluding clients with a previous positive result from the denominator for all 3 settings).

5.2 HIV testing access type

527,445 (61%) of people tested were patients receiving provider-initiated testing and counselling (PITC); **329,274 (38%)** accessed voluntary testing and counselling, door-to-door, community-based testing, etc.; and **5,438 (1%)** came for testing with a *Family HTC Referral Slip* (FRS) that was issued to a family member at a prior HTC encounter. Based on a total of 31,242 FRS issued to index clients this quarter, the successful referral rate for family members was **17%** (5,438 /31,242). This is only slightly higher than in previous quarter (15%). Referral slips have remained under-utilized.

5.3 Age and sex distribution among HIV testing clients

Out of **862,157** people tested and counselled, **34%** were males and **66%** were females. **34%** of females were pregnant. The proportion of males (44%) to non-pregnant females (56%) was similar, implying gender balanced access to HIV testing services. Pregnant women have to be

[4] 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.

excluded from this comparison because testing among pregnant women is almost entirely provider-initiated and there is no comparable access route targeting males.

169,415 (20%) of all people tested accessed HTC with their partners (as a couple).

47% of all people tested and counselled were 25 years and above, **38 %** were between 15-24 years and **16%** were children below 15 years. **5,261 (<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: either at enrolment into pre-ART follow-up, or before starting ART if the test to confirm was not done in pre-ART. Children under 12 months starting ART with a positive DNA-PCR do not need another confirmatory test before starting ART, but all need a confirmatory rapid antibody test at age 12 and 24 months.

270,252 (31%) accessed HTC for the first time and **591,905 (69%)** were repeat testers. Based on the cumulative number of people who accessed HTC for the first time, a total of **6,506,896** people have been tested since introduction of the *first time HTC access* indicator in July 2007.

41,901 (4.9%) out of all clients received a positive result for the first time. Positive rapid test results among infants (**1,231**) and inconclusive test results (**2,375)** both accounted for **<1 %** of new results given to clients.

558,724 (94%) of 591,905 repeat testers reported a *last negative* result. **30,048 (5%)** 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 **282** the number of *previous positive* clients, indicating some misclassification or data errors. **29,783 (98%)** of 30,330 confirmatory test results were concordant positive and **547 (2%)** 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). This relatively high proportion 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 29,783 documented confirmatory positive results were 1,731 (6%) higher than the number of patients newly initiated on ART in the quarter (28,052). This is likely because the clients were either not eligible to start ART or were not ready to start ART at the time of the test.

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

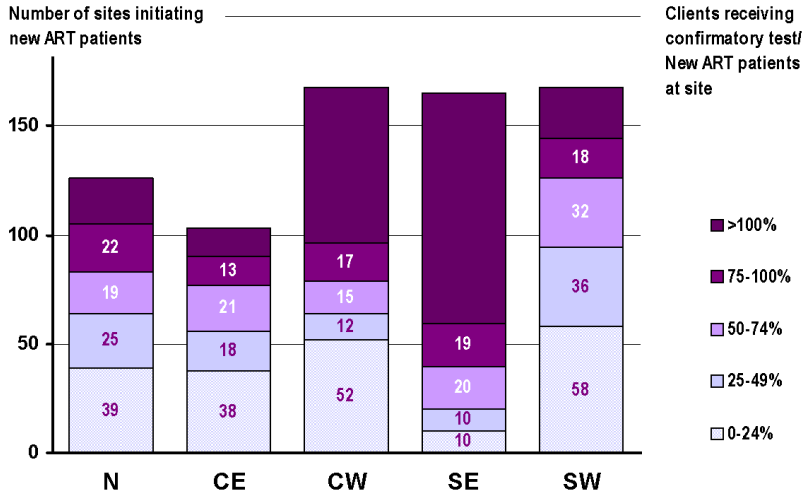


Figure 1 shows the number of ART sites by zone, stratified by the ratio of clients receiving confirmatory testing over the number of new ART patients. At 236 sites, the number of clients receiving confirmatory testing exceeded the number of new ART initiations. This was particularly common in the SE zone (106 sites). This may be an indication for weak linkage / ART uptake. However, at most sites in the other zones, the number of confirmatory tests was less than half of the number of new ART initiations, suggesting that confirmatory testing was not routinely implemented.

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). EID counsellors collect infant blood samples as dried blood spots on filter paper. Health facilities are requested to maintain 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.

527 (81%) of 653 sites with HIV exposed children in follow-up had collected and recorded at least 1 DNA-PCR sample during Q1 2016. A total of **9,792** 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 **4,186 (43%)** of these specimens and **2,098 (50%)** of these results had been communicated to the mother. The proportion of results received at the sites was **59%**, **46%** and **23%** for samples collected in January, February and March, respectively. A total of **142 (3%)** results received at the sites were positive.

The **8 laboratories** registered the **receipt** of **5,915** DNA-PCR samples that were collected during Q1 2016. This represents 60% of the 9,792 samples recorded in the logbooks at the sites. 5,156 (87 %) of the 5,915 registered samples arrived in the same quarter.

A total of **7,668** valid DNA-PCR results were dispatched from the labs in Q1 2016. **5,156 (67%)** of the dispatched results were from samples collected in Q1 2016, while 2,508 (33%) were from samples collected in the previous quarters. The median time between sample collection and dispatch of the result was **29 days**; 50% of results were dispatched between 19 and 53 days after sample collection.

3,487 (45%) of all results were from infants under 2 months old at the time of sample collection. 2,812 (37%) were 2-5 months, 975 (13%) were 6-11 months and 123 (2%) were 12-17 months. 123 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 271 samples.

Age at sample collection	Tot. Results	Positives	
<2 months	3,487	74	*2.1%*
2-5 months	2,812	81	*2.9%*
6-11 months	975	62	*6.4%*
12 months +	123	9	*7.3%*
(missing)	271	6	*2.2%*

232 (3.0%) 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	745	*10%*	18	*3%*
2-5 months	4,472	*60%*	100	*43%*
6-11 months	1,746	*23%*	90	*39%*
12 months +	208	*3%*	18	*8%*
(missing)	265	*4%*	6	*6%*
Total	7,436	***100%***	232	***100%***

Out of 232 positive results dispatched, only 18 (3%) were sent before the child was 2 months old. A total of 118 (51%) positive results were sent before the child was 6 months old and 208 (90%) were sent before the child was 12 months old. A total of 96 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 **46%** 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 **23,335** blood units were collected in Malawi during Q1 2016. MBTS collected **14,611 (63%)** 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 **8,724** units from replacement donors. **8,116 (93%)** of these units were screened for

at least the 3 key TTIs (HIV, HepB and syphilis) and **5,255 (65%)** of these were also screened for HepC and malaria. This means that a total of **22,727 (97%)** of all units collected this quarter were screened at least for HIV, HepB and syphilis. Based on the blood donor registers at the sites that collected blood from replacement donors, 70 units were screened for HIV and HepB only and 73 were screened only for HIV. 465 were screened with any other combination of tests for TTIs.

A total of **13,919** potential replacement donors were documented in the blood donor registers at the facilities and **8,724** (63%) 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, 78% for syphilis, 67% for malaria and 52% 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 **1,608** persons received PEP during Q1 2016. This is very similar to the previous quarter (1,593).

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 Q1.

Zone	Pre-ART		ART		Both patient groups	
	Tot. women	On Depo	Tot. women	On Depo	Tot. women	On Depo
NZ	503	**177** *35%*	34,248	**12,713** *37%*	34,751	**12,890** *37%*
CEZ	385	**108** *28%*	28,160	**7,027** *25%*	28,545	**7,135** *25%*
CWZ	3,702	**769** *21%*	71,678	**17,356** *24%*	75,380	**18,125** *24%*
SEZ	2,503	**626** *25%*	109,777	**33,130** *30%*	112,280	**33,756** *30%*
SWZ	4,946	**836** *17%*	114,850	**22,126** *19%*	119,797	**22,962** *19%*
Malawi	12,040	**2,516** *21%*	358,712	**92,352** *26%*	370,752	**94,868** *26%*

* 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 **94,868 (26%)** of 370,752 women in care received Depo-Provera from HIV clinics in Q1 2016. The northern Zone had achieved the highest coverage among women in pre-ART and ART. Patient coverage has slightly increased in this quarter. 631 (87%) of ART/PMTCT sites had stocks of Depo-Provera in April 2016 compared with 81% in January 2016.[5] 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.

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 Q1.

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	9,184	**7,027** *77%*	2,077	**1,969** *95%*	60,551	**58,685** *97%*	71,812	**67,681** *94%*	2,077	**1,917** *92%*
CEZ	8,393	**6,874** *82%*	1,822	**1,792** *98%*	49,057	**48,146** *98%*	59,272	**56,813** *96%*	1,822	**1,546** *85%*
CWZ	17,129	**13,514** *79%*	11,957	**9,555** *80%*	124,141	**121,513** *98%*	153,227	**144,583** *94%*	11,957	**8,050** *67%*
SEZ	32,087	**26,895** *84%*	10,493	**10,246** *98%*	177,476	**171,478** *97%*	220,056	**208,619** *95%*	10,493	**9,689** *92%*
SWZ	29,672	**26,194** *88%*	15,916	**13,868** *87%*	196,803	**190,136** *97%*	242,391	**230,198** *95%*	15,916	**12,883** *81%*
Malawi	96,465	**80,503** *83%*	42,265	**37,431** *89%*	608,028	**589,959** *97%*	746,758	**707,893** *95%*	42,265	**34,086** *81%*

Table 4 shows that **707,893 (95%)** of 746,758 all patients in care were on CPT at the end of Q1 2016.

[5] 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.

590, 855 (97%) of all patients retained on ART were screened for TB at their last visit before end of March 2016. As of that visit, **3,203 (1%)** patients were new TB suspects and had presumably been referred for examination by a clinician, for TB investigations. **899 (<1%)** patients had confirmed TB (clinical or lab based). Out of these, **839 (93%)** were confirmed to be on TB treatment and **60 (7%)** had not yet started or had 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)		**17,173**	**3%**
ICF done		**590,855**	**97%**
	TB not suspected	**586,753**	99%
	TB suspected	**3,203**	1%
	TB confirmed	**899**	0%
		TB confirmed, not on treatment	**60**	7%
		TB confirmed, on TB treatment	**839**	93%

10.2 Isoniazid Preventive Therapy (IPT)

All pre-ART patients with a negative screening outcome for TB symptoms are eligible for IPT. The first (large scale) distribution of isoniazid and pyridoxine for the HIV programs reached the sites during July 2012. **34,086 (81%)** of 42,265 patients retained in pre-ART were on IPT by the end of March 2016. Isoniazid was in stock at 606 facilities during the April 2016 supervision visit.

11 HIV-Related Diseases

Table 5 shows the number of patients treated for key HIV-related indicator diseases. **4,024** patients were started on TB treatment this quarter and HIV status was ascertained for **3,858 (96%)**. **2,084 (54%)** of these were HIV positive and **1,592 (76%)** of all HIV positives were already on ART when starting TB treatment. The Diflucan (fluconazole) donation program has received renewed attention and significant stocks of fluconazole were distributed to all sites in November 2012. In Q1 2016, **1,090** and **977** patients received Diflucan for acute cryptococcal meningitis and oesophageal candidiasis, respectively. **284** 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 Q2	4,288	4,074 *95%*	2,200 *54%*	1,513 *69%*	265	459	599
2015 Q3	4,346	3,973 *91%*	2,230 *56%*	1,573 *71%*	323	525	808
2015 Q4	3,927	3,747 *95%*	2,033 *54%*	1,663 *82%*	294	972	1,233
2016 Q1	4,024	3,858 *96%*	2,084 *54%*	1,592 *76%*	284	1,090	977

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

12,296 HIV exposed children were newly enrolled into follow-up during Q1 2016; **8,329 (69%)** of these were under the age of 2 months. This represents timely enrolment for **95%** of the 8,784 known HIV exposed children discharged from maternity this quarter. The total number of new enrolments (12,296) exceeds by 3,512 (40%) the total number of known HIV exposed children discharged from maternity (8,784). 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 **8,533** infants in the **2-month age cohort**. **3,017 (35%)** had received a DNA-PCR result. **77 (3%)** of these were confirmed HIV infected. An additional **10** infants were diagnosed with *presumed severe HIV disease,* which means that a total of **87** infants were eligible for ART. **47 (54%)** of these had started ART. The proportion of positives starting ART is lower than the previous quarter (76%). Out of the entire 2-month age cohort, **7,819 (93%)** were retained in exposed child follow-up, **47 (<1%)** had started ART and **9 (<1%)** were discharged confirmed uninfected[6]. **27 (<1%)** were known to have died and **478 (7%)** had been lost to follow-up.

There were **9,970** children in the **12-month age cohort**. Current HIV infection status was known for **5,256 (53%)** children (DNA-PCR or rapid antibody test) and **179 (3%)** of these were confirmed HIV infected. **11 (<1%)** additional children had been diagnosed with *presumed severe HIV disease,* which means that a total of **190** children were eligible for ART. **174 (92%)** had started ART. Out of the entire age cohort, **7,256 (75%)** were retained in exposed child follow-up, **174 (2%)** had started ART and **162 (2%)** were discharged confirmed uninfected.[6] **2,019 (21%)** were lost to follow-up and **93 (1%)** were known to have died.

There were **9,156** children in the **24 month age cohort**. Current HIV infection status was known for **5,100 (56%)** children (DNA-PCR or rapid antibody test) and **251 (5%)** of these were confirmed HIV infected. **18** additional children had been diagnosed with *presumed severe HIV disease,* which means that a total of **269** children were eligible for ART. **231 (86%)** of these had started ART. Out of the entire age cohort, **631 (7%)** were retained in exposed child follow-up, **231 (3%)** had started ART and **4,704 (53%)** were discharged confirmed uninfected. **3,191 (36%)** were lost to follow-up and **145 (2%)** were known to have died.

Confirmed HIV-free survival at age 24 months in this quarter remained implausibly low at **53%.** This was related to the fact that only 56% in this cohort had a known HIV status. 4,056 (44%) children were classified as '*current HIV infection status unknown'* and many of these may be among the 3,191 children lost to follow-up and the 145 children who had died. However, 631 (7%) 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. There are still problems with scheduled HIV testing (and documentation of test results) at 6 weeks, 12 and 24 months of age.

[6] 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

A total of **7,047** patients were newly registered for pre-ART follow-up in Q1 2016. **625 (8%)** of these were children aged 5-14 years. The number of new pre-ART enrolments slightly increased from the previous quarter (5,650 total, 441 children). Several sites had already established pre-ART services before July 2011 and the cumulative number of pre-ART patients ever registered was **215,409**.

13.2 Cumulative Pre-ART Follow-up Outcomes

42,265 (21 %) of all patients ever registered were retained in pre-ART follow-up by the end of March 2016; **111,419 (54 %)** had started ART; **50,097 (24%)** had been lost to follow-up; **1,962 (1%)** were known to have died. The proportion of patients starting ART is bound to increase in the cumulative pre-ART cohort analysis over time. Based on a subtraction of cumulative outcomes from the previous quarter, **6,436** pre-ART patients started ART during Q1 2016; **1,132** were lost to follow-up and **65** died. The quarterly number of died is lower than in the previous quarter, indicating challenges with completeness and accuracy of reporting.

CPT coverage among pre-ART patients was **89%** in Q1 2016 and IPT coverage increased slightly to **81%**. **2,516 (21%)** of 12,040 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.

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 *Option B+* 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. ARV 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).[7]

14.2 ARV Coverage among Pregnant / Breastfeeding Women and Exposed Infants

11,715 (87%) of the estimated 13,500 HIV infected pregnant women in Malawi this quarter were on ART. This is based on **7,074** [8] women at maternity who were already on ART when getting pregnant and **4,641** [9] women who newly initiated ART in pregnancy. This is an increase in ART coverage from 75% in the previous quarter.

An additional **1,864** [10] 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 **6,505**. 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. **8,332** infants were confirmed to have started NVP prophylaxis at maternity.

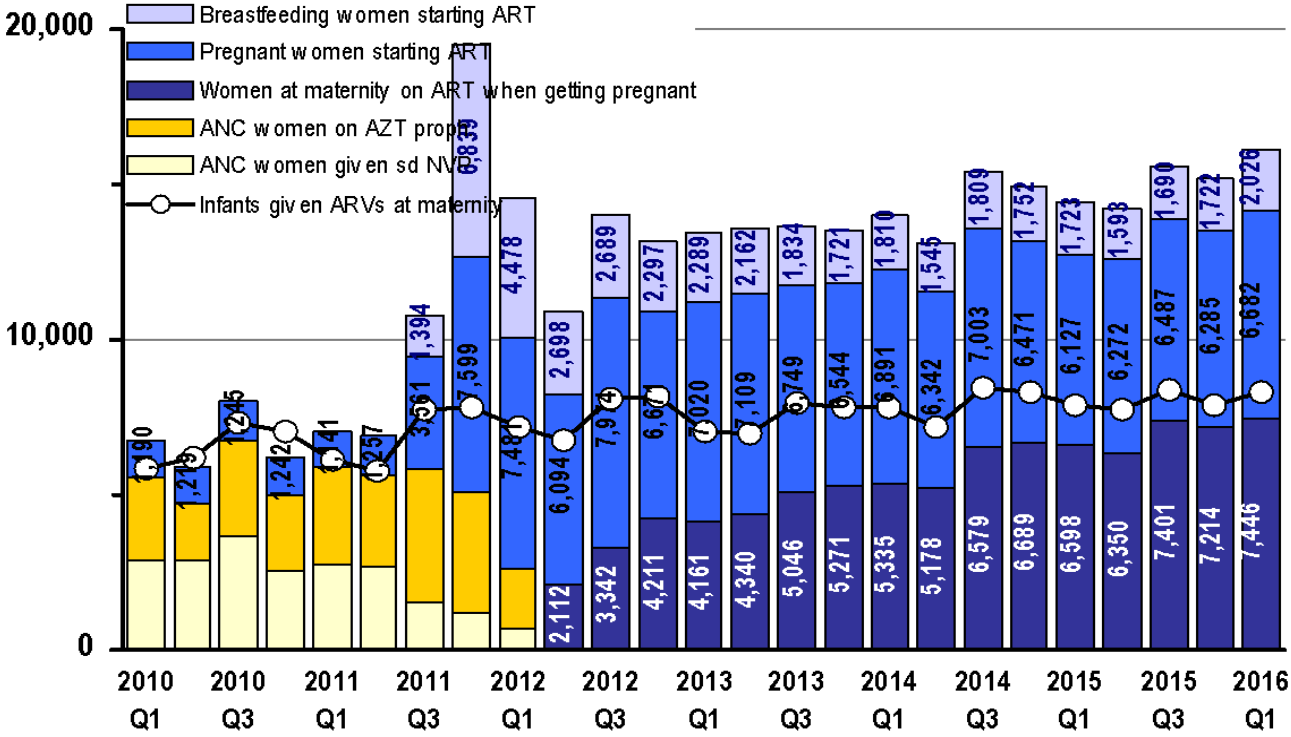
Figure 2 shows the transition from prophylactic ARV regimens for HIV infected mothers to universal ART under ***Option B+*** (registration data; not adjusted as above). The (less effective)

[7] 2016 Spectrum estimates.
[8] 7,446 women who started ART before pregnancy admitted at maternity; reduced by 5% to adjust for double-counting of 6,016 referrals among 123,203 total admissions.
[9] 6,629 women registered at ART clinics who were pregnant at the time of starting ART; a) 8% are discounted to adjust for double-counting of transfers based on 602 of 8,000 women who transferred within 12 months of registration (12 month Option B+ survival analysis); b) 23.9% are discounted to account for presumed failed ART initiations based on 1,840 of 7,699 women lost to follow-up within 6 months of registration (6 month Option B+ survival analysis).
[10] 2,026 women registered at ART clinics who were breastfeeding at the time of starting ART; reduced by 8% to adjust for double-counting of transfers based on 602 out of 8,000 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:

148,910 women attended ANC for their first visit between January and March 2016. This is 89% of the estimated 166,750 pregnant women in the 2016 population during one quarter.[11] **139,277 (94%)** of women in this cohort had their HIV status ascertained at the first visit. Out of these, **12,449 (9%)** presented with a valid previous test result and **126,828 (91%)** received a new test. A total of **10,353 (7%)** of women were found HIV positive: **5, 582 (54%)** of these from a documented previous test and **4,771 (46%)** from a new test. **9,734 (94%)** of all positives were on ART: **5,251 (54%)** of these were already on ART when starting ANC and **4,483 (46%)** newly started ART at their first ANC visit. Out of these, **3,792 (86%)** were in their 1st or 2nd trimester and **691 (14%)** were in the 3rd trimester of pregnancy.

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

Outcome cohort:

156, 222 women had started ANC between July and September 2015 and their outcomes were reported between January and March 2016. Only **36,414 (23%)** of women in this cohort attended the recommended minimum of 4 focussed ANC visits.

147,765 (95%) of the outcome cohort had their HIV status ascertained at least once in the course of ANC. This is higher than previous quarter (92 %). **11,456 (8 %)** presented with a valid documented previous HIV test result and **136,309 (92 %)** received a new HIV test result at ANC. A total of **11,567 (8.5%)** women were found HIV positive. This is consistent with the latest Spectrum projections (8.1% HIV prevalence among pregnant women in 2016).[7]

10,918 (94 %) of (known) HIV infected women were on ART by the end of ANC. This represents **87%** coverage of the estimated 13,500 HIV positive pregnant women per quarter at the population level. Of the **10,918** ANC women who were known to receive ART, **5,726 (52%)** were already on ART when starting ANC, **4,273 (39%)** initiated before 28 weeks of pregnancy and **919 (8%)** initiated during the last trimester of pregnancy. **10,804 (93%)** of HIV infected women at ANC were on Cotrimoxazole Preventive Therapy. **10,398 (90%)** of known HIV infected women attending ANC received the infant dose of ARVs (nevirapine syrup) to take home.

14.3.2 Syphilis Screening

54,969 (35%) of women in the outcome cohort were tested for syphilis and **1,089 (2%)** were syphilis positive. The low testing rate probably explains the higher (2%) than expected proportion (<1%) of positives as the testing was likely selective of those suspected to be positive.

14.4 HIV Services at Maternity

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

Between January and March 2016, **117,187** women were admitted for delivery to maternity; **6,016** of these were referred to another facility before delivery, resulting in **123,203** total admissions to maternity during Q1 2016. Out of all admissions, **113,405 (95%)** delivered at health facilities, while **6,146 (5%)** had already delivered before reaching a facility. The **113,405** facility deliveries represent **68%** 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.[12]

A total of **110,907 (95%)** deliveries were conducted by skilled birth attendants, **553 (<1%)** by paramedical staff and **5,892 (5%)** were not attended by any of the above (probably mainly among women who delivered before reaching maternity). **14,256 (12%)** of women developed obstetric complications. The most common leading complications were obstructed / prolonged labour (**4,707** cases) and post-partum haemorrhage (**1,586** cases). A total of **119,551** babies were born, **115,370 (97%)** were singletons and **4,181 (3%)** were

[12] 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 **117,619 (98%)** live births and **1,932 (2%)** stillbirths. **116,487 (99%)** of babies born alive were discharged alive and **1,132 (1%)** died before discharge. **117,270 (>99%)** of women were discharged alive and **82 (<1%)** women died before discharge, which is equivalent to a maternal mortality ratio of **70 per 100,000** live births among women attending maternity.

14.4.1 HIV Ascertainment at Maternity

120,777 (98%) women had their HIV status ascertained at maternity. Out of these, **116,449 (96%)** presented with a valid previous HIV test result and **4,328 (4%)** received a new test. A total of **9,408 (8%)** women were HIV positive and **111,369 (92%)** were negative. The **120,777** women whose HIV status was ascertained at maternity represent **73%** of the expected 166,750 women delivering in the population.

HIV exposure status was ascertained for **114,549 (98%)** out of 116,487 babies born and discharged alive. **8,784 (8%)** of these were born to a known HIV positive mother.

14.4.2 ARV Coverage at Maternity

A total of **9,248 (98 %)** of known HIV infected women admitted to maternity received ART. Out of these, **7,446 (81%)** had started ART before pregnancy, **991 (11%)** initiated ART during the 1st or 2nd trimester, **664 (7%)** initiated during the 3rd trimester and **147 (2%)** initiated ART at maternity.

A total of **8,332 (95%)** of 8,784 infants who were known HIV exposed and discharged alive started daily NVP prophylaxis at maternity. This represents **56%** coverage of the estimated 14,926 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 Q1 2016

By the end of March 2016, there were **724 static ART sites** in Malawi, managed by government, mission, NGOs and the private sector. Out of these, **94** were ART facilities in the private sector, charging a nominal MK500 per monthly prescription of drugs per patient.

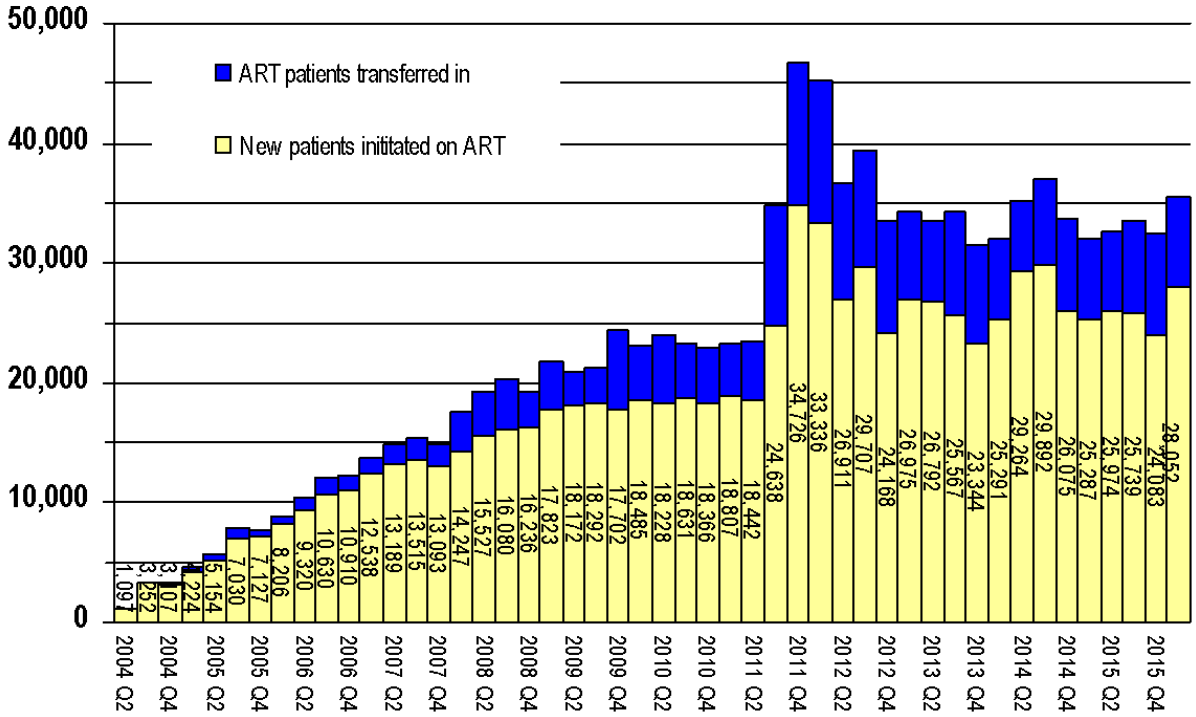
Implementation of the Malawi Integrated Clinical HIV Guidelines started in July 2011, triggering a massive surge in new ART initiations (see **Figure 3**). **28,052** patients initiated ART in Q1 2016 and **7,029** patients were registered as a transfer in (already on treatment; 20% out of all 35,478 clinic registrations). These are higher than previous quarter's numbers.

Among all new registrations **37%** were males, **63%** were females. **6,682 (30%)** of females were pregnant. **6,629** (99.2%) of pregnant women were started under ***Option B+*** (in WHO stage 1 or 2 with unknown CD4 or CD4 above 500), while 53 were in more advanced stage of HIV infection. An additional **2,026** women in WHO stage 1 or 2 were started because of

breastfeeding, bringing the total number of women registered as started under ***Option B+*** [13] to **8,655**.

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 **21,680 (61%)** of all patients registered started in WHO stage 1 or 2 and **12,035 (56%)** of these started due a low CD4 count. **11,791 (33%)** of patients registered started in WHO stage 3 and **1,549 (4%)** started in stage 4.

3,223 children were registered at ART sites in Q1 2016. **776 (24%)** of these were registered under the expanded policy of universal ART for children aged 12-59 months in WHO stage 1 or 2, independent of CD4 count. **127 (4%)** of children started ART with presumed severe HIV disease. This is lower than the previous quarter (149). **96** infants in WHO stage 1 or 2 started due to confirmed HIV infection through DNA-PCR, which is slightly higher than the previous quarter (93). Early paediatric ART access has remained below expectations, but the relatively low number is consistent with reduced transmission rates due to Option B+: considering that 8,748 HIV exposed infants were identified at maternity and assuming a 2% transmission rate among the 95% of HIV positive mothers at maternity who received ART (and 20% transmission in the 5% who did not receive ART)[14], only about 257 of these known HIV exposed infants may have been infected perinatally during Q1 2011. However, considering the projected 1,160

[13] Universal ART for all HIV infected pregnant and breastfeeding women in WHO stage 1 or 2, independent of CD4 count

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

new infant HIV infections in the 2016 population per quarter[7], early infant treatment coverage remains low at an estimated **8%** (96 / 1,160). The most significant bottleneck for early infant treatment remains the identification of HIV infected pregnant / breastfeeding women.

831 (2 %) out of all ART clinic registrations were patients with TB: **530 (1%)** had a current and **301 (1%)** a recent history of TB. **284 (1%)** of patients registered had Kaposi's sarcoma.

15.2 Cumulative ART Registrations up to March 2016

By the end of March 2016, there were a cumulative total of **1,127,791** clinic registrations, representing **901,588 (80%)** patients who newly initiated ART and **213,629 (19%)** patients who transferred between clinics. **12,574 (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 **33,557** (3.0%) of total patient registrations.

15.3 ART Outcomes

611,031 patients were alive on ART by the end of March 2016. This is equivalent to **62% ART coverage** among the estimated 979,000 HIV positive population in Malawi in 2016. The number of patients on ART includes an estimated 3,003 patients in transit between sites (50% of the 6,005 patients newly registered as transferred out at sites across the country).

Out of the **901,558** patients ever initiated on ART, **611,031 (68%)** were retained alive on ART, **83,664 (9%)** were known to have died, **220,156 (24%)** were lost to follow-up and **3,669** (<1%) were known to have stopped ART.

An estimated **561,359** adults and **49,672** children (<15 years)[15] were alive on ART by the end of March 2016. This represents **61%** (49,672 / 81,000) and **63%** (561,359 / 898,000) ART coverage among children and adults, respectively.

[15] 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 dosing. 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 paediatric dosing weight threshold. For Q1 2016, the number of children aged <15 years is estimated at 1.76 times the number of children on paediatric dosing.

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

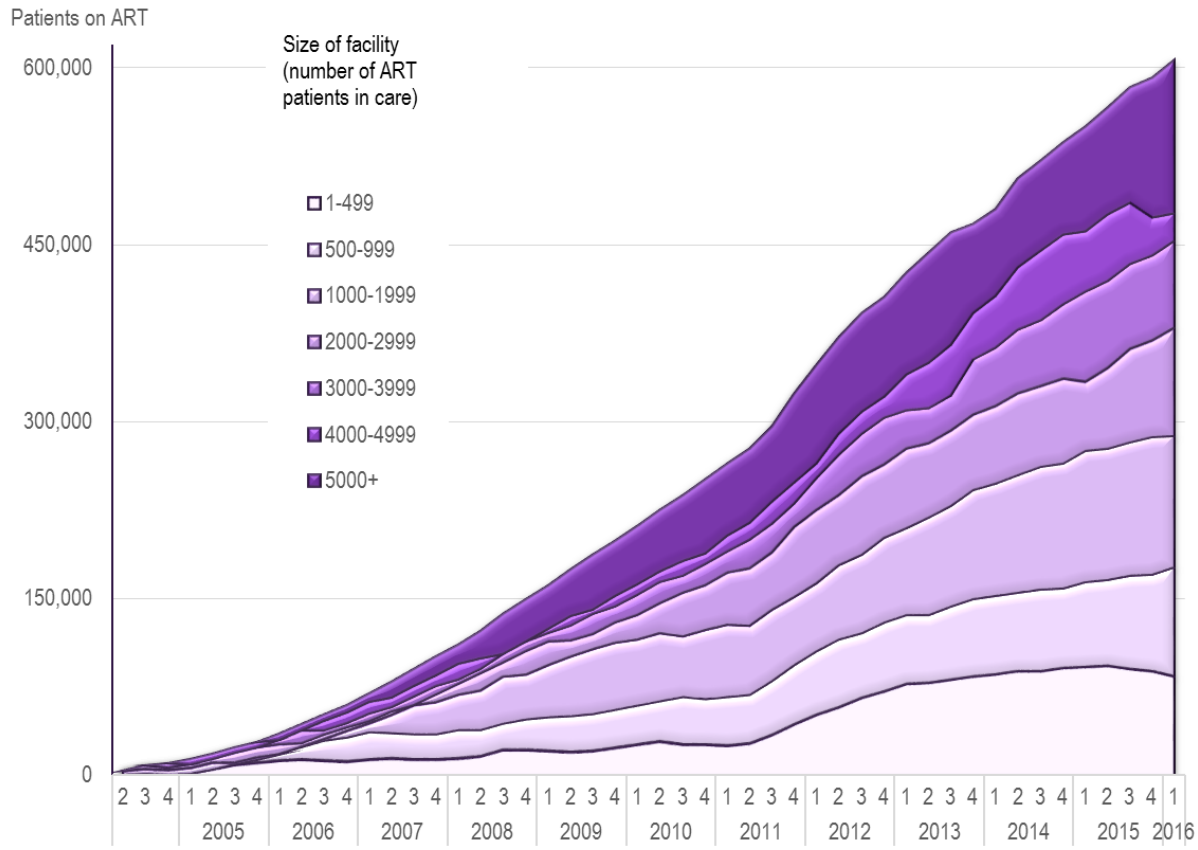


Figure 4 shows the increase of patients alive on ART by the end of each quarter. The number **increased by 15,845** patients in Q1 of 2016. **Figure 4** also illustrates the ongoing decentralization of Malawi's ART program. From Q3 2011, the greatest increase in ART patient numbers was seen at sites with fewer than 500 patients alive on ART. By the end of September 2015, **48%** 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)

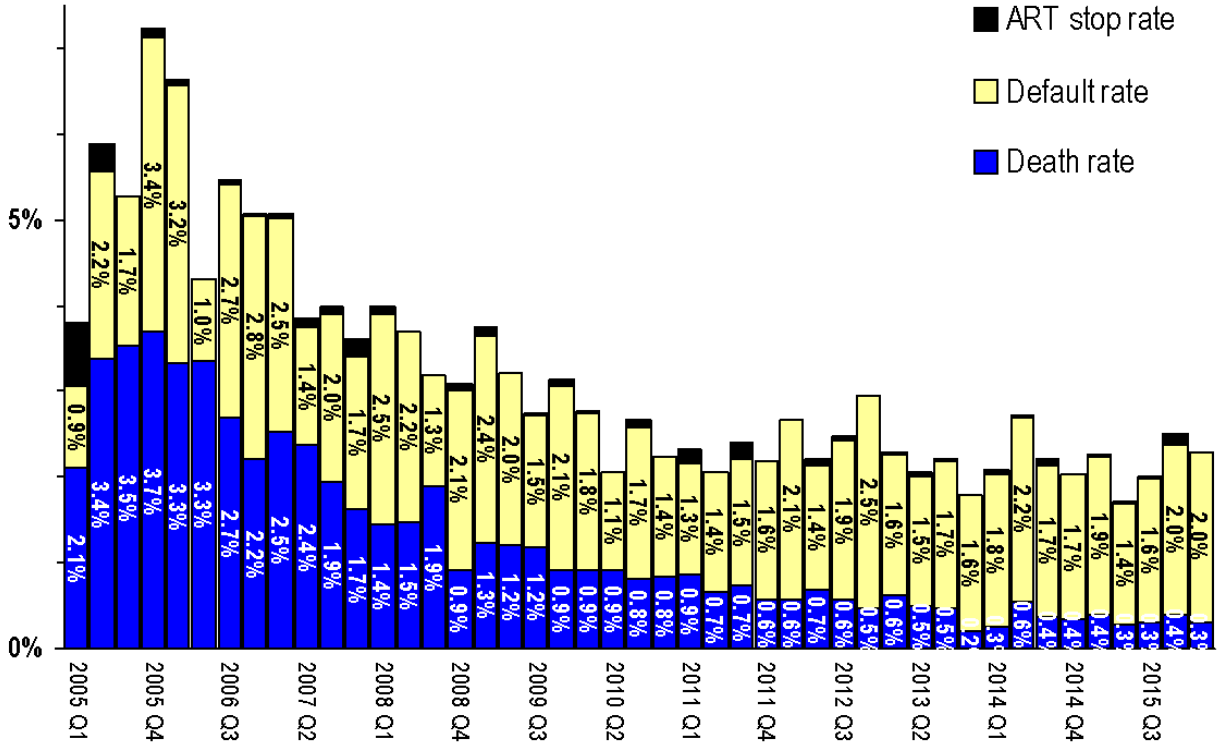


Figure 5 shows the considerable decrease of ART drop-out rates since the start of the national program. There were **2,193** new deaths, **12,188** new defaulters in Q1 2016. The number of stops decreased compared to Q4 2015. This translates into a quarterly death rate of **0.3%** and a defaulter rate of **2.0%** among the patients alive and on treatment in this quarter. These rates were similar to the previous quarter. Based on previous operational studies, about half of the patients in stage 3 and 4 who are classified as lost to follow-up are thought to have died. There is also an indication that 10-15% of pregnant women who were registered as 'initiated on ART' under Option B+ may have never actually started taking ARVs due to inadequate preparation at ANC. Importantly, the ascertainment of loss to follow-up requires updating of patient treatment cards after analysis of the most recent dispensing visit. Any lack in rigour in this process will lead to a misclassification of patients who have been lost to follow-up as 'retained alive on ART'.

By end of March 2016, a cumulative **83,664 (9%)** patients were known to have died **220,156 (24%)** were lost to follow-up and **3,669** (**<1%**) were known to have **stopped ART.**

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)

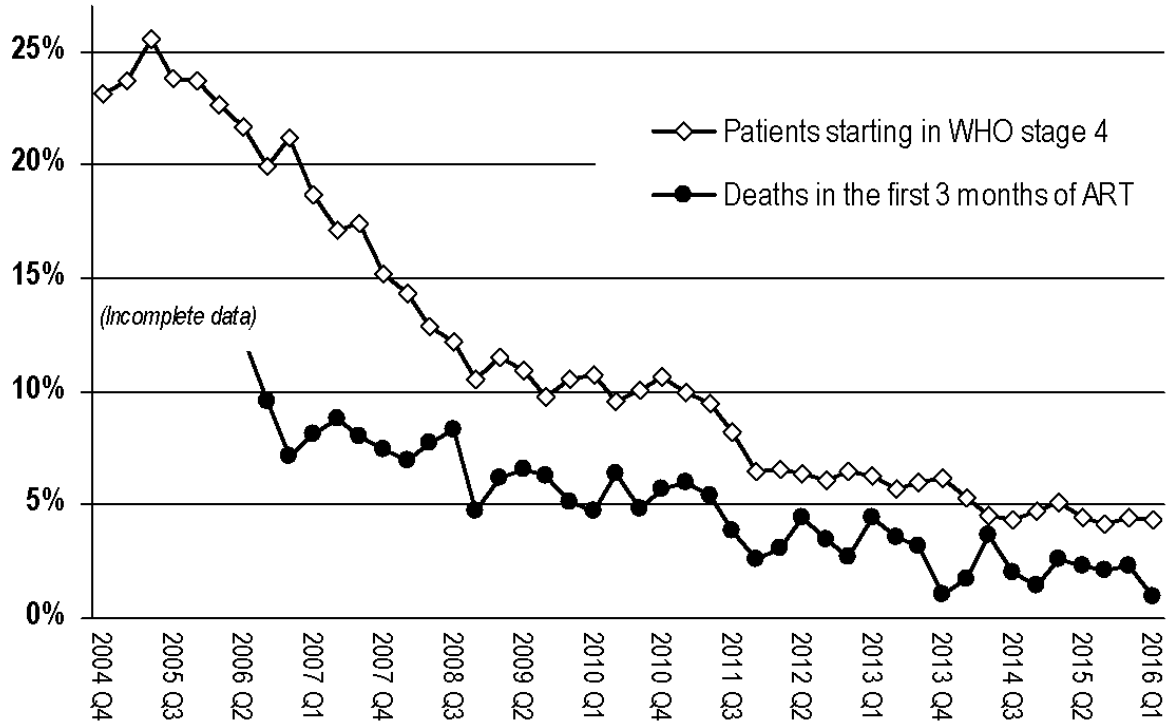


Figure 6 shows the considerable decline in **early mortality** since the start of the program. In Q2 of 2006 11% of new patients died within the first 3 months of ART initiation. There has been a remarkable decline in early mortality and the lowest point thus far has been reached in Q1 2016 at **0.98%**. The decrease in early mortality is probably mainly due to earlier ART initiation (patients in WHO stage 2 with a CD4 count below the threshold or in stage 3). It correlates well with the decline in the proportion of patients starting ART in WHO clinical stage 4 from 25% in 2005 Q2 to less than **5%** in Q1 2016. Slight fluctuations in the calculated early mortality rates are mainly due to inconsistent classification of month of death at the sites with electronic patient record systems. The 2014 guidelines have led to further reduction in early mortality, as more patients are started in WHO stage 1 and 2 (CD4 threshold for eligibility <500; universal ART for HIV infected pregnant and breastfeeding women and children under 5 years).

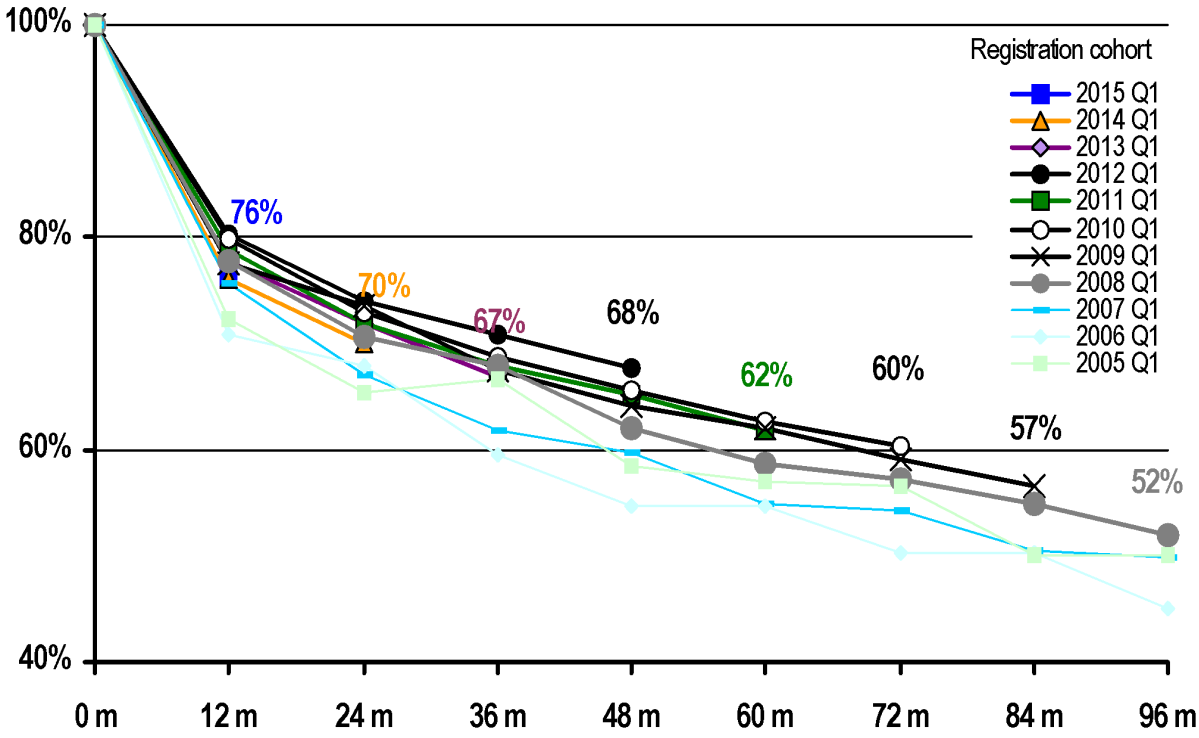
15.4 ART Cohort Survival Analysis

A 12, 24, 36, 48, 60, 72, 84 and 96-month **'cohort outcome survival analysis'** was conducted for patients registered in Q1 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 Q1 2015. A further subgroup analysis was done for women who started ART under ***Option B+*** during Q1 2013, Q1 2014, Q1 2015 and Q3 2015. **74% of adults** and **77% of children** were retained alive on ART after 12 months on treatment. This is similar to the previous quarter for children and lower for adults. Both 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.[16]

Figure 7 shows the continuous improvement of long-term treatment outcomes over time. **61%** and **54%** of patients registered 5 and 7 years ago had been retained alive on ART.

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 **8,204** women registered as having started ART under *Option B+* in Q3 2015. [17] This number is 37 (0.5%) higher than the number of women that registered as having started ART of 8,167. This discrepancy is likely due to errors in data abstraction. The 8,204 represents 505 (6%) women who transferred out and are therefore double counted and **7,699 (94%)** patients not transferred. **5,796 (75%)** of these were retained at 6 months after registration. **1,840 (97%)** of those not retained were lost to follow-up, **23 (1%)** were known to have stopped ART and **40 (2%)** were known to have died.

12-month group cohort survival outcomes were known for **8,000** women registered as having started ART under *Option B+* in Q1 2015. [17] This number is 194 (2.5%) higher than the number of women that registered as having started ART of 7,806. This discrepancy is likely due to

[16] 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

[17] 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.

errors in data abstraction. The 8,000 represents **602 (8%)** women who transferred out and are therefore double counted and **7,398 (92%)** patients not transferred. **5,114 (69%)** of these were retained at 12 months after registration. **2,180 (95%)** of those not retained were lost to follow-up, **33 (1%)** were known to have stopped ART and **71 (3%)** were known to have died.

24-month group cohort survival outcomes were known for **8,720** women registered as having started ART under *Option B+* in Q1 2014. [17] This number is 13 (0.1%) higher than the number of women that registered as having started ART of 8,707. Similar to the 12 months cohorts, the discrepancy is likely due to data abstraction inaccuracies. The 8,720 number represents **942 (11%)** women who transferred out and are therefore double counted and **7,778 (89%)** patients not transferred. **5,137 (66%)** of these were retained at 24 months after registration. **2,497 (95%)** of those not retained were lost to follow-up, **53 (2%)** were known to have stopped ART and **91 (3%)** were known to have died.

1,810 (21%) of the women in the 24-month Option B+ survival cohort had initiated ART in the breastfeeding period and **1,718 (20%)** 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 **69% and 66% retention rate at 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 is slightly higher than the previous quarter. 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	8,204	100%
Transfers out (double counted)	505	6%
Total not transferred out (patients in cohort)	7,699	94%
Total alive on ART	5,796	75%
Total not retained	1,903	25%
Defaulted	1,840	97%
Stopped ART	23	1%
Died	40	2%

12 month survival OptionB+

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations	8,000	100%
Transfers out (double counted)	602	8%
Total not transferred out (patients in cohort)	7,398	92%
Total alive on ART	5,114	69%
Total not retained	2,284	31%
Defaulted	2,180	95%
Stopped ART	33	1%
Died	71	3%

24 month survival OptionB+

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations	8,720	100%
Transfers out (double counted)	942	11%
Total not transferred out (patients in cohort)	7,778	89%
Total alive on ART	5,137	66%
Total not retained	2,641	34%
Defaulted	2,497	95%
Stopped ART	53	2%
Died	91	3%

36 month survival OptionB+

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations	10,229	100%
Transfers out (double counted)	1,274	12%
Total not transferred out (patients in cohort)	8,955	88%
Total alive on ART	5,832	65%
Total not retained	3,123	35%
Defaulted	2,910	93%
Stopped ART	53	2%
Died	160	5%

15.4.1 Secondary outcomes of patients retained on ART

Secondary outcomes are known for the **608,028** patients alive on ART who remained at their sites at end of the quarter.

ART Regimens

599,315 (99%) of patients were on first line regimens. The number of patients on second line regimens increased by **468** from 7,769 in Q4 to **8,237** this quarter. **476 (<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, **26,884 (4%)** were on paediatric formulations and **25,796 (96%)** of these were on the standard first line for children (regimen 2P: AZT/3TC/NVP). By the end of March 2016, **532,156 (93%)** of patients on adult first line were receiving regimen **5A** (tenofovir / lamivudine / efavirenz). **28,794 (5%)** were on regimen 2A (zidovudine / lamivudine / nevirapine), which was the main alternative regimen for patients with stavudine side-effects before transition to regimen 5A and **918 (<1%)** were on regimen 1A (stavudine / lamivudine / nevirapine).

Adherence to ART

Pill counts and the number of missed doses were documented for **601,379 (99%)** out of all patients retained on ART and **545,347 (91%)** of these were classified as >95% adherent in Q1 2016. Manual estimation of adherence from pill counts is practically difficult and classification can be misleading. The ART program has switched to a direct evaluation of doses missed in 2010 to improve on accuracy of adherence assessment and plausible adherence levels are recorded with this method. However, there have also been persistent challenges with the analysis of adherence levels at sites with Electronic Data Systems (EDS) and adherence data from several of these sites could not be included in this report.

ART Side Effects

581,521 (96%) patients on ART had information on drug side effects documented at their last clinic visit before end of March 2016. This is an increase from the previous quarter (93%). **8,030 (1%)** of patients with information had documented side-effects. The prevalence of side effects seems to have stabilized at very low levels following the full transition to regimen 5A (tenofovir / lamivudine / efavirenz) that started in July 2013.

15.5 Viral Load (VL) Monitoring

The National Treatment Program has started rolling out routine VL monitoring for patients on ART to facilitate early detection of treatment failure and timely switching to second line ART. Routine VL monitoring is scheduled at 6 months after ART initiation, at 2 years and every 24 months thereafter. Additional targeted VL testing may be carried out for patients with clinically suspected treatment failure. During Q1 2016, **9** laboratories in the national program provided VL testing for patients enrolled at the respective facilities and associated sites. 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.

41,508 VL results were dispatched to **503** sites between January and March 2016. Half of these sites received fewer than 35 results and only one quarter of sites received 100 or more.

5,538 (13%) of 41,508 samples processed were plasma and **34,426 (83%)** were DBS. For 1,544 results, the specimen type was not specified.

Lab	Samples Processed				Turn-around Time (Days)§
	Plasma	DBS	Oth/unk	Total	
DREAM Blantyre	1,553	604	4	**2,161**	**5**
DREAM Balaka	541	808	269	**1,618**	**56**
Kamuzu CH	2,447	2,354	0	**4,801**	**84**
Mzimba DH	0	2,296	15	**2,311**	**34**
Mzuzu CH	0	3,678	1,239	**4,917**	**53**
Partners in Hope	874	4,939	0	**5,813**	**32**
QUECH	0	9,629	1	**9,630**	**63**
Thyolo DH	123	2,393	4	**2,520**	**48**
Zomba CH	0	7,725	12	**7,737**	**68**
Total	**5,538**	**34,426**	**1,544**	**41,508**	**55**

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

Queen Elizabeth CH lab achieved the highest outputs, contributing 23% of all results this quarter. The median interval between sample collection and printing of results was **55 days** at the national level, ranging from **5 days** at DREAM Blantyre to **84 days** at Kamuzu CH. The most significant delays occurred between sample receipt and processing in the lab (median 26 days), while on average only 11 days elapsed between sample collection and receipt in the lab.

Reason	0-999		1000-4999		*5000+*		*Total*
Routine	**36,559**	*89%*	**1,219**	*3%*	**3,327**	*8%*	**41,105**
Targeted	**130**	*61%*	**20**	*9%*	**62**	*29%*	**212**
Other/unk	**122**	*64%*	**11**	*6%*	**58**	*30%*	**191**
Total	**36,811**	*89%*	**1,250**	*3%*	**3,447**	*8%*	**41,508**

41,105 (99%) of all VL samples were classified as *routine scheduled.* This is equivalent to **55%** of the estimated 75,000 ART patients passing a VL monitoring milestone this quarter. **212 (<1%)** of samples were classified as *targeted (suspected treatment failure / repeat)* and for **191 (<1%)** the reason for the sample was 'other' or not specified. **36,811 (89%)** of all results were below 1,000 copies/ml. The proportion of results with 5,000+ copies was higher among the *unspecified* samples (30%) and those with *targeted* reason (29%), compared with 8% among *routine* samples.

The time on ART was entered for only **5,097 (12%)** of 41,508 routine samples registered on the LIMS and only **1,755 (34%)** of these were drawn on schedule (from 1 month before to 3 months after a VL milestone). The proportion of patients with VL < 1000 was **88%, 87%, 87%, 83%, 92%** and **81%** 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 (**86%**) or those with unknown timing (**83%**).

Patient age was recorded for all routine monitoring samples. Among these, 4%, 6%, 12%, 33% and 45% were from the age groups 0-9, 10-19, 20-29, 30-39 and 40+ years. Viral suppression rates (VL<1000/ml) were significantly lower among children (0-9 yrs: **62%**) and adolescents (10-19 yrs: **67%**) compared with adults (**87%**, **88%** and **90%** for the age groups 20-29, 30-39, 40+ years, respectively).

Given the relatively low access to VL monitoring (estimated 55% of all ART patients due for VL monitoring this quarter), the measured **89% viral suppression rate** may not be representative for the entire national ART cohort. With generally limited access to testing, the VL samples analyzed this quarter may over-represent patients with poor adherence and/or treatment failure. Conservatively, the national viral suppression rate can be estimated as **543,818** (89%) of 611,031 patients on ART, which is equivalent to **56%** of the total 979,000 HIV infected population.

16 TB / HIV Management

Approximately **93%** of HIV infected TB patients were receiving ART in Q1 2016. This estimate is based on the following triangulation of TB and ART program data:

TB Program Data: A total of **4,024** TB patients were registered during Q1 2016. Assuming an average HIV prevalence of 60% among TB patients, **2,414** TB patients were HIV positive and therefore in need of ART. Given that **1,592** TB patients registered were already on ART at the time of starting TB treatment, 2,414 – 1,592 = **822** TB patients needed to initiate ART.

ART Program Data: An estimated **657** patients[18] started ART with a current or recent episode of TB in Q1 2016. This is **80%** (657 of 822) of the TB patients who needed to start ART. This means that a total of 1,592 + 657 = **2,249 (93%)** of the estimated 2,414 HIV infected TB patients were receiving ART in Q1 2016.

[18] 21% of the 831 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 program report *

TB clinic registrations

Total TB patients registered	4,024	100%

HIV status ascertainment

HIV status not ascertained	166	4%
HIV status ascertained	3,858	96%
HIV negative	1,774	46%
HIV positive	2,084	54%
Already on ART	1,592	76%
Not on ART when starting TB treatment	492	24%

TB / ART program triangulation *

HIV-burden among TB patients (estimated)

HIV negative (est. 40%)	1,610	40%
HIV positive (est. 60%) in need of ART	2,414	60%
Not on ART	165	7%
Total on ART (coverage)	2,249	93%
Already on ART (TB prog)	1,592	71%
Started ART within 24m of TB diagnosis (ART prog)	657	29%
ART initiations with current TB (ART prog)	419	64%
ART initiations after recent TB (ART prog)	238	36%

17 STI Treatment

STI reports were actively collected during the Integrated HIV Program Supervision exercise for the 10th 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 664 out of 928 facilities offering STI management according to the *2013-14 Service Provision Assessment*[19] in Malawi. The site-level reports included here may therefore only represent 72% 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.

17.1 Access to STI treatment and coverage

Based on the data collected at the facilities, a total of **55,938** STI cases were treated in Q4 2015. Considering the 70% site-level completeness of reporting, this number is estimated to represent a total of **79,911** STI cases treated. This is equivalent to **81% STI treatment coverage** of the expected 98,600 STI cases in the population.

Out of **59,551** documented clients treated, **23,956** (40%) were male and **35,595** (60%) were female. **4,471** (13%) of female STI clients were pregnant. **39,691** (67%) clients were 25 years and above, **14,385** (24%) were 20-24 years and **5,475** (9%) were under 20 years old.

[19] 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

17.2 Client Type and STI History

53,290 (89%) of clients were symptomatic and **6,261** (11%) were asymptomatic (treated as partners). Among symptomatic clients, **48,644** (91%) of were index cases and **4,646** (9%) were partners. A total of **15,478** partner notification slips were issued, equivalent to an average of 0.32 slips per index case. Considering the 15,478 partner notification slips issued, **70%** (10,907) of those notified presented to the clinic. **43,948** (74%) of clients presented with their first lifetime episode of STI, **11,472** (74%) clients reported to have had an STI more than 3 months ago and **4,131** (26%) of clients reported having had an STI within the last three months. Re-occurrence of an STI after a recent episode may be due to re-infection or treatment failure.

17.3 HIV Status

HIV status was ascertained for **41,114** (69%) clients and **9,306** (23%) of these were HIV positive. **2,590** (28%) of positives were identified through a new test initiated at the STI clinic, while **6,716** (72%) presented with a documented previous positive HIV test result. **5,472** (81%) of clients with a previous positive HIV test result were on ART.

The rate of HIV status ascertainment at STI clinics has gradually improved over time. This is likely due to increased numbers of dedicated testing staff available at the sites (HDAs). Weak back-referral systems which may lead to incomplete documentation of new HIV test results at the STI clinics, so the actual HIV ascertainment rates are likely to be higher. 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.

17.4 STI Syndromes and Referrals

The most common syndrome was abnormal vaginal discharge (AVD) with **19,182** (30%) cases, followed by urethral discharge (UD, **15,592** cases), genital ulcers (GUD, **10,790** cases) and lower abdominal pain (LAP, **9,406** cases). Similar to previous reports, balanitis, bubo, warts and neonatal conjunctivitis each accounted for 1 – 2% 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. **18,541 (37%)** of the 50,245 STI clients with unknown or new negative test result were referred for repeat HTC. **1,731 (67%)** of 2,590 clients who were newly tested HIV positive were referred for ART eligibility assessment.

18 Supply chain management of HIV Program Commodities Q1 2016

18.1 Quantification and procurement planning

The program processed a procurement request worth USD 79 million for ARVs and opportunistic infection medicines. PCR reagents will be procured under the New Funding Model (NFM). This will enable the program maintain uninterrupted supply of HIV

commodities for the consumption period ending December 2016, including a 6 months buffer for ARVS.

During Q1 2016, ARVs, medicines for opportunistic infections and laboratory health products worth USD 14million were received by the Bollore Africa Logistics managed warehouses that are dedicated to HIV and Malaria program commodities. This comprised of Tenofovir/Lamivudine/Efavirenz 300/300/600mg (Regimen 5A; 71% of the value of adult ARVs). To maintain adequate stocks in the pipeline MOH 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).

18.2 Quarterly supply chain support during Quarter 1 ART/PMTCT supervision

District and central level Supply Chain and Logistics Officers provided stock management support at over 200 sites during the Q1 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 had storage constraints hence providers had to conduct physical inventory in 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.

18.3 National Stock Status of HIV Commodities as at end of Q1 2016

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

532,156 patients were on regimen 5A, which was 25,943 (4.8%) less than projected in the previous forecast for the end of this quarter **(558,099).** The national ART program forecast and quantification was updated in March 2016 to inform procurement planning and budgeting for HIV commodities for the period ending December 2017.

18.4 Availability of standard first line ARVs

532,156 of all ART patients were on the standard first line regimen (5A; tenofovir / lamivudine / efavirenz). This is equivalent to 87% of patients overall or 93% of patients on first line adult regimens. As of April 2016, the total stock of this regimen was equivalent to 4.7 and 5.5 months of consumption at the warehouse and site-level, respectively. The physical stock count carried out during supportive supervision in April 2016 confirmed that 715 (98.9%) of all 723 ART sites with patients on this regimen had available stocks. This translates into a 'stock-out' rate of only 1.1% of sites. Such stock ruptures 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 drug dispensations for patients.

18.5 Bimonthly distribution of HIV & Malaria Commodities

One scheduled bimonthly distribution of HIV & Malaria commodities (Distribution Round 27) took place between February and March 2016. A total of 115 different commodities (anti-malarial, ARVs, OI medicines, STI medicines and laboratory commodities) were distributed to 726 health facilities. These was the 8th successful consolidated distributions for HIV and malaria commodities.

Logistics monitoring and supply chain trail of HIV commodities post-distribution for distribution rounds 25 and 26 was conducted at 19 health facilities in 10 districts. The supply chain trail is conducted at purposefully selected health facilities to validate signed delivery notes provided by the third party logistics provider and to review adherence to stock management procedures.

During Q1 2016, the logistics team at the Department of HIV and AIDS also coordinated a total of over 1,370 individual commodity transactions between 362 ART sites to manage 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 Q1 supportive site supervision. Stock positions are from the date of the visit (between 1-4 weeks after the end of the quarter). Warehouse stock positions are from 06/06/2016

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)	**188**	**28,326**	**47,043**	5,481	5.2	8.6
	ABC / 3TC 600 / 300mg tins (30 tabs)	**87**	**4,490**	**30,437**	915	4.9	33.3
	ATV / r 300 / 100mg tins (30 tabs)	**245**	**27,094**	**22,121**	7,041	3.8	3.1
	AZT / 3TC / NVP 300 / 150 / 200mg tins (60 tabs)	**652**	**90,743**	**143,641**	28,794	3.2	5.0
	AZT / 3TC / NVP 60 / 30 / 50mg tins (60 tabs)	**659**	**483,927**	**309,374**	64,490	7.5	4.8
	AZT / 3TC 300 / 150mg tins (60 tabs)	**391**	**6,332**	**27,781**	3,712	1.7	7.5
	AZT / 3TC 60 / 30mg tins (60 tabs)	**513**	**23,653**	**8,240**	2,554	9.3	3.2
	d4T / 3TC / NVP 30 / 150 / 200mg tins (60 tabs)	**145**	**31,593**		918	34.4	
	d4T / 3TC 30 / 150mg tins (60 tabs)	**204**	**11,437**		105	108.9	
	EFV 200mg tins (90 tabs)	**177**	**2,560**	**4,355**	305	8.4	14.3
	EFV 600mg tins (30 tabs)	**242**	**10,482**	**3,784**	819	12.8	4.6
	LPV / r 100 / 25mg tins (60 tabs)	**103**	**14,951**	**104**	3,588	4.2	0.0
	LPV / r 200 / 50mg tins (120 tabs)	**68**	**899**	**5,975**	467	1.9	12.8
	NVP 200mg tins (60 tabs)	**508**	**36,289**	**100,560**	9,305	3.9	10.8
	NVP 50mg tins (60 tabs)	**166**	**16,146**	**16,807**	1,578	10.2	10.7
	TDF / 3TC / EFV 300 / 300 / 600mg tins (30 tabs)	**718**	**2,525,815**	**2,073,905**	532,156	4.7	3.9
	TDF / 3TC 300 / 300mg tins (30 tabs)	**661**	**78,691**	**54,010**	14,604	5.4	3.7
bottles	Fluconazole (Diflucan) 50mg / 5ml bottles (35 ml)	**4**	**2,513**		113	22.2	
	NVP 10mg/ml bottles (100 ml)	**521**	**96,346**	**84,327**	6,991	13.8	12.1
	NVP 10mg/ml bottles (25 ml)	**445**	**75,941**		17,729	4.3	
vials	Benzathine Penicillin 1.44g vials (50 each)	**500**	**333,266**	**119,300**	42,288	7.9	2.8
	Bleomycine 15,000IU vials (1 each)	**23**	**10,166**	**1,562**			
	Ceftriaxone 1g vials (50 each)	**604**	**100,889**		114,144	0.9	
	Depo-Provera 150mg/1ml vials (25 each)	**631**	**1,332,077**		290,805	4.6	
	Gentamicin 80mg / 2ml vials (50 each)	**460**	**198,451**		107,414	1.8	
	Streptomycin 1 gm vials (50 each)	**64**	**31,205**				
	Vincristine 1mg / 1ml vials (1 each)	**61**	**22,538**	**522**	3,408	6.6	0.2
tabs	Aciclovir 200mg blist packs (500 tabs)	**313**	**1,148,895**		688,056	1.7	
	Azithromycin 500mg blist packs (3 tabs)	**433**	**181,247**	**25,329**	11,355	16.0	2.2
	Ciprofloxacin 500mg blist packs (100 tabs)	**382**	**997,503**	**2,300,800**	325,461	3.1	7.1
	Clotrimazole 500mg boxes (1 each)	**385**	**89,811**	**13,136**	41,835	2.1	0.3
	Codeine 30mg tins (100 tabs)	**507**	**547,025**	**232,200**	53,866	10.2	4.3
	Cotrimoxazole 100 / 20mg blist packs (1000 tabs)	**615**	**25,071,229**	**52,811,000**	8,218,649	3.1	6.4
	Cotrimoxazole 400 / 80mg tins (1000 tabs)	**645**	**41,147,428**	**53,590,000**	18,044,143	2.3	3.0
	Cotrimoxazole 960mg blist packs (1000 tabs)	**694**	**43,145,858**	**84,256,000**	19,118,614	2.3	4.4
	Doxycycline 100mg tins (1000 tabs)	**542**	**5,591,347**	**5,945,000**	4,822,325	1.2	1.2
	E thambutol (E) 100 mg blist packs (100 tabs)	**53**	**158,301**				
	E thambutol (E) 400 mg blist packs (672 tabs)	**5**	**16,800**				
	Erythromycin 250mg tins (1000 tabs)	**512**	**6,242,389**	**2,767,000**	4,314,058	1.4	0.6
	Fluconazole (Diflucan) 200mg tins (28 tabs)	**176**	**437,746**	**568,120**	79,406	5.5	7.2
	Ibuprofen 200mg tins (100 tabs)	**98**	**1,507,904**		922,355	1.6	
	Isoniazid (H) 100mg blist packs (100 tabs)	**102**	**702,215**		154,183	4.6	
	Isoniazid (H) 300mg blist packs (672 tabs)	**36**	**669,682**	**4,800,096**	1,127,461	0.6	4.3
	Isoniazid (H) 300mg tins (1000 tabs)	**606**	**17,464,871**		1,128,476	15.5	
	Levonorgestrel (oral) 0.03mg blist packs (105 tab	**200**	**983,354**				
	Levonorgestrel (oral) 0.75mg blist packs (2 tabs)	**351**	**57,667**				
	Levonorgestrel (oral) 1.5mg blist packs (1 tabs)	**90**	**9,812**				
	Metronidazole 200mg tins (1000 tabs)	**628**	**18,948,847**	**16,688,000**	5,238,609	3.6	3.2
	Microgynon 0.03mg/0.15mg blist packs (84 tabs)	**537**	**7,568,816**				
	Morphine 10mg blist packs (60 tabs)	**56**	**300,731**		235,050	1.3	
	Pyridoxine 50mg tins (1000 tabs)	**564**	**12,289,580**	**229,000**	1,204,553	10.2	0.2
	RH 150 / 75 mg blist packs (672 tabs)	**153**	**806,416**				
	RH 60 / 30 mg blist packs (84 tabs)	**35**	**70,599**				
	RH 60 / 60 mg blist packs (84 tabs)	**14**	**32,198**				
	RHE 150 / 75/ 275 mg blist packs (1000 tabs)	**53**	**642,769**				
	RHZ 60 / 30/ 150 mg blist packs (84 tabs)	**44**	**59,852**				
	RHZE 150/75/400/275mg blist packs (672 tabs)	**188**	**605,842**				

Inventory unit	Item	Sites with any Stock	Total Physical Stock		Consump-tion/ Month	Months of Stock *	
			At Sites	In Warehouse		At Sites	Wareh.
sheets	ART pat. card adult (yellow) bundles (100 sheets	**575**	**155,269**	**2,900**	10,752	14.4	0.3
	ART pat. card paed. (blue) bundles (100 sheets)	**524**	**93,121**	**16,000**	1,074	86.7	14.9
	Exposed child card (pink) bundles (50 sheets)	**609**	**71,817**	**5,500**	4,099	17.5	1.3
	Family HTC Referral Slip bundles (100 sheets)	**264**	**31,394**				
	Polythene sleeve bundles (100 sheets)	**427**	**74,296**		18,274	4.1	
	Pre-ART pat. card (green) bundles (100 sheets)	**524**	**122,041**		2,349	52.0	
	STI Partner Referral Slip bundles (100 sheets)	**287**	**25,374**				
tests	DBS kit (filter paper, lancet, etc.) boxes (50 each)	**596**	**151,901**	**39,600**	35,320	4.3	1.1
	Determine HIV1/2 boxes (100 each)	**640**	**538,330**	**1,005,300**	274,974	2.0	3.7
	Determine syphilis boxes (100 each)	**535**	**334,979**	**206,400**	52,022	6.4	4.0
	Uni-Gold HIV1/2 boxes (20 each)	**645**	**108,978**	**13,780**	32,965	3.3	0.4
pieces	Condoms female boxes (1000 each)	**360**	**686,953**		201,986	3.4	
	Condoms male boxes (144 each)	**603**	**13,470,790**	**29,158,848**	7,317,200	1.8	4.0
	Etonorgestrel (Implanon NXT) 68mg boxes (1 eac	**224**	**17,898**				
	Etonorgestrel (Implanon) 68mg boxes (1 each)	**274**	**21,063**				
	Intrauterine device (Copper T) boxes (1 each)	**112**	**9,640**				
	Levonorgestrel (Jadelle) 2 x 75mg boxes (20 eac	**424**	**60,589**				

19 Training and Mentoring

19.1 HIV Testing Services

24 HIV Diagnostic Assistants and **22** other HTS providers were newly trained in HIV testing and counselling. **42** out of the total trained were certified. HIV testing master trainers and officers from the district hospitals facilitated the training.

20 Participants in Q1 2016 Supervision (Site visits 6 - 19 April 2016)

Abdul Richard Onani (, MOH)
Absalom Kaunda (CO, MOH, Mzimba DHO)
Agnes Kalitsiro (Nurse, Mlambe Mission Hospital)
Agness Ndilowe (Nurse, LH)
Alefa Fikira (CMT, MOH)
Alexander Malunguza (, NTP)
Alice Mdolo (, MOH)
Amin Khonje (, MSH)
Andraida Mtoseni (Nurse, MOH)
Andrew Dimba (, NTP)
Andrew Gompho (Clinician, MOH)
Andrew Mganga (M&E Fellow, Dept for HIV and AIDS)
Andrew Ntenge (, JHPIEGO)
Anne Kantepa (, Baylor)
Annie Biza (Nurse, MDF)
Anthony Mdeni (, Dignitas)
Austin Mkute (Nurse, MOH)
Austins Namondwe (CO, CHAM)
Batoni Upindi (TB Zonal Supervisor, MOH)
Beatrice Malonje (Nurse, MOH)
Benjamin Mazalo (CO, SUCOMA Clinic)
Bertha Chimbwanya (, MOH)
Catherine Kassam (, MOH)
Cecelia Tenesi (Nurse, MOH)
Cecilia Manyawa (Nurse, MOH)
Charles Chimenya (Logistics, MOH)
Charles F Sekani (CO, .)
Chifundo Makuluni (Nurse, MOH)
Chikayiko Majamanda (Nurse, MOH)
Chikumbutso Pendame (MA, MOH)
Chimwemwe Mlenga (, MOH)
Chisomo Thondolo (Nurse, EGPAF)
Chris Blair (MO, EQUIP)
Chrissy Lizengo (, MOH)
Christopher Mkwezalamba (CO, MOH)
Clement Chiphota (CO, MoH)
Cornelius Kang'ombe (, NTP)
Dalitso Midiani (PMTCT Officer, MOH)
Damison Msiska (CO, Dwangwa)
Davie Maseko (CO, SOS)
Davie Nkosi (, MOH)
Deliwe Msiska (, JHPIEGO)
Diana Chipande (, MOH)
Dorica Sambo (Nurse, MOH)
Edith Thaulo (Nurse, MOH)
Eliza Mahimanya (Logistics Officer, MOH)
Elizabeth Chatsika (CO, CHAM)
Ellen Lungu (Nurse, CHAM)
Elton Masina (CO, EGPAF)
Envance Njaidi (MA, MOH)
Erik Mittochi (CO (ART coord), MOH)
Eustice Mhango (ART officer, MOH, Department of HIV and AIDS)
Evans Kagwira (TB Zonal Supervisor, MOH)
Evans Kulunga (, MOH)
Everista Mkandawire (Nurse, MOH)
Ezra Majoni (Nurse, MOH)
Fainala Muyila (Nurse, MOH)
Fatsireni Mapulanga (, MOH)
Felix Botha (, MOH)
Florence Mndala (Nurse, Partners)
Geoffrey Makhalira (, NTP)
Gift Kakwesa (, PIH)
Gladson Waluza (, MOH)
Grace Chipanga (Nurse, Private)
Grant Gondwe (, NTP)
Hannah Nkhoma (, MOH)
Hannock Matupi (ARV clinician, MOH, Rumphi DH)
Happy Mpawa (, MOH)
Harrison Tembo (CO, MOH)
Harry Tsapa (CO, MOH)
Henry Banda (CO, MOH)
Henry Kanyerere (TB/HIV Program Officer, MOH)
Henry Mphonde (CO, Lighthouse)
Isaiah Dambe (, NTP)
James Mataya (MA, CHAM)
Janet Chikonda (Nurse, MOH)
Jean Kayamba (Nurse, MOH)
Jesse Lobeni (Nurse, MOH)
Jimmy Villiera (, MOH)
Joel Sosola (, MOH)
John Kabichi (CO, MOH)
Jonathan Nyasulu (, MOH)
Judith Ntopa (Nurse, Cobbe Barracks)
Juliana Soko (ARV nurse, MOH, Livingstonia MH)
Justice Kaphiri (, NTP)
Kingsley Makwale (MA, MOH)
Kingsley Mbewa (CO, MOH)
Knox Banda (TB Zonal Supervisor, MOH)
Kondwani Chikoti (CO, MOH)
Kuzani Mbendera (NTP)
Lameck Kaonga (, Lighthouse)
Lameck Mlauzi (, NTP(MOH))
Lameck Mzava (, NTP)
Laywel Nyirenda (, EGPAF)
Leonard Kadongola (, MOH)
Lilian Kachali (Nurse, MOH)
Limbani Mbetewa (, DTO)
Lincy Chalunda (CO, MOH)
Linda Vito (, MOH)
Lioyd Wella (CO, MOH)
Loyd Salimu (ART/PMTC Co-ordinate, MOH)
Lucky Kabanga (Pharmacist, MOH)
Macleod Piringu (ART CORDINATOR, MOH)
Margaret Katumbi (Nurse, MOH)
Margret Chiyabwa (, Dignitas)
Marko Mwanda (, MOH)
Martin Katanga (CO, MOH)
Mary Gosten (MA, MOH)
Mary Kamiza (TB Zonal Supervisor, NTP)
Mary Kaponya (, MOH)
Mathilda Kamanga (Nurse, Army)
Matthews Kadewa (, HIV Dept (Logistics))
Menad Bvumbwe (, Baylor)
Mercy Makaika (Nurse, MOH)
Merthwin Chiwaya (, MOH)
Michael Eliya (PMTCT Program Officer, MOH)
Mirriam Chigwiya (CO, MOH)
Monica Simfukwe (Nurse, MOH, Chintheche RH)
Moses Tambala (Nusre, Baylor)
Mphatso Magwaya (, JHPIEGO)
Mulenga Kuzemba (, MOH)
Nancy Kamwendo (Nurse, MOH)
Noel Mphasa (TB Zonal Supervisor, NTP)
Norman Lakalaka (, MOH)
Nyembezi Chibonga (, NTP)
Offrey Mduwira (, MOH)
Ormisher Joe Nthala (CO, Lighthouse)
Oscar Kasiyamphanje (Nurse, CHAM)
Osman Banda (, MOH)
Overtone Ndhlovu (CO, MOH)
Owen Manda (Nurse, Public)
Patrick Paul J M Chirwa (TB Zonal Supervisor, NTP)
Patrick Stevens (Mentor, EGPAF)
Pepsy Nangwale (Nurse, MOH)
Peter Chimphero (CO, MOH)
Peter Donda (CO, Dedza DH)
Peter Mwamulima (, Partners in Hope)
Peter Mzumara (ART clinician, MOH)
Regina Longwe (, MOH)
Relia Mandindi (, Public)
Rhoda Banda (, NTP)
Richard Abuduo (CO, MOH)
Robert Majoni (CO, CHAM)
Rodney Gonani (CO, CHAM)
Rodrick Kaulere (CO, CHAM (Sister Tereza))
Rose Maviko (Nurse, Limbe HC)
Rumours Lumala (CO, MOH)
Ruockia Mwachumu (Nurse, Nsanje DHO)
Ruth Deula (Nurse, CHAM)
Sabina Phiri (Nurse, MOH)
Salome Chiwewe (Nurse, MOH, Ntchisi DH)
Savel Kafwafwa (, PIH)
Sidder Hambisa (ENM, MOH)
Stanford Miyango (Pharmasist, MOH)
Stanley Phombo (Nurse, MOH)
Steven Patrick (, MOH)
Stone Mbiliyawanda (, MOH)
Stony Mbiriyawanda (, MOH)
Stuart Chuka (CO, MBCA)
Taona Selemani (, NTP)
Tawina Crusoe (Nurse, Illovo)
Tekia Banda (Nurse, MOH)
Thoko Kumpolota (Co, Light house)
Timothy Mwenyedini (MA, MOH)
Vera Kajawa (Nurse, MOH)
Voster Msutu (, MOH)
Washingtone Ozitiosauka (CO, MOH)
Wells Banda (CO, MOH)
Weston Njamwaha (Clinician, PIH)
Wezzie Luhanga (, MOH)
William Mtonga (CO, CHAM)
Yamikani Gumulira (, MOH)
Yunus Chiosa (, NTP)
Zakaliah Mphande (, CHAM)

Report compiled by the Department of HIV and AIDS:
Frank Chimbwandira (Director)
Austin Mnthambala (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)
Thoko Kalua (M&E Officer)
Peter Preko (Technical Assistant)
Paul Nyasulu (PMTCT/ART Officer)
Joseph Kasola (HTS Officer)
Khumbo Ngona (HTS Officer)
Amos Makwaya (STI Program 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.

13 July 2016

21 Appendix (Full National HIV Program Data)

HTC site report

Malawi (national)

2016 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

Clients at health facility (static)

HTC client details

*

Total HTC clients served			
Total HIV tested		**829,528**	**100%**
Sex			
Males tested		**281,930**	**34%**
Females tested		**547,598**	**66%**
	Females non-pregnant	**356,799**	65%
	Females pregnant	**190,799**	35%
Age			
Children 0-14 yrs		**124,359**	**15%**
	Children below 12 mths (Age group A)	**5,119**	4%
	Children 12 mths - 14 yrs (Age group B)	**119,240**	96%
Adults 15+ years		**705,169**	**85%**
	Young adults 15-24 years (Age group C)	**313,415**	44%
	Older adults 25+ yrs (Age group D)	**391,754**	56%
HTC access type			
PITC		**518,350**	**62%**
Family Referral Slip (FRS)		**5,349**	**1%**
Other (VCT, etc.) HTC access		**305,829**	**37%**
HTC first time / repeat			
Never tested before		**257,073**	**31%**
Previously accessed HTC		**572,455**	**69%**
	Last negative	**539,882**	94%
	Last positive	**29,466**	5%
	Last exposed infant	**2,249**	0%
	Last inconclusive	**858**	0%
Counseling session type / Partner present			
Counseled with partner / partner present		**167,762**	**20%**
Counseled alone / Partner not present		**661,766**	**80%**
Outcome summary (HIV test)			
Single test negative		**754,925**	**91%**
Single test positive		**1,176**	**0%**
Test 1&2 negative		**1,028**	**0%**
Test 1&2 positive		**69,709**	**8%**
Test 1&2 discordant		**2,690**	**0%**
Final result given to client			
Results among clients never tested / last negative		**799,797**	**96%**
	New negative	**755,360**	94%
	New positive	**40,870**	5%
	New exposed infants	**1,223**	0%
	New inconclusive	**2,344**	0%
Confirmatory results (previous positive clients)		**29,731**	**4%**
	Confirmatory positive	**29,191**	98%
	Confirmatory inconclusive	**540**	2%

* Subgroups may not add to 100% due to rounding

HTC client details

*

Partner / Family HTC referral slips

Sum of slips given		**30,423**	**100%**
	Total clients presenting with referral slip	**5,349**	18%
	Total failed referrals (slips not returned)	**25,074**	82%

Clients tested in the community

HTC client details

*

Total HTC clients served

Total HIV tested		**27,723**	**100%**

Sex

Males tested		**10,711**	**39%**
Females tested		**17,012**	**61%**
	Females non-pregnant	**14,727**	87%
	Females pregnant	**2,285**	13%

Age

Children 0-14 yrs		**5,854**	**21%**
	Children below 12 mths (Age group A)	**139**	2%
	Children 12 mths - 14 yrs (Age group B)	**5,715**	98%
Adults 15+ years		**21,869**	**79%**
	Young adults 15-24 years (Age group C)	**11,373**	52%
	Older adults 25+ yrs (Age group D)	**10,496**	48%

HTC access type

PITC		**5,952**	**21%**
Family Referral Slip (FRS)		**46**	**0%**
Other (VCT, etc.) HTC access		**21,725**	**78%**

HTC first time / repeat

Never tested before		**11,967**	**43%**
Previously accessed HTC		**15,756**	**57%**
	Last negative	**15,391**	98%
	Last positive	**353**	2%
	Last exposed infant	**4**	0%
	Last inconclusive	**8**	0%

Counseling session type / Partner present

Counseled with partner / partner present		**1,384**	**5%**
Counseled alone / Partner not present		**26,339**	**95%**

Outcome summary (HIV test)

Single test negative		**26,457**	**95%**
Single test positive		**43**	**0%**
Test 1&2 negative		**18**	**0%**
Test 1&2 positive		**1,182**	**4%**
Test 1&2 discordant		**23**	**0%**

HTC site report

Malawi (national)

2016 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

HTC client details

*

Final result given to client

Results among clients never tested / last negative		**27,357**	**99%**
	New negative	**26,501**	97%
	New positive	**829**	3%
	New exposed infants	**1**	0%
	New inconclusive	**26**	0%
Confirmatory results (previous positive clients)		**366**	**1%**
	Confirmatory positive	**361**	99%
	Confirmatory inconclusive	**5**	1%

Partner / Family HTC referral slips

Sum of slips given		**678**	**100%**
	Total clients presenting with referral slip	**46**	7%
	Total failed referrals (slips not returned)	**632**	93%

Clients at stand-alone HTC sites

HTC client details

*

Total HTC clients served

Total HIV tested		**4,906**	**100%**

Sex

Males tested		**3,674**	**75%**
Females tested		**1,232**	**25%**
	Females non-pregnant	**943**	77%
	Females pregnant	**289**	23%

Age

Children 0-14 yrs		**224**	**5%**
	Children below 12 mths (Age group A)	**3**	1%
	Children 12 mths - 14 yrs (Age group B)	**221**	99%
Adults 15+ years		**4,682**	**95%**
	Young adults 15-24 years (Age group C)	**1,469**	31%
	Older adults 25+ yrs (Age group D)	**3,213**	69%

HTC access type

PITC		**3,143**	**64%**
Family Referral Slip (FRS)		**43**	**1%**
Other (VCT, etc.) HTC access		**1,720**	**35%**

HTC first time / repeat

Never tested before		**1,212**	**25%**
Previously accessed HTC		**3,694**	**75%**
	Last negative	**3,451**	93%
	Last positive	**229**	6%
	Last exposed infant	**12**	0%
	Last inconclusive	**2**	0%

Counseling session type / Partner present

Counseled with partner / partner present		**269**	**5%**
Counseled alone / Partner not present		**4,637**	**95%**

* Subgroups may not add to 100% due to rounding

HTC site report

Malawi (national)

2016 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

HTC client details

*

Outcome summary (HIV test)

Single test negative	**4,463**	**91%**
Single test positive	**0**	**0%**
Test 1&2 negative	**3**	**0%**
Test 1&2 positive	**433**	**9%**
Test 1&2 discordant	**7**	**0%**

Final result given to client

Results among clients never tested / last negative	**4,673**	**95%**
New negative	**4,459**	95%
New positive	**202**	4%
New exposed infants	**7**	0%
New inconclusive	**5**	0%
Confirmatory results (previous positive clients)	**233**	**5%**
Confirmatory positive	**231**	99%
Confirmatory inconclusive	**2**	1%

Partner / Family HTC referral slips

Sum of slips given	**141**	**100%**
Total clients presenting with referral slip	**43**	30%
Total failed referrals (slips not returned)	**98**	70%

* Subgroups may not add to 100% due to rounding

Blood safety

Malawi (national)

2016 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

Infect. disease screening among potential donors *

HIV screening

HIV testing not done	**2,922**	**21%**
Tested for HIV	**10,997**	**79%**
HIV negative	**10,532**	96%
HIV positive	**465**	4%

Hepatitis B screening

HepB testing not done	**2,971**	**21%**
Tested for Hepatitis B	**10,948**	**79%**
HepB Negative	**10,453**	95%
HepB Positive	**495**	5%

Hepatitis C screening

HepC testing not done	**6,704**	**48%**
Tested for Hepatitis C	**7,215**	**52%**
HepC Negative	**7,041**	98%
HepC Positive	**174**	2%

Syphilis screening

Syphilis testing not done	**3,048**	**22%**
Tested for Syphilis	**10,871**	**78%**
Syphilis Negative	**10,579**	97%
Syphilis Positive	**292**	3%

Malaria screening

Malaria testing not done	**4,565**	**33%**
Tested for malaria	**9,354**	**67%**
Malaria Negative	**8,315**	89%
Malaria Positive	**1,039**	11%

Summary screening outcome

Not donated	**5,195**	**37%**
Donated	**8,724**	**63%**
Screened for at least HIV, HepB and syphilis	**8,116**	93%
Screened for HIV, HepB, HepC, Syphilis, Malaria	**5,255**	65%
Screened for HIV, HepB, Syphilis	**2,861**	35%
Screened for HIV, HepB	**70**	1%
Screened for HIV only	**73**	1%
Screened with any other combination of tests	**465**	5%

Cross-matching report *

Blood group typing (for units and patients)

Total blood group typing done	**38,117**	**100%**

Blood units cross-matched (by source)

Total blood units cross-matched	**26,300**	**100%**
Total units from MBTS (estimated)	**17,576**	67%
Total units from replacement donors	**8,724**	33%

Blood units cross-matched by patient group

Units cross-matched for maternity	**2,715**	**10%**
Units cross-matched for paediatrics	**13,715**	**52%**
Units cross-matched for other ward	**9,870**	**38%**

* Subgroups may not add to 100% due to rounding

Blood safety

Malawi (national)

2016 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

Cross-matching report

*

Transfusion reactions

Units transfused without adverse events	**26,277**	**100%**
Units with suspected transfusion reactions	**23**	**0%**
Units with confirmed transfusion reactions	**0**	**0%**

* Subgroups may not add to 100% due to rounding

HIV exposed child follow-up

Malawi (national)

2016 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

Age 2 months

Age cohort outcomes

*

Total children in birth cohort

Total children registered	**8,533**	**100%**

CPT status

On CPT	**7,738**	**91%**
Not on CPT	**795**	**9%**

HIV status

Current HIV infection status unknown	**5,516**	**65%**
HIV infection not confirmed, not ART eligible	**5,506**	100%
HIV infection not confirmed, ART eligible (PSHD)	**10**	0%
Current HIV infection status known	**3,017**	**35%**
Confirmed not infected	**2,940**	97%
Confirmed infected (ART eligible)	**77**	3%

ART eligibility summary

Not eligible for ART	**8,446**	**99%**
ART eligible	**87**	**1%**
ART not initiated	**40**	46%
Initiated ART	**47**	54%

Primary follow-up outcome

Discharged uninfected	**9**	**0%**
Continue follow-up	**7,819**	**93%**
Started ART	**47**	**1%**
Defaulted	**478**	**6%**
Died	**27**	**0%**

Transfers between sites

Total not transferred out	**8,380**	**98%**
Transferred out	**153**	**2%**

Age 12 months

Age cohort outcomes

*

Total children in birth cohort

Total children registered	**9,970**	**100%**

CPT status

On CPT	**7,296**	**73%**
Not on CPT	**2,674**	**27%**

HIV status

Current HIV infection status unknown	**4,714**	**47%**
HIV infection not confirmed, not ART eligible	**4,703**	100%
HIV infection not confirmed, ART eligible (PSHD)	**11**	0%
Current HIV infection status known	**5,256**	**53%**
Confirmed not infected	**5,077**	97%
Confirmed infected (ART eligible)	**179**	3%

* Subgroups may not add to 100% due to rounding

HIV exposed child follow-up

Malawi (national)

2016 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

Age cohort outcomes

*

ART eligibility summary

Not eligible for ART	**9,780**	**98%**
ART eligible	**190**	**2%**
ART not initiated	**16**	8%
Initiated ART	**174**	92%

Primary follow-up outcome

Discharged uninfected	**162**	**2%**
Continue follow-up	**7,256**	**75%**
Started ART	**174**	**2%**
Defaulted	**2,019**	**21%**
Died	**93**	**1%**

Transfers between sites

Total not transferred out	**9,704**	**97%**
Transferred out	**266**	**3%**

Age 24 months

Age cohort outcomes

*

Total children in birth cohort

Total children registered	**9,156**	**100%**

CPT status

On CPT	**807**	**9%**
Not on CPT	**8,349**	**91%**

HIV status

Current HIV infection status unknown	**4,056**	**44%**
HIV infection not confirmed, not ART eligible	**4,038**	100%
HIV infection not confirmed, ART eligible (PSHD)	**18**	0%
Current HIV infection status known	**5,100**	**56%**
Confirmed not infected	**4,849**	95%
Confirmed infected (ART eligible)	**251**	5%

ART eligibility summary

Not eligible for ART	**8,887**	**97%**
ART eligible	**269**	**3%**
ART not initiated	**38**	14%
Initiated ART	**231**	86%

Primary follow-up outcome

Discharged uninfected	**4,704**	**53%**
Continue follow-up	**631**	**7%**
Started ART	**231**	**3%**
Defaulted	**3,191**	**36%**
Died	**145**	**2%**

Transfers between sites

Total not transferred out	**8,902**	**97%**
Transferred out	**254**	**3%**

* Subgroups may not add to 100% due to rounding

Antenatal Care

Malawi (national)

2016 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

ANC women after 6 months

ANC cohort analysis

*

Total women completing ANC in the reporting period		
Total women in booking cohort	156,222	100%
Visits per woman		
Women with 1 visit	33,690	22%
Women with 2 visits	39,509	25%
Women with 3 visits	46,609	30%
Women with 4 visits	29,524	19%
Women with 5+ visits	6,890	4%
Pre-eclampsia		
No pre-eclampsia	153,799	98%
Pre-eclampsia	2,423	2%
TTV doses		
0-1 TTV doses	76,769	49%
2+ TTV doses	79,453	51%
SP tablets		
0 SP doses	16,649	11%
1 SP dose (1 x 3 tabs)	37,726	24%
6+ SP tablets (2 x 3 tabs)	101,847	65%
FeFo tablets		
0-119 FeFo tablets	132,163	85%
120+ FeFo tablets	24,059	15%
Albendazole (Deworming)		
0 Albend. doses	27,940	18%
1 Albend. dose	127,654	82%
ITN (bednets)		
No ITN	19,986	13%
ITN received	135,598	87%
Syphilis status		
Not tested for syphilis	101,253	65%
Tested for syphilis	54,969	35%
Syphilis negative	53,880	98%
Syphilis positive	1,089	2%
HIV status ascertainment		
HIV status not ascertained	8,457	5%
HIV status ascertained	147,765	95%
Valid previous test result	11,456	8%
Previous negative	5,191	45%
Previous positive	6,265	55%
New test at ANC	136,309	92%
New negative	131,007	96%
New positive	5,302	4%
HIV status summary		
Total women HIV negative	136,198	92%
Total women HIV positive	11,567	8%

* Subgroups may not add to 100% due to rounding

Antenatal Care

Malawi (national)

2016 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

ANC cohort analysis

*

CPT status (among HIV pos)

Not on CPT	**763**	**7%**
On CPT	**10,804**	**93%**

PMTCT regimen mother

No ARVs	**649**	**6%**
Any ARVs	**10,918**	**94%**
ART (by time of initiation)	**10,918**	100%
Already on ART when starting ANC	**5,726**	52%
Started ART at 0-27 weeks of pregnancy	**4,273**	39%
Started ART at 28+ weeks of preg.	**919**	8%

Baby's ARVs dispensed

No ARVs dispensed for infant	**1,169**	**10%**
ARVs dispensed for infant	**10,398**	**90%**

* Subgroups may not add to 100% due to rounding

Maternity

Malawi (national)

2016 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

Maternal details

*

Admissions in the reporting period

Total admissions (referrals double-counted)	**123,203**	**100%**
Not referred to other site (total women)	**117,187**	95%
Referred out before delivery (multiple admissions)	**6,016**	5%

HIV status ascertainment

HIV status not ascertained	**2,591**	**2%**
HIV status ascertained	**120,777**	**98%**
Valid previous test result	**116,449**	96%
Previous negative	**107,293**	92%
Previous positive	**9,156**	8%
New test at maternity	**4,328**	4%
New negative	**4,076**	94%
New positive	**252**	6%

HIV status summary

Total women HIV negative	**111,369**	**92%**
Total women HIV positive	**9,408**	**8%**

ARVs during pregnancy (among HIV pos)

No ARV in pregnancy	**160**	**2%**
Any ARVs	**9,248**	**98%**
ART (by time of initiation)	**9,248**	100%
ART initiated before pregnancy	**7,446**	81%
ART initiated in 1st / 2nd trimester	**991**	11%
ART initiated in 3rd trimester	**664**	7%
ART initiated during labour	**147**	2%

Obstetric complications

No obstetric complications	**109,112**	**88%**
Any obstetric complications	**14,256**	**12%**
Haemorrhage	**2,361**	17%
Haemorrhage ante-partum	**775**	33%
Haemorrhage post-partum	**1,586**	67%
Obstr / prol labour	**4,707**	33%
(pre-) Eclampsia	**947**	7%
Maternal sepsis	**239**	2%
Ruptured uterus	**103**	1%
Other obstetric complications	**5,899**	41%

Emergency obstetric care

Oxytocin	**111,849**	**95%**
Anticonvulsive	**476**	**0%**
Antibiotics	**4,853**	**4%**
Blood transfusion	**349**	**0%**
Manual removal of placenta	**526**	**0%**

Vitamin A

Vit A not given	**38,876**	**32%**
Vit A given	**84,492**	**68%**

Maternity

Malawi (national)

2016 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

Maternal details

*

Staff conducting delivery

Category A: MO, CO, nurse/midwife, MA	**110,907**	**95%**
Category B: PA, WA, HSA	**553**	**0%**
Category C: Other	**5,892**	**5%**

Mother survival

Mother alive	**117,270**	**100%**
Mother died	**82**	**0%**

Infant details

*

Single babies / multiple deliveries

Total babies delivered	**119,551**	**100%**
Single babies	**115,370**	97%
Twin / multiple babies	**4,181**	3%

Delivery place

Total deliveries at a health facility	**113,405**	**95%**
This facility	**113,033**	100%
Other facility	**372**	0%
Total deliveries before reaching the facility	**6,146**	**5%**
In transit	**3,999**	65%
Home / TBA	**2,147**	35%

Delivery mode

Spontaneous vaginal	**107,908**	**90%**
Vacuum extraction	**1,337**	**1%**
Breech	**2,113**	**2%**
Caesarean section	**8,193**	**7%**

Infant complications

No infant complications	**102,638**	**86%**
Total infants with complications	**16,913**	**14%**
Prematurity	**3,678**	22%
Weight less 2500g	**5,311**	31%
Asphyxia	**5,213**	31%
Sepsis	**1,051**	6%
Other newborn complication	**1,660**	10%

Infant survival

Total live births	**117,619**	**98%**
Discharged alive	**116,487**	99%
Neonatal deaths	**1,132**	1%
Stillbirths	**1,932**	**2%**
Stillbirth, fresh	**1,041**	54%
Stillbirth, macerated	**891**	46%

Maternity

Malawi (national)

2016 Q1 (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	**1,938**	**2%**
Infants with known HIV exposure status	**114,549**	**98%**
Not HIV exposed	**105,765**	92%
HIV exposed	**8,784**	8%
Received no ARVs	**452**	5%
Received ARVs	**8,332**	95%
Nevirapine	**8,332**	100%

Breastfeeding initiated

BF not started within 60min	**11,352**	**9%**
BF started within 60min	**108,199**	**91%**

Tetracycline eye ointment given

TO not given	**26,344**	**22%**
TO given	**93,207**	**78%**

* Subgroups may not add to 100% due to rounding

HIV Care Clinic (HCC) cohort analysis

Malawi (national)

2016 Q1 (Quarter)

Registration details

*

HCC clinic registrations

Total HCC registrations	**19,343**	**100%**

Registration type

Patients enrolled first time	**18,306**	**95%**
Patients re-enrolled	**52**	**0%**
Patients transferred in	**985**	**5%**

Sex

Males (all ages)	**9,188**	**48%**
Females (all ages)	**10,155**	**52%**
Non-pregnant	**10,089**	99%
Pregnant	**66**	1%

Age at registration

Adults 15+ yrs	**6,625**	**34%**
Children 0-14 yrs	**12,718**	**66%**
Children 24 months - 14 years	**625**	5%
Children below 24 months (exposed children)	**12,093**	95%
Children 2 - below 24 months	**3,764**	31%
Infants below 2 months	**8,329**	69%

Reason for HCC registration

Exposed infants	**12,296**	**64%**
Confirmed infected patients (pre-ART)	**7,047**	**36%**

* Subgroups may not add to 100% due to rounding

HIV Care Clinic (HCC) cohort analysis

Malawi (national)

2016 Q1 (Cumulative)

Registration details

*

HCC clinic registrations

Total HCC registrations	**405,837**	**100%**

Registration type

Patients enrolled first time	**390,400**	**96%**
Patients re-enrolled	**1,233**	**0%**
Patients transferred in	**14,204**	**3%**

Sex

Males (all ages)	**177,881**	**44%**
Females (all ages)	**227,956**	**56%**
Non-pregnant	**227,042**	100%
Pregnant	**914**	0%

Age at registration

Adults 15+ yrs	**194,193**	**48%**
Children 0-14 yrs	**211,644**	**52%**
Children 24 months - 14 years	**17,722**	8%
Children below 24 months (exposed children)	**193,922**	92%
Children 2 - below 24 months	**87,157**	45%
Infants below 2 months	**106,765**	55%

Reason for HCC registration

Exposed infants	**190,428**	**47%**
Confirmed infected patients (pre-ART)	**215,409**	**53%**

Pre-ART follow-up outcome

*

Primary follow-up outcomes

Total retained in pre-ART	**42,265**	**21%**
Started ART	**111,419**	**54%**
Defaulted	**50,097**	**24%**
Died	**1,962**	**1%**

Transfers between sites

Total not transferred out	**207,188**	**96%**
Transferred out	**8,221**	**4%**

* Subgroups may not add to 100% due to rounding

ART cohort analysis

Malawi (national)

2016 Q1 (Quarter)

Registration details

*

ART clinic registrations

Total ART clinic registrations	**35,478**	**100%**

Registration type

First time ART initiations (total patients)	**28,052**	**79%**
ART re-initiations	**397**	**1%**
ART transfers in	**7,029**	**20%**

Sex

Males	**13,156**	**37%**
Females	**22,322**	**63%**
Non-pregnant	**15,640**	70%
Pregnant	**6,682**	30%

Age at ART initiation

Adults 15+ yrs	**32,255**	**91%**
Children 0-14 yrs	**3,223**	**9%**
Children 2-14 yrs	**2,447**	76%
Children below 24 mths	**776**	24%

Reason for starting ART

Presumed severe HIV Disease	**127**	**0%**
Confirmed HIV infection	**35,351**	**100%**
WHO stage 1 or 2	**21,680**	61%
Total lymphocytes <threshold	**11**	0%
CD4 below threshold	**12,035**	56%
CD4 unknown or >threshold	**9,634**	44%
PCR infants	**96**	1%
Children 12-59 mths	**883**	9%
Pregnant women	**6,629**	69%
Breastfeeding mothers	**2,026**	21%
WHO stage 3	**11,791**	33%
WHO stage 4	**1,549**	4%
Unknown / reason outside of guidelines	**331**	1%

TB at ART initiation

Never TB / TB > 24 months ago	**34,647**	**98%**
TB within the last 24 months	**301**	**1%**
Current episode of TB	**530**	**1%**

Kaposi's sarcoma at ART initiation

No KS	**35,194**	**99%**
Patients with KS	**284**	**1%**

* Subgroups may not add to 100% due to rounding

ART cohort analysis

Malawi (national)

2016 Q1 (Cumulative)

Registration details

*

ART clinic registrations

Total ART clinic registrations	**1,127,791**	**100%**

Registration type

First time ART initiations (total patients)	**901,588**	**80%**
ART re-initiations	**12,574**	**1%**
ART transfers in	**213,629**	**19%**

Sex

Males	**406,888**	**36%**
Females	**720,903**	**64%**
Non-pregnant	**579,700**	80%
Pregnant	**141,203**	20%

Age at ART initiation

Adults 15+ yrs	**1,029,934**	**91%**
Children 0-14 yrs	**97,857**	**9%**
Children 2-14 yrs	**75,247**	77%
Children below 24 mths	**22,610**	23%

Reason for starting ART

Presumed severe HIV Disease	**3,837**	**0%**
Confirmed HIV infection	**1,123,954**	**100%**
WHO stage 1 or 2	**512,905**	46%
Total lymphocytes <threshold	**269**	0%
CD4 below threshold	**335,279**	65%
CD4 unknown or >threshold	**177,357**	35%
PCR infants	**3,110**	2%
Children 12-59 mths	**9,045**	5%
Pregnant women	**122,198**	69%
Breastfeeding mothers	**43,004**	24%
WHO stage 3	**499,133**	44%
WHO stage 4	**105,441**	9%
Unknown / reason outside of guidelines	**6,475**	1%

TB at ART initiation

Never TB / TB > 24 months ago	**1,052,231**	**93%**
TB within the last 24 months	**38,688**	**3%**
Current episode of TB	**36,872**	**3%**

Kaposi's sarcoma at ART initiation

No KS	**1,107,627**	**98%**
Patients with KS	**20,164**	**2%**

* Subgroups may not add to 100% due to rounding

ART cohort analysis

Malawi (national)

2016 Q1 (Cumulative)

ART outcomes

*

Primary follow-up outcomes

Total alive on ART		**606,673**	**66%**
	Alive on ART at site of last registration	**608,028**	100%
	ART patients in transit between sites	**-1,355**	0%
Defaulted		**220,156**	**24%**
Stopped ART		**3,669**	**0%**
Total died		**83,664**	**9%**
	Died month 1	**19,719**	24%
	Died month 2	**12,366**	15%
	Died month 3	**7,519**	9%
	Died month 4+	**44,060**	53%

Transfers between sites

Total not transferred out		**915,517**	**81%**
Transferred out		**212,274**	**19%**

ART regimens

First line regimens		**599,315**	**99%**
	Adult formulation	**572,431**	96%
		Regimen 0A	**439**	0%
		Regimen 1A	**918**	0%
		Regimen 2A	**28,794**	5%
		Regimen 3A	**105**	0%
		Regimen 4A	**714**	0%
		Regimen 5A	**532,156**	93%
		Regimen 6A	**9,305**	2%
	Paed. formulation	**26,884**	4%
		Regimen 0P	**564**	2%
		Regimen 1P	**67**	0%
		Regimen 2P	**25,796**	96%
		Regimen 3P	**26**	0%
		Regimen 4P	**431**	2%
Second line regimens		**8,237**	**1%**
	Adult formulation	**7,041**	85%
		Regimen 7A	**4,671**	66%
		Regimen 8A	**2,370**	34%
	Paed. Formulation	**1,196**	15%
		Regimen 9P	**1,196**	100%
Other regimen (adult / paed)		**476**	**0%**

Adherence

Adherence unknown (not recorded)		**6,649**	**1%**
Adherence recorded		**601,379**	**99%**
	0-3 doses missed	**545,347**	91%
	4+ doses missed	**56,032**	9%

ART side effects

Side effects unknown (not recorded)		**26,507**	**4%**
Side effects recorded		**581,521**	**96%**
	No side effects	**573,491**	99%
	Any side effects	**8,030**	1%

* Subgroups may not add to 100% due to rounding

ART cohort analysis

Malawi (national)

2016 Q1 (Cumulative)

ART outcomes

*

Current TB status among ART patients (ICF)

ICF not done (Current TB status unknown/ not circ)	**17,173**	**3%**
ICF done	**590,855**	**97%**
TB not suspected	**586,753**	99%
TB suspected	**3,203**	1%
TB confirmed	**899**	0%
TB confirmed, not on treatment	**60**	7%
TB confirmed, on TB treatment	**839**	93%

* Subgroups may not add to 100% due to rounding

ART survival analysis

Malawi (national)

2016 Q1 (Quarter)

12 month survival children

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations	**2,990**	**100%**
Transfers out (double counted)	**283**	9%
Total not transferred out (patients in cohort)	**2,707**	91%
Total alive on ART	**2,000**	74%
Total not retained	**707**	26%
Defaulted	**557**	79%
Stopped ART	**16**	2%
Died	**134**	19%

12 month survival all ages

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations	**30,921**	**100%**
Transfers out (double counted)	**2,709**	9%
Total not transferred out (patients in cohort)	**28,212**	91%
Total alive on ART	**21,479**	76%
Total not retained	**6,733**	24%
Defaulted	**5,678**	84%
Stopped ART	**66**	1%
Died	**989**	15%

24 month survival all ages

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations	**31,314**	**100%**
Transfers out (double counted)	**3,612**	12%
Total not transferred out (patients in cohort)	**27,702**	88%
Total alive on ART	**19,418**	70%
Total not retained	**8,284**	30%
Defaulted	**6,894**	83%
Stopped ART	**96**	1%
Died	**1,294**	16%

36 month survival all ages

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations	**34,000**	**100%**
Transfers out (double counted)	**4,927**	14%
Total not transferred out (patients in cohort)	**29,073**	86%
Total alive on ART	**19,449**	67%
Total not retained	**9,624**	33%
Defaulted	**7,775**	81%
Stopped ART	**130**	1%
Died	**1,719**	18%

* Subgroups may not add to 100% due to rounding

ART survival analysis

Malawi (national)

2016 Q1 (Quarter)

48 month survival all ages

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations	**44,435**	**100%**
Transfers out (double counted)	**7,316**	16%
Total not transferred out (patients in cohort)	**37,119**	84%
Total alive on ART	**25,145**	68%
Total not retained	**11,974**	32%
Defaulted	**9,217**	77%
Stopped ART	**202**	2%
Died	**2,555**	21%

60 month survival all ages

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations	**22,986**	**100%**
Transfers out (double counted)	**5,689**	25%
Total not transferred out (patients in cohort)	**17,297**	75%
Total alive on ART	**10,688**	62%
Total not retained	**6,609**	38%
Defaulted	**4,523**	68%
Stopped ART	**70**	1%
Died	**2,016**	31%

72 month survival all ages

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations	**23,075**	**100%**
Transfers out (double counted)	**5,926**	26%
Total not transferred out (patients in cohort)	**17,149**	74%
Total alive on ART	**10,342**	60%
Total not retained	**6,807**	40%
Defaulted	**4,643**	68%
Stopped ART	**100**	1%
Died	**2,064**	30%

84 month survival all ages

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations	**21,661**	**100%**
Transfers out (double counted)	**5,955**	27%
Total not transferred out (patients in cohort)	**15,706**	73%
Total alive on ART	**8,879**	57%
Total not retained	**6,827**	43%
Defaulted	**4,418**	65%
Stopped ART	**61**	1%
Died	**2,348**	34%

* Subgroups may not add to 100% due to rounding

ART survival analysis

Malawi (national)

2016 Q1 (Quarter)

96 month survival all ages

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations	**17,521**	**100%**
Transfers out (double counted)	**5,071**	29%
Total not transferred out (patients in cohort)	**12,450**	71%
Total alive on ART	**6,479**	52%
Total not retained	**5,971**	48%
Defaulted	**3,668**	61%
Stopped ART	**59**	1%
Died	**2,244**	38%

108 month survival all ages

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations	**13,715**	**100%**
Transfers out (double counted)	**3,931**	29%
Total not transferred out (patients in cohort)	**9,784**	71%
Total alive on ART	**4,659**	48%
Total not retained	**5,125**	52%
Defaulted	**2,793**	54%
Stopped ART	**87**	2%
Died	**2,245**	44%

120 month survival all ages

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations	**9,561**	**100%**
Transfers out (double counted)	**2,886**	30%
Total not transferred out (patients in cohort)	**6,675**	70%
Total alive on ART	**2,916**	44%
Total not retained	**3,759**	56%
Defaulted	**1,860**	49%
Stopped ART	**40**	1%
Died	**1,859**	49%

6 month survival OptionB+

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations	**8,204**	**100%**
Transfers out (double counted)	**505**	6%
Total not transferred out (patients in cohort)	**7,699**	94%
Total alive on ART	**5,796**	75%
Total not retained	**1,903**	25%
Defaulted	**1,840**	97%
Stopped ART	**23**	1%
Died	**40**	2%

* Subgroups may not add to 100% due to rounding

ART survival analysis

Malawi (national)

2016 Q1 (Quarter)

12 month survival OptionB+

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations		**8,000**	**100%**
	Transfers out (double counted)	**602**	8%
	Total not transferred out (patients in cohort)	**7,398**	92%
	Total alive on ART	**5,114**	69%
	Total not retained	**2,284**	31%
	Defaulted	**2,180**	95%
	Stopped ART	**33**	1%
	Died	**71**	3%

24 month survival OptionB+

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations		**8,720**	**100%**
	Transfers out (double counted)	**942**	11%
	Total not transferred out (patients in cohort)	**7,778**	89%
	Total alive on ART	**5,137**	66%
	Total not retained	**2,641**	34%
	Defaulted	**2,497**	95%
	Stopped ART	**53**	2%
	Died	**91**	3%

36 month survival OptionB+

Survival and retention in ART program *

ART cohort registration group outcomes

Total ART clinic registrations		**10,229**	**100%**
	Transfers out (double counted)	**1,274**	12%
	Total not transferred out (patients in cohort)	**8,955**	88%
	Total alive on ART	**5,832**	65%
	Total not retained	**3,123**	35%
	Defaulted	**2,910**	93%
	Stopped ART	**53**	2%
	Died	**160**	5%

* Subgroups may not add to 100% due to rounding

STI site report

Malawi (national)

2016 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

STI clients treated in the reporting period

*

Total STI clients

Total STI clients treated		**59,551**	**100%**
	Index patients treated (symptomatic)	**48,644**	82%
	Partners treated	**10,907**	18%

Sex

Males		**23,956**	**40%**
Females		**35,595**	**60%**
	Non-pregnant	**31,124**	87%
	Pregnant	**4,471**	13%

Age group

Age group A (0-19 years)		**5,475**	**9%**
Age group B (20-24 years)		**14,385**	**24%**
Age group C (25+ years)		**39,691**	**67%**

Client type

Symptomatic cases		**53,290**	**89%**
	Index cases	**48,644**	91%
	Partners symptomatic	**4,646**	9%
Partners asymptomatic		**6,261**	**11%**

STI treatment history

Never treated for STI		**43,948**	**74%**
Previously treated for STI		**15,603**	**26%**
	Old >3 months ago	**11,472**	74%
	Recent ≤3 months ago	**4,131**	26%

STI syndromic diagnosis

GUD		**10,790**	**17%**
UD		**15,592**	**24%**
AVD		**19,182**	**30%**
	Low risk	**7,777**	41%
	High risk	**11,405**	59%
LAP		**9,406**	**15%**
SS		**810**	**1%**
BU		**678**	**1%**
BA		**1,032**	**2%**
NC		**210**	**0%**
Genital Warts		**497**	**1%**
Syphilis RPR VDRL		**2,163**	**3%**
Other STI		**3,605**	**6%**

STI partner notification

Total partner notification slips issued		**15,478**	**100%**
	Total partners returned	**10,907**	70%
	Total partners not seen	**4,571**	30%

* Subgroups may not add to 100% due to rounding

STI site report

Malawi (national)

2016 Q1 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

STI clients treated in the reporting period

*

HIV test / ART status

HIV status not ascertained	**18,437**	**31%**
HIV status ascertained	**41,114**	**69%**
HIV negative (new test)	**31,808**	77%
HIV positive	**9,306**	23%
New positive	**2,590**	28%
Previous positive	**6,716**	72%
Not on ART	**1,244**	19%
On ART	**5,472**	81%

STI clients referred for services

Lab	**691**	**3%**
Gynae review	**280**	**1%**
Surgical review	**238**	**1%**
Repeat HTC	**18,541**	**78%**
ART (for assessment)	**1,731**	**7%**
PMTCT	**179**	**1%**
Other (service referrals)	**2,176**	**9%**

* Subgroups may not add to 100% due to rounding