
*Government of Malawi  Ministry of Health*

# Integrated HIV Program Report
# October – December 2012

- *HIV Testing and Counselling*
- *Post Exposure Prophylaxis*
- *HIV Exposed Child Follow-Up*
- *Pre-ART*
- *Prevention of Mother to Child Transmission / Antiretroviral Therapy*
- *TB / HIV*
- *Sexually Transmitted Infections*
- *Supply of HIV Program Commodities*

# 1 Executive Summary

This is the sixth quarterly HIV Program report after implementation of the 2011 Integrated Clinical HIV Guidelines in July 2011. A summary of the key achievements between **October and December 2012** is provided below:

- Scale-up of integrated HIV services had reached the following number of sites:
  - **825** static (607 within and 218 outside of health facilities) and 534 outreach HTC sites
  - **651** (static) ART sites
  - **585** PMTCT sites (Option B+)
  - **577** Pre-ART sites
  - **579** sites with HIV-exposed child follow-up
- **378,560** persons were tested and counselled for HIV and **33,718 (9%)** were HIV positive; **143,906 (38%)** people tested for the first time.
- **111,503 (68%)** of 163,510 women at ANC had their HIV status ascertained; **9,891 (9%)** of these were HIV positive. **117,730 (88%)** of 132,755 women at maternity had their HIV status ascertained; **9,647 (8%)** of these were HIV positive.
- **24,168** patients started ART during this quarter; this is a further decrease from the previous quarter (**26,909**). Some of this decline was probably due to a shortage of HIV test kits.
- **404,905** patients were alive and on ART by end of December 2012; **72,612 (19%)** of 376,094 on first line adult regimens were on ART regimen 5A (tenofovir / lamivudine / efavirenz)
- **80%** of adults and **81%** of children were retained alive on ART at 12 months after ART initiation.
- A total of **10,882** HIV positive pregnant women were on ART: **4,211 (39%)** of these were already on ART when getting pregnant and **6,671 (61%)** started ART during pregnancy/delivery. **6,349** (95%) of pregnant women started ART due to ***Option B+*** (in WHO clinical stage 1 or 2) and **322** (5%) due to a low CD4 count and/or WHO clinical stage 3 or 4.
- An additional **2,297** breastfeeding women started ART due to ***Option B+*** (in WHO clinical stage 1 or 2).
- **5,701 (84%) of 6,815** women started under ***Option B+*** were retained at 6 months after ART initiation (6-month retention outcomes were missing for 1,348 women registered, mainly at sites with electronic data systems).
- **9,082 (8%)** of infants discharged alive from maternity were known to be HIV exposed, **8,174 (90%)** of these received ARV prophylaxis. **5,397 (59%)** were enrolled in exposed child follow-up before age 2 months.
- A total of **11,156** HIV exposed children and **8,774** pre-ART patients enrolled for follow-up in *HIV Care Clinics (HCC)* during this quarter.
- **658** health workers were trained in the new integrated PMTCT/ART curriculum during Q4 2012, bringing the total number trained in the 2011 guidelines to **5,297**. **112** District PMTCT/ART coordinators were trained in developing plans for Elimination of Mother to Child Transmission.
- **30** TB Officers in the SE Zone were trained in ART/TB management.
- **60** HTC Counsellors received training in collecting dried blood spot specimens for Early Infant Diagnosis (EID).
- **100** facilities received mentoring for HIV Exposed Child Follow-Up and EID specimen collection.
- **598** Health workers at 92 facilities in the SE Zone and **227** health workers and support staff at 33 facilities in the N Zone received clinical mentoring in provision of PMTCT/ART.

# 2 Integrated HIV Program Overview

In July 2011, Malawi started implementing a revised HIV Program in all health facilities following the ***2011 Malawi Integrated Clinical HIV Guidelines***. These guidelines were developed in 2010/11 by the PMTCT/ART Technical Working Group led by the Department for HIV and AIDS of the Ministry of Health. Key program 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 is integrated with maternal ART follow-up (*Option B+*) to improve retention and adherence.

- **Early ART initiation**: universal ART for children under 2 years (confirmed HIV infection), children 2-4 years with an absolute CD4 count of ≤750 (CD4% no longer required), children over 5 years and adults with a CD4 count ≤350, patients co-infected with HIV and hepatitis B.

- Transition to **more favourable 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 regimen 5A had to be restricted to certain patient groups due to funding limitations. Additional funding from Global Fund and from PEPFAR has now been secured and a full transition is scheduled to start in July 2013.

- Standard **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 (350) through scheduled CD4 count monitoring. Malawi had no standard pre-ART program until July 2011, although some sites had already started offering elements of the new standard pre-ART package.

- 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.

- 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 <u>all</u> health facilities with Maternal and Child Health services. This required a massive acceleration of the **decentralization of ART services** from 303 (static) sites by June 2011 to over 600 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 are working towards a full integration of their respective site supervision exercises.

For the first time, all 20 supervision teams were joined by laboratory supervisors who administered the proficiency testing exercise to all HTC providers at the visited sites and carried out a review of general lab operations at all hospitals. The findings from this exercise will be summarized in a separate report.

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 as priority for Clinical Mentoring programme

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. The involvement of a growing number of health workers from sites all over the country who participate in the quarterly supervision exercise has helped to build a strong identity for the national HIV Program 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. However, HTC site supervision was suspended this quarter due to preparations for the *HTC Intensive Skills* trainings.

## 3.2 Supervision Outcomes

**666** public and private sector facilities were visited for **clinical HIV program supervision** between 14th January and 1st February 2013. The large number of sites included in this supervision round was covered by **81** supervisors working in **20** teams. The teams spent a total of **1,732 working hours** at the sites. Each site visit lasted **2.6** hours on average, but up to 2 days was spent at the busiest sites. **168** clinic teams were awarded a *Certificate of Excellence* for **excellent performance.** The number of sites with excellent performance decreased by 99 compared with the previous quarter. This does not imply a decrease in performance, but was due to an expansion of the service quality checklist used in this supervision round, which now covers more operational aspects such as the integration of PMTCT/ART into ANC and MNCH services. **47** sites had significant weaknesses and were rated to require **intensive mentoring**. This is a considerable decrease from 90 in the previous quarter. The capacity to provide site mentoring will need to be further expanded over the next months.

**Table 1:** Outcomes of integrated HIV services supervision for 2012 Q4

| Zone | Total facil. visited* | Supervision hours spent at facilities | | Performance (# and % of sites) | |
|---|---|---|---|---|---|
| | | Total | Average per site | Excellent perform. | Mentoring needed |
| NZ | 115 | 244 | 2.1 | 28 24% | 12 10% |
| CEZ | 93 | 241 | 2.6 | 11 12% | 14 15% |
| CWZ | 152 | 367 | 2.4 | 43 28% | 9 6% |
| SEZ | 154 | 416 | 2.7 | 34 22% | 3 2% |
| SWZ | 152 | 464 | 3.1 | 52 34% | 9 6% |
| Malawi | 666 | 1,732 | 2.6 | 168 25% | 47 7% |

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

**Table 1** provides a summary of the supervision outcomes by zone. Most facilities were using the standard national M&E tools. **83** sites had cumulatively registered more than 2,000 ART patient and **28** of these had registered more than 5,000. **34 (41%)** of these high burden sites were using electronic data system for ART (EDS). Some NGO supported sites were using custom tools compatible with the national standard reporting requirements.

# 4 Inventory of Sites and Services

A total of **825** static sites were reporting HTC services in Q4 2012 and **218** of these were outside of health facilities. In addition, HTC was provided at 534 mobile or outreach sites.

**Table 2:** Facilities with integrated HIV services in the 5 Zones. Availability of services defined by performance (at least 1 patient enrolled) during 2012 Q4

| Zone | Total fac.(1 | Facilities providing HIV services | | | | CD4 count machines (2) | | |
|---|---|---|---|---|---|---|---|---|
| | | Exp. child | Pre-ART | PMTCT B+ | ART | Installed | Functional | Results |
| NZ | 119 | 104 87% | 105 88% | 105 88% | 114 96% | 18 15% | 14 78% | 2,444 |
| CEZ | 91 | 87 96% | 81 89% | 83 91% | 90 99% | 11 12% | 11 00% | 2,447 |
| CWZ | 155 | 121 78% | 128 83% | 131 85% | 149 96% | 22 14% | 13 59% | 2,610 |
| SWZ | 154 | 121 79% | 123 80% | 122 79% | 147 95% | 20 13% | 18 90% | 14,284 |
| SEZ | 156 | 146 94% | 140 90% | 144 92% | 151 97% | 18 12% | 14 78% | 7,060 |
| Malawi | 675 | 579 86% | 577 85% | 585 87% | 651 96% | 89 13% | 70 79% | 28,845 |

(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 **675** sites designated to provide clinical HIV services in Q4 2012, by zone. At the national level, there were **651** (static) sites with at least one patient on ART, **585** sites had enrolled women under PMTCT Option B+; **577** sites were providing pre-ART services and **579** had enrolled HIV exposed children for follow-up. ART services were now available at almost all designated sites in all 5 zones. The SE zone continued to lead in the number of sites providing PMTCT Option B+ (92%).

CD4 count machines (including 'point of care' machines) were installed at **89** sites, but only **70 (79%)** of these had produced at least 1 result during Q4. The total number of CD4 results produced had declined from 33,524 in Q3 to **28,845** during Q4. Half of these outputs were generated in the SW zone, implying that many CD4 machines continued to be down or to be running considerably below capacity.

# 5 HIV Testing and Counselling Program Outputs

**378,560** people[1] were tested and counselled for HIV between October and December 2012. HTC program outputs reverted back to average quarterly numbers after the increase in Q3 through the HIV Testing Week campaign in August. **33,718** (9%) of all people tested were HIV positive.

Out of 378,560 people tested and counselled, **33%** were males and **67%** were females. **48%** of females were pregnant and **52%** were not pregnant. The proportion of males (**49%**) and non-pregnant females (**51%**) was very similar, implying gender balanced access to HTC services. Pregnant women have to be excluded from the comparison of male and female access to HTC

[1] 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 individual people.

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

**48%** of all people tested and counselled were 25 years and above, **40%** were between 15-24 years and **12%** were children below 15 years. **83,274 (22%)** accessed HTC with their partners (as a couple), which is higher than in the previous quarter.

**143,906 (38%)** of 378,560 people tested and counselling accessed HTC for the first time in their life. Based on the cumulative number of people who accessed HTC for the first time, a total of **4,276,462** people were tested since introduction of the 'first time HTC access' indicator in July 2007. Detailed HTC service data are shown in the Annex.

# 6 Post Exposure Prophylaxis (PEP)

A total of **649** persons received PEP during Q4 2012. This is similar to the previous quarter (691).

# 7 Provider-Initiated Family Planning (PIFP)

The 2011 Integrated Clinical HIV Guidelines encourage health workers to routinely provide condoms to all adults in pre-ART and ART clinics. Women should also be able to receive 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 from elsewhere.

**Table 3:** Number and % of women retained in HIV care * who were on injectable contraceptives (Depo) by the end of 2012 Q4.

| | Pre-ART | | ART | | Both patient groups | |
|---|---|---|---|---|---|---|
| Zone | Tot. women | On Depo | Tot. women | On Depo | Tot. women | On Depo |
| NZ | 972 | **238** *25%* | 23,041 | **5,893** *26%* | 24,013 | **6,131** *26%* |
| CEZ | 615 | **109** *18%* | 18,726 | **2,450** *13%* | 19,341 | **2,559** *13%* |
| CWZ | 1,231 | **240** *20%* | 46,815 | **6,571** *14%* | 48,045 | **6,811** *14%* |
| SEZ | 4,187 | **1,383** *33%* | 66,417 | **20,082** *30%* | 70,604 | **21,466** *30%* |
| SWZ | 4,947 | **583** *12%* | 80,358 | **6,436** *8%* | 85,305 | **7,018** *8%* |
| Malawi | 11,951 | **2,554** *21%* | 235,357 | **41,431** *18%* | 247,308 | **43,985** *18%* |

* 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 **43,985 (18%)** women received Depo-Provera from HIV clinics in Q4 2012. This is an increase from 34,567 in Q3. The SE Zone had achieved the highest coverage among women in pre-ART and ART. PIFP access was affected by stock-outs of Depo-Provera: only 59% of ART/PMTCT sites had any stocks in January 2013. Inclusion of Depo-Provera in the quarterly distribution of ARVs and other HIV commodities is expected to increase PIFP outputs in 2013.

# 8 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** shows that **351,486 (72%)** of all HIV patients were on CPT at the end of Q4 2012. Compared with the previous quarter, coverage had increased in all 3 eligible patient groups. This was due to the distribution of 435,000 packs of cotrimoxazole in November 2012 (see page 22 for further supply chain details). CPT coverage is expected to recover fully in 2013 with the resumption of quarterly distribution of adequate quantities of cotrimoxazole for CPT.

**Table 4**: Number and % of patients retained in HIV care who were on cotrimoxazole and isoniazid preventive therapy (CPT, IPT) by the end of 2012 Q4.

| | CPT | | | | | | | | IPT | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Exp. child | | Pre-ART | | ART | | All patient groups | | Pre-ART | |
| Zone | Tot. pat. | On CPT | Tot. pat. | On CPT | Tot. pat. | On CPT | Tot. pat. | On CPT | Tot. pat. | On IPT |
| NZ | 4,390 | **2,476** *56%* | 3,067 | **2,829** *92%* | 41,264 | **39,215** *95%* | 48,721 | **44,519** *91%* | 3,067 | **1,727** *56%* |
| CEZ | 4,152 | **2,151** *52%* | 2,123 | **1,933** *91%* | 32,876 | **24,673** *75%* | 39,151 | **28,758** *73%* | 2,123 | **1,070** *50%* |
| CWZ | 9,032 | **6,024** *67%* | 4,308 | **3,527** *82%* | 82,102 | **49,795** *61%* | 95,442 | **59,346** *62%* | 4,308 | **2,385** *55%* |
| SEZ | 15,954 | **11,101** *70%* | 11,607 | **8,182** *70%* | 106,414 | **76,253** *72%* | 133,975 | **95,536** *71%* | 11,607 | **6,537** *56%* |
| SWZ | 17,072 | **11,868** *70%* | 13,019 | **10,716** *82%* | 138,094 | **100,743** *73%* | 168,185 | **123,327** *73%* | 13,019 | **8,823** *68%* |
| Malawi | 50,600 | **33,620** *66%* | 34,124 | **27,187** *80%* | 400,750 | **290,678** *73%* | 485,474 | **351,486** *72%* | 34,124 | **20,542** *60%* |

# 9 TB / HIV Interventions

## 9.1 Intensified 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.

**393,034 (98%)** of all patients retained on ART were screened for TB at their last visit before end of December 2012. As of that visit, **3,584 (1%)** patients were new TB suspects and had presumably been referred for examination by a clinician and for TB investigations. The number of new TB suspects more than doubled from 1,626 in the previous quarter, which suggests that the sensitivity of TB screening and/or the completeness of documentation has improved. **1,708 (<1%)** patients had confirmed TB (clinical or lab based). Out of these, **1,576 (92%)** were confirmed to be on TB treatment and **132 (8%)** 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) | 7,716 | 2% |
| ICF done | 393,034 | 98% |
| TB not suspected | 387,742 | 99% |
| TB suspected | 3,584 | 1% |
| TB confirmed | 1,708 | 0% |
| TB confirmed, not on treatment | 132 | 8% |
| TB confirmed, on TB treatment | 1,576 | 92% |

### 9.2 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. **20,542 (60%)** of 34,124 patients retained in pre-ART were on IPT by the end of December 2012. This is a doubling from the 9,613 pre-ART patients on IPT in the previous quarter. IPT coverage was highest in SE zone (68%). A further increase in IPT implementation is expected over the next quarters.

## 10 HIV-Related Diseases

**Table 5** shows the number of patients treated for 2 key HIV-related indicator diseases (data from TB and ART registers or ART treatment cards). The number of new TB cases decreased to **5,013** in Q4 2012. The HIV ascertainment rate remained very high at **93%; 55%** of TB patients whose HIV status was ascertained were positive and **56%** of these were already on ART when starting TB treatment. The sustained high number already on ART may be due to the scale-up of intensified active TB case finding (ICF) in ART clinics, resulting in increased TB case detection rates among ART patients. Data on oesophageal candidiasis and cryptococcal meningitis cases were distorted this quarter due to confusion over a new reporting mechanism from the Diflucan registers. The Diflucan donation program has received renewed attention and significant stocks of fluconazole were distributed to all sites in November 2012. This is expected to result in an increased number of reported cases.

**Table 5:** Number new cases of key HIV-related diseases registered per quarter (KS = Kapos cryptococcal meningitis, OC = oesophageal candidiasis).

| | TB | | | | KS * |
|---|---|---|---|---|---|
| | Tot. cases | HIV status asc. | HIV positive | Already on ART | Tot. cases |
| 2012 Q1 | 4,961 | 4,486 *90%* | 2,815 *63%* | 1,531 *54%* | 571 |
| 2012 Q2 | 4,961 | 4,572 *92%* | 2,769 *61%* | 1,577 *57%* | 474 |
| 2012 Q3 | 5,723 | 5,257 *92%* | 3,179 *60%* | 1,775 *56%* | 492 |
| 2012 Q4 | 5,013 | 4,654 *93%* | 2,540 *55%* | 1,423 *56%* | 428 |

## 11 HIV-Exposed Child Follow-Up

### 11.1 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; 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.

## 11.2 HIV Exposed Child Registration Data

This is the 6th quarterly report from the standard follow-up program for HIV exposed children. **11,156** HIV exposed children were newly enrolled into follow-up during Q4 2012; **5,397 (48%)** of these were under the age of 2 months. This represents timely enrolment for **59%** of the 9,082 known HIV exposed children discharged from maternity this quarter. In this quarter, the total number of new enrolments (11,156) exceeds by 2,074 the total number of known HIV exposed children discharged from maternity (9,082). 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 almost complete.

The documentation of follow-up outcomes, particularly the updating of DNA-PCR results on patient cards, may still incomplete at some sites. This may have led to underreporting of HIV status ascertainment among the 2 month old cohort.

## 11.3 Birth Cohort Outcomes

There were **6,501** infants in the **2 month age cohort**. **1,182 (18%)** had received a DNA-PCR result. **44 (4%)** of these were confirmed HIV infected. An additional **44** infants were diagnosed with *presumed severe HIV disease,* which means that a total of **88** infants were eligible for ART. **39 (44%)** of these had started ART. The proportion of positives starting ART early decreased further from the previous quarters. Out of the entire 2-month age cohort, **5,763 (89%)** were retained in exposed child follow-up, **39 (1%)** had started ART and **21 (<1%)** were discharged confirmed uninfected[2]. **8 (<1%)** were known to have died and **631 (10%)** had been lost to follow-up.

[2] 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.

There were **5,907** children in the **12 month age cohort**. Current HIV infection status was known for **1,134 (19%)** children (DNA-PCR or rapid antibody test) and **118 (10%)** of these were confirmed HIV infected. **31 (1%)** additional children had been diagnosed with *presumed severe HIV disease,* which means that a total of **149** children were eligible for ART. **95 (64%)** of these had started ART. Out of the entire age cohort, **3,957 (68%)** were retained in exposed child follow-up, **95 (2%)** had started ART and **67 (1%)** were discharged confirmed uninfected[2]. **1,665 (29%)** were lost to follow-up and **48 (1%)** were known to have died.

There were **2,034** children in the **24 month age cohort**. Current HIV infection status was known for **1,089 (54%)** children (DNA-PCR or rapid antibody test) and **88 (8%)** of these were confirmed HIV infected. **28** additional children had been diagnosed with *presumed severe HIV disease,* which means that a total of **116** children were eligible for ART. **78 (67%)** of these had started ART. Out of the entire age cohort, **502 (25%)** were retained in exposed child follow-up, **78 (4%)** had started ART and **766 (38%)** were discharged confirmed uninfected[2]. **636 (32%)** were lost to follow-up and **30 (2%)** were known to have died.

***Confirmed HIV-free survival at age 24 months*** in this quarter was only **38%**, which was implausibly low and related to the fact that only 54% in this cohort had a known HIV status. 945 (46%) children in this cohort were classified as '*current HIV infection status unknown*' and many of these may be among the 636 children lost to follow-up and the 30 children who had died. However, 502 (25%) 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.

# 12 Pre-ART

## 12.1 Pre-ART Registration Data

A total of **8,774** patients were newly registered for pre-ART follow-up in Q4 2012, which is 387 fewer than in the previous quarter. **974 (11%)** of these were children aged 2-14 years. Several sites had already established pre-ART services before July 2011 and the cumulative number of pre-ART patients ever registered was **111,669**.

## 12.2 Cumulative Pre-ART Follow-up Outcomes

**34,124 (32%)** of all patients ever registered were retained in pre-ART follow-up by the end of Q4 2012; **36,698 (35%)** had started ART; **29,535 (28%)** had been lost to follow-up; **5,204 (5%)** were known to have died. The proportion of patients who started ART will continue to increase in the cumulative pre-ART cohort analysis over time. Based on a subtraction of cumulative outcomes from the previous quarter, **10,873** pre-ART patients started ART during Q4 2012 and **1,425** were lost to follow-up. There were inconsistencies in the reporting of cumulative deaths, which showed an apparent decline by 156 compared with the previous quarter.

CPT and IPT coverage both doubled from the previous quarter: in Q4 2012, **27,187 (80%)** of patients retained in pre-ART were on CPT and **20,542 (60%)** were on IPT. **2,554 (21%)** of 11,951 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.

# 13 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 from the 2nd trimester of 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.

## 13.1 Data Sources and Reporting Methods

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 becoming pregnant. Implementation of *Option B+* will further increase ART coverage in this group. **Maternal PMTCT coverage** is estimated from the number of pregnant women who were already on ART when getting pregnant (from maternity reports) ***plus*** those who newly started ART when pregnant (from 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 95% 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. In contrast, **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 became pregnant after starting ART. This is why both data sources have to be combined for the estimation of the total ART coverage among pregnant women.

**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.

New standard M&E tools for ANC and maternity were implemented in Malawi in January 2010 and revised tools have been distributed in Q2 2012 to reflect the Option B+ policy. ANC and maternity clinic registers and reporting forms include patient management information as well as all relevant data elements for M&E of 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. 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.

Coverage was calculated by dividing the number of patients served by population denominators. The denominators were derived from expected pregnancies based on population projections and HIV prevalence from epidemiological surveillance (source: National HIV Prevalence and AIDS Estimates Report for 2010). There are an estimated 15,750 HIV infected pregnant women in the population per quarter (1/4 of 63,000 per annum).

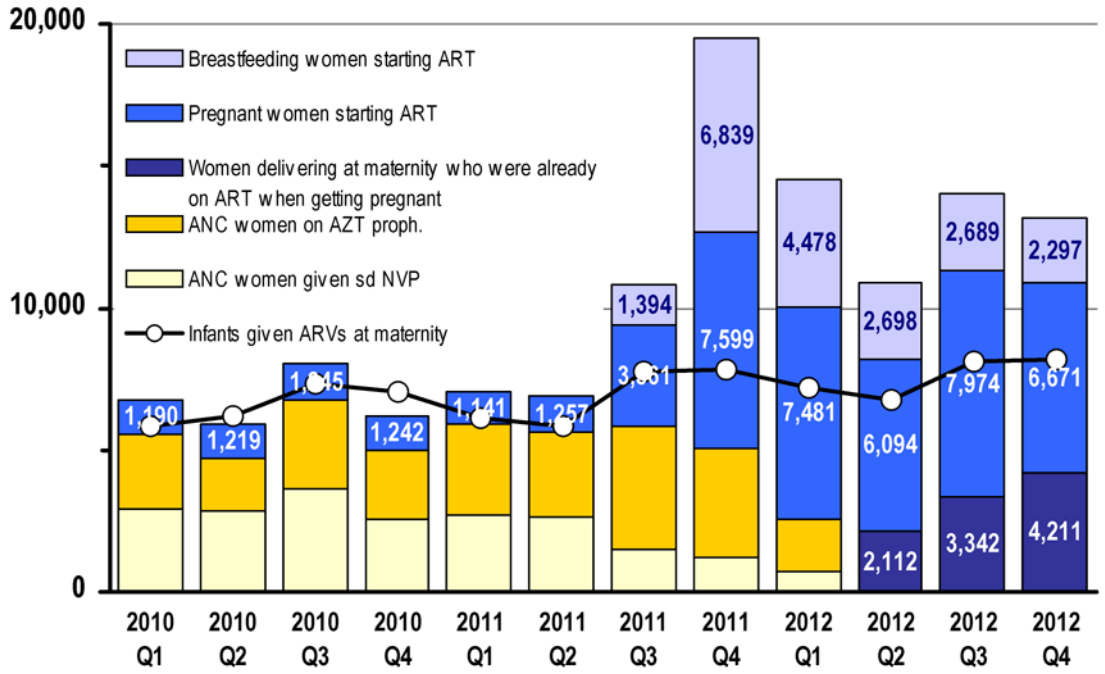
## 13.2 ARV Coverage among Pregnant / Breastfeeding Women and Exposed Infants

**10,882** pregnant women were on ART in Q4 2012. This is based on the **4,211** women at maternity who were already on ART when getting pregnant (maternity report, see below) and the **6,671** women who newly initiated ART while pregnant (ART report, see below). An additional **2,297** 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 **13,179**. 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. **8,174** infants were confirmed to have started NVP prophylaxis at maternity.

**Figure 1** shows the transition from prophylactic ARV regimens for HIV infected mothers to universal ART under ***Option B+***. The (less effective) single dose NVP regimen and AZT combination prophylaxis were phased out by April 2012. The average number of pregnant women starting ART each quarter **increased almost 6-fold** from **1,221** in the 12 month period before introduction of Option B+ to an average of **7,164** since Q4 2011. The **10,882** pregnant women on ART in Q4 2012 represent **69% coverage** of the estimated 15,750 HIV positive pregnant women in the population per quarter. This is an increase from the previous quarter, but ART coverage among pregnant women has remained slightly below target. This was mainly due to challenges with supply and stock management of HIV test kits, compounded by sub-optimal sensitivity of testing under field conditions at ANC.

**Figure 1: 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.




## 13.3 HIV Services at ANC

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

**147,429** women attended ANC for their first visit between October and December 2012. This is below the estimated 151,750 pregnant women in the Malawian population during one quarter. Initial ANC visits were probably reduced to due to the lower number of regular working days in the last quarter of the year.

The following report covers the outcomes of the **163,510** women who started ANC between April and June 2012 and who had finished ANC by December 2012. **13,213 (8%)** of the women started ANC in their first trimester. **27,129 (17%)** of the women were tested for syphilis at ANC and **650 (2%)** were syphilis positive. The syphilis testing rate slightly increased compared with the previous quarter (15%). The low testing rates probably explains the higher (2%) than expected proportion (<1%) found positive as the testing was likely selective of those suspected to be positive. Only **34,220 (21%)** of women in this cohort attended the minimum of 4 focussed ANC visits.

### 13.3.1 HIV Ascertainment at ANC

**111,503 (68%)** of ANC attendees had their HIV status ascertained. This is a decline from 78% in the previous quarter which was mainly caused by stock outs of test kits that continued to affect the program in Q4 2012. Out of all women with ascertained HIV status, **8,139 (7%)** presented with a valid documented previous HIV test result and **103,364 (93%)** received a new HIV test result at ANC. A total of **9,891 (9%)** women were found HIV positive. This is lower than the estimated 12% HIV prevalence among pregnant women and this is likely due to problems with sensitivity of HIV rapid testing in high volume service settings. The **111,503** women whose HIV status was ascertained at ANC represent **73%** of the expected 151,750 pregnant women in the population.

## 13.4 ARV Coverage at ANC

**8,511 (86%)** of (known) HIV infected women attending ANC received ART. This represents **54%** coverage of the estimated 15,750 HIV positive pregnant women per quarter at the population level. ART coverage among pregnant women increased from the previous quarter, but overall levels remain unsatisfactory due to challenges with supply and stock management of HIV test kits, compounded by sub-optimal sensitivity of testing under field conditions at ANC.

Of the **8,542** women who were known at ANC to receive ART, **3,428 (40%)** were already on ART when starting ANC, **3,720 (44%)** initiated before 28 weeks of pregnancy and **1,363 (16%)** initiated during the last trimester of pregnancy. Based on the ART report, about **1,588** additional pregnant women initiated ART this quarter and most of these are assumed to have started ART after their last ANC visit.

**8,270 (84%)** of HIV infected women at ANC were on Cotrimoxazole Preventive Therapy.

**4,818 (49%)** of HIV infected women attending ANC received the infant dose of ARVs (nevirapine syrup) to take home. This is an increase by 9% from the previous quarter and probably a result of a series of clinical review meetings with service providers around the country where special emphasis was placed on weak implementation areas.

## 13.5 HIV Services at Maternity

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

Between October and December 2012, **126,236** women were admitted for delivery to maternity; **6,519 (5%)** of these were referred to another facility before delivery, resulting in **132,755** total admissions to maternity during Q4 2012. Out of all admissions, **123,141 (95%)** delivered at health facilities, while **6,408 (5%)** had already delivered before reaching a facility. The **123,141** facility deliveries represent **83%** of the estimated 151,750 deliveries in the population which is the same as the 83% reported in the Integrated Household Survey Report of 2010-2011.

A total of **119,379 (94%)** deliveries were conducted by skilled birth staff, **1,550 (1%)** by paramedical staff and **5,958 (4%)** were not attended by any of the above (probably mainly among women who delivered before reaching maternity). **14,533 (11%)** of women developed obstetric complications.

The most common leading complications were obstructed / prolonged labour (**4,781** cases) and post-partum haemorrhage (**1,856** cases). A total of **129,549** babies were born, **124,424 (96%)** were singletons and **5,125 (4%)** were twins/multiples. There were **127,095 (98%)** live births and **2,454 (2%)** stillbirths. **125,738 (99%)** of babies born alive were discharged alive and **1,357 (1%)** died before discharge. **126,733 (>99%)** of women were discharged alive and **154 (<1%)** women died before discharge, which is equivalent to a maternal mortality ratio of **121 per 100,000** live births among women attending maternity.

### 13.5.1 HIV Ascertainment at Maternity

**117,730 (88%)** women had their HIV status ascertained at maternity. Out of these, **113,604 (96%)** presented with a valid previous HIV test result and **4,126 (4%)** received a new HIV test result. A total of **9,647 (8%)** women were HIV positive and **108,083 (92%)** were negative. The **117,730** women whose HIV status was ascertained at maternity represent **78%** of the expected 151,750 women delivering in the population.

HIV exposure status was ascertained for **112,006 (89%)** out of 125,738 babies born and discharged alive. **9,082 (8%)** of these were born to a known HIV positive mother.

### 13.5.2 ARV Coverage at Maternity

A total of **8,985 (93%)** of HIV infected women attending maternity received ART. This is a slight increase from the previous quarter (8,844). Out of these, **4,211 (47%)** had started ART before pregnancy, **2,193 (24%)** initiated ART during the 1$^{st}$ or 2$^{nd}$ trimester, **2,194 (24%)** initiated during the 3$^{rd}$ trimester and **387 (4%)** initiated ART at maternity.

A total of **8,174 (90%)** of infants who were known HIV exposed and discharged alive started daily NVP prophylaxis at maternity. This represents **52%** coverage of the estimated 15,750 HIV exposed infants born in the population in this quarter.

# 14 ART Access and Follow-Up Outcomes

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

## 14.1 New ART Registrations during Q4 2012

By the end of December 2012, there were **651 static ART sites** in Malawi, managed by government, mission, NGOs and the private sector. Out of these, **70** were ART facilities in the private sector, charging a nominal MK500 per monthly prescription of drugs per patient.

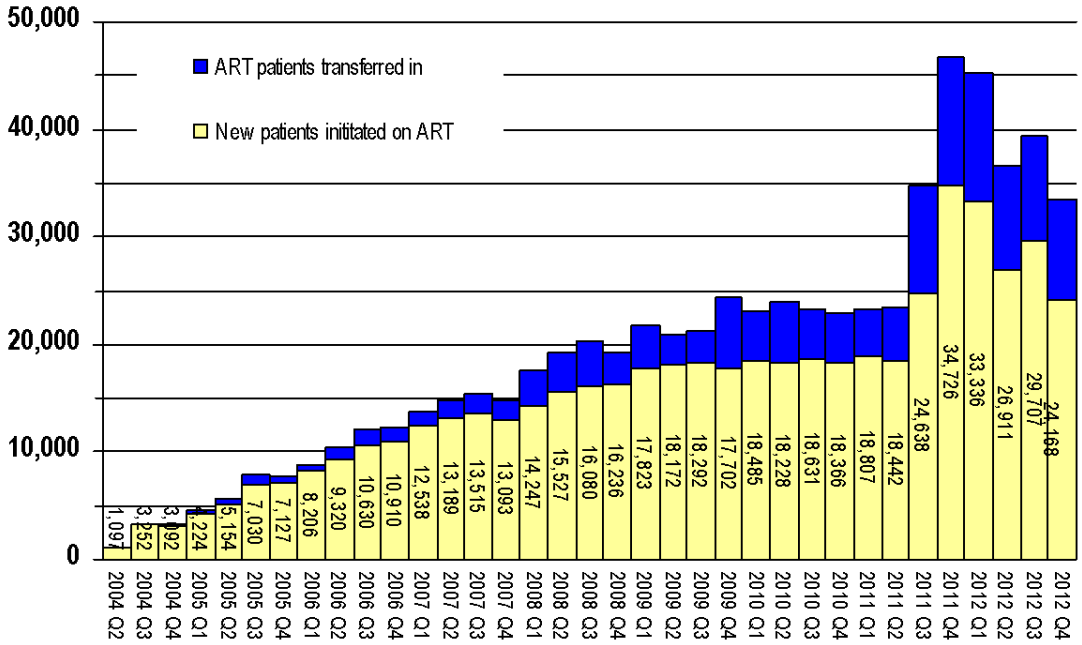
Implementation of the Malawi Integrated Clinical HIV Guidelines started in July 2011 and triggered a massive surge in new ART initiations (see **Figure 2**). **24,168** patients initiated ART in Q4 2012. This is the lowest number of quarterly initiations since implementation of the 2011 guidelines. The rate of transfers between sites remained high: **8,614** patients transferred between clinics (**26%** of the total **33,490** new ART clinic registrations).

Among all new registrations **33%** were males and **67%** females. **6,671 (30%)** of all females were pregnant and **6,349 (95%)** of these were started under ***Option B+*** in WHO stage 1 or 2, independent of their CD4 count. **322** pregnant women (the remainder) were otherwise eligible for ART, either due to WHO stage 3 or 4 conditions or because of a CD4 count <350. An additional **2,297** women in WHO stage 1 or 2 were started because of breastfeeding, bringing the total

number of women started under ***Option B+*** [3] to **8,968**. The number of ART initiations in Q4 2012 was lower than projected, probably mainly due to challenges with HIV testing.

**Figure 2: 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 **17,660** patients started in WHO stage 1 or 2 and **8,536 (48%)** of these due to a CD4 count below 350. This is an unexpected decrease from the previous quarter (10,074), which was probably due to a decline in CD4 count testing (the number of results produced decreased from 33,524 in Q3 to 28,845 in Q4). The roll-out of the Pre-ART program and the scheduled monitoring of CD4 counts in these patients is generally expected to increase the number of early ART initiations. **13,127 (39%)** of patients registered started in WHO stage 3 and **2,181 (7%)** started in stage 4.

**2,952** children were registered in Q4 2012. **261** of these were registered under the policy of universal ART for children aged 12-23 months in WHO stage 1 or 2, independent of CD4 count. This is a slight decrease from the previous quarter (289). The number of children with presumed severe HIV disease increased slightly from 178 Q3 to **192** in Q4 2012 and the number of infants in WHO stage 1 or 2 who started due to confirmed HIV infection through DNA-PCR increased from 155 in Q3 to **165** in Q4 2012. Early paediatric ART access has remained below targets, but the relatively low number may also be due to reduced transmission rates: considering that 9,082 HIV exposed infants were identified at maternity and assuming a 2% transmission rate among the 93% of HIV positive mothers at maternity who received ART (and 20% transmission in the 7% who did not receive ART)[4], only about 296 of these infants may have been infected perinatally during Q4 2012.

**1,759 (5%)** out of all ART clinic registrations were patients with TB: **1,137 (3%)** had a current and **622 (2%)** a recent history of TB. **428 (1%)** of patients registered had Kaposi's sarcoma.

## 14.2 Cumulative ART Registrations up to September 2012

By the end of December, there were a cumulative total of **691,212** clinic registrations, representing **560,325 (81%)** patients who newly initiated ART and **126,182 (18%)** ART patients who transferred

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

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

between clinics. **4,705** (1%) out of all clinic registrations were patients who re-initiated ART after treatment interruption. Out of all registrations, **37**% were males and **63**% were females, **91**% were adults and **9**% were children (<15 years). Private sector clinics accounted for **22,361** (3.2%) of total patient registrations.

## 14.3 ART Outcomes

**404,905 patients were alive on ART** by the end of September 2012. This number includes **4,155** patients who were assumed to be 'in transit' as of the 31st December 2012, based on the difference between **130,337** patients *transferred out* and **126,182** patients *transferred in* at the facilities around the country. This difference is explained by patients registered as a *transfer out* in the last 2 months of the quarter who have not yet arrived at their new site.

Out of the **560,325** patients ever initiated on ART, **404,905 (72%)** were retained alive on ART, **57,287 (10%)** were known to have died, **100,624 (18%)** were lost to follow-up and **2,214** (<1%) were known to have stopped ART. An estimated **369,229** adults and **35,676** children (<15 years) were alive on ART by the end of December 2012**.**

**Figure 3: Patients alive on ART in public and private sector clinics in Malawi**

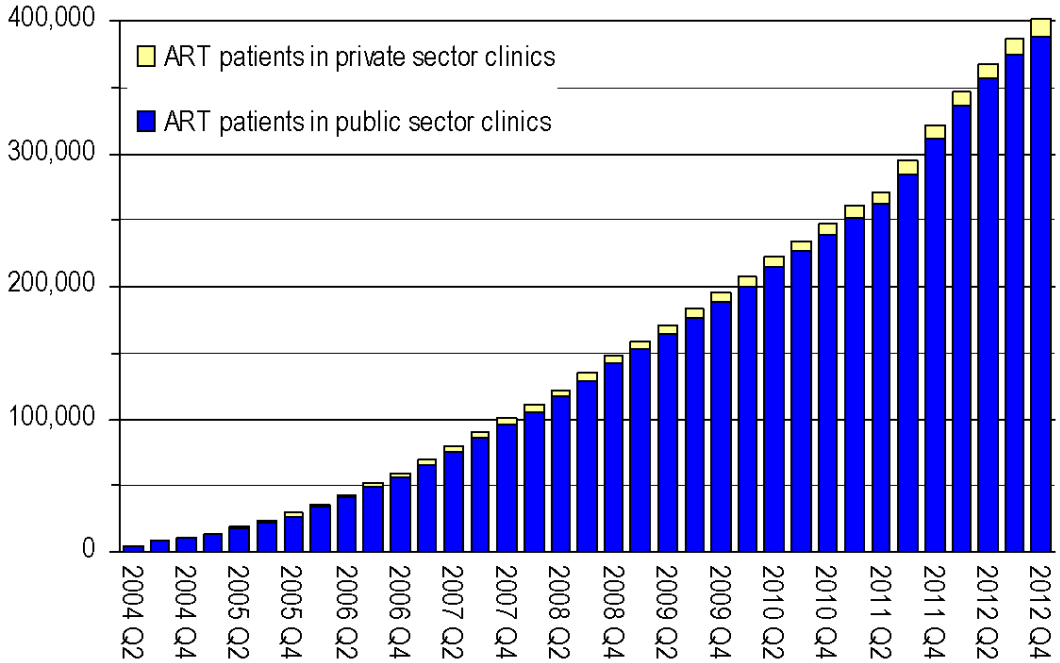



**Figure 3** shows the increase of patients alive on ART by the end of each quarter. The number of patients alive on ART **increased by 13,567** in Q4 of 2012. This is a considerable slowing of the growth observed in the previous quarter (21,902).

**Figure 4: 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)

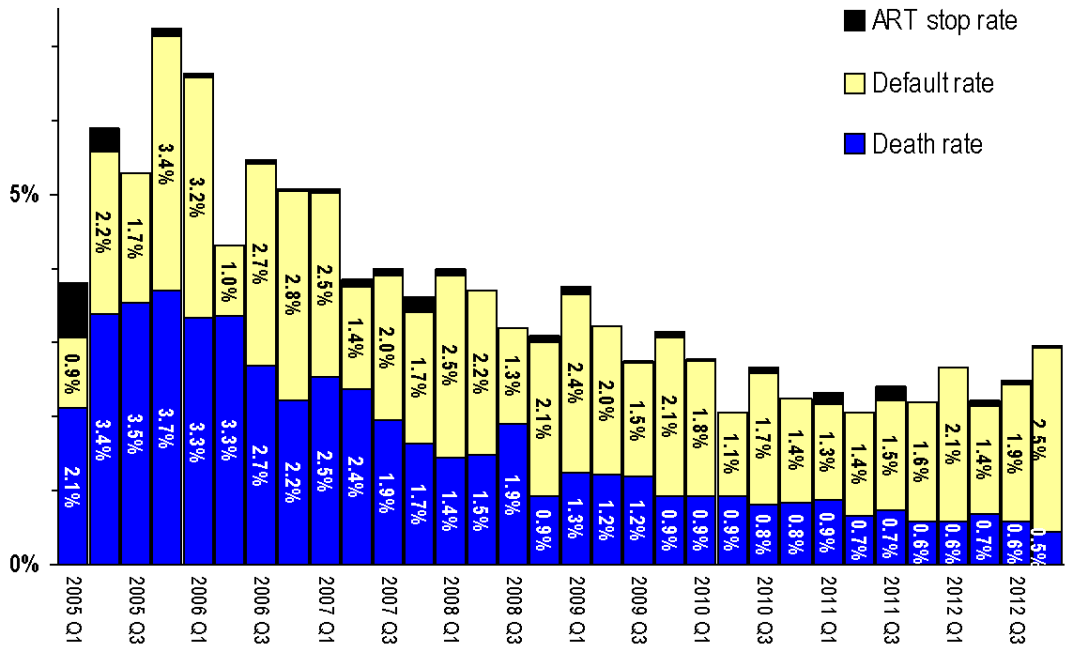



**Figure 4** shows the considerable decrease of ART drop-out rates since the start of the national programme. During Q4 2012, there were **1,918** new deaths, **10,248** new defaulters, **27** new ART stops. This translates into a quarterly death rate of **0.5%** and a defaulter rate of **2.5%** among the patients alive and on treatment during this quarter. The default rate has continued to increase from the previous quarter. Some of these patients have probably been misclassified as lost to follow-up while they have transferred to another ART clinic without notifying their previous site. Based on previous operational studies, about half of the patients starting in stage 3 and 4 who were classified as lost to follow-up are thought to have died. However, there is an indication that 5-10% 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. Due to the large number of Option B+ women in the ART cohort, these early drop-outs have probably resulted in a measurable increase in overall ART default rates. Some of these women are likely to be seen as re-entries (ART initiations during the breastfeeding period).

By end of December 2012, a cumulative **57,287 (10%)** patients were known to have died **100,624 (18%)** were lost to follow-up and **2,214** (**<1%**) were known to have **stopped ART.**

**Figure 5**: 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)

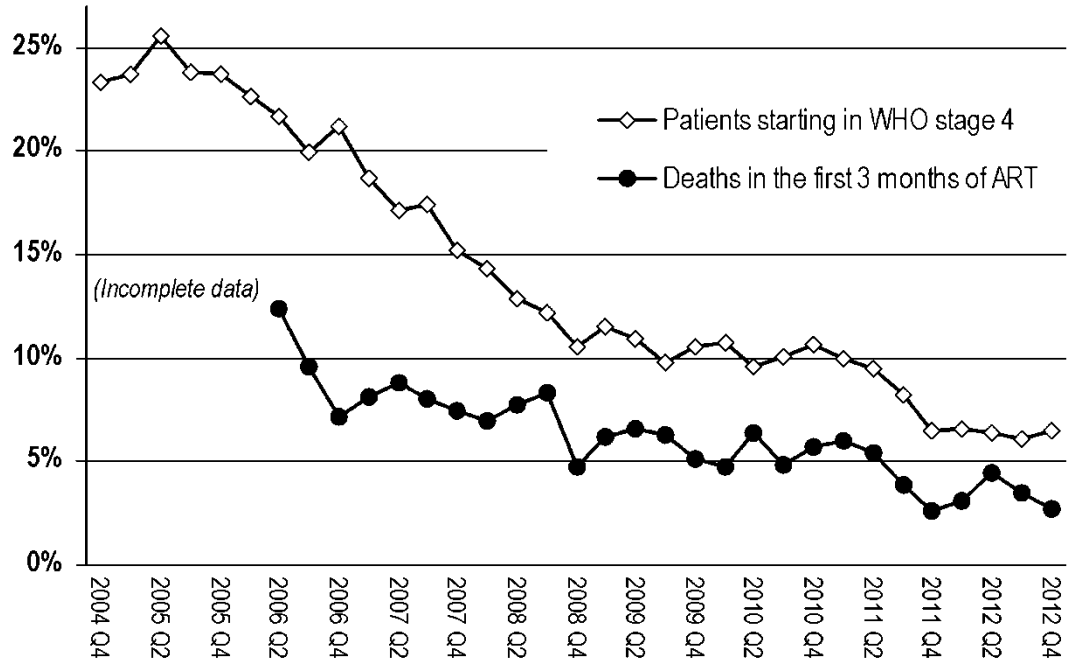
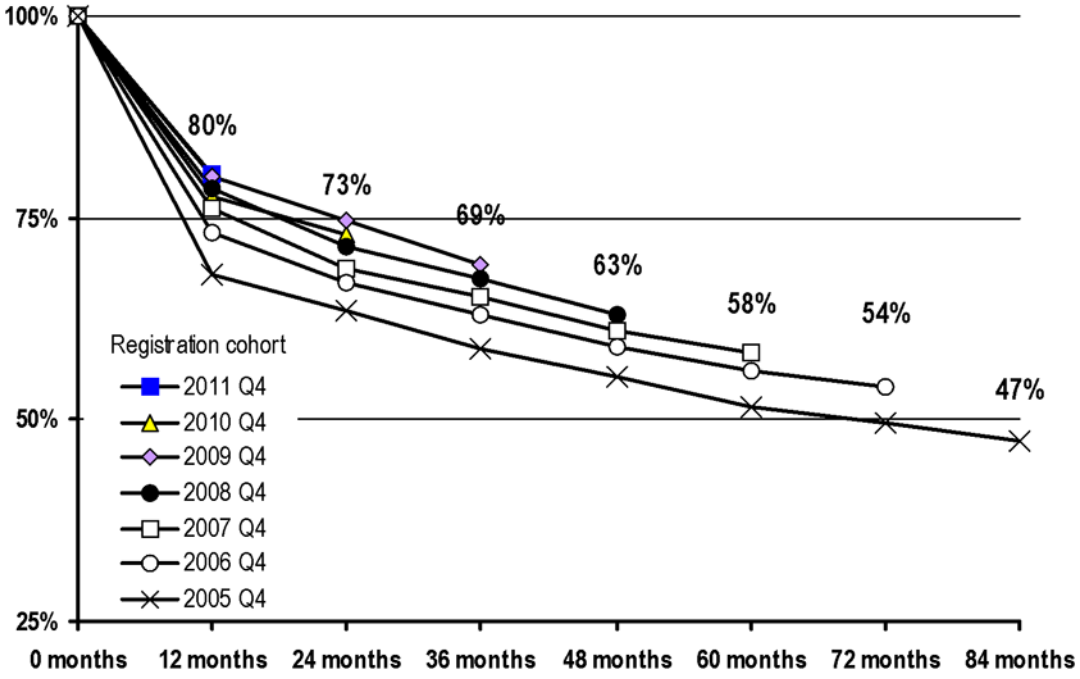



**Figure 5** shows the considerable decline in **early mortality** since the start of the program. In Q2 of 2006 11% of new patients died within the first 3 months after ART initiation. There has been a remarkable decline in early mortality and the lowest point thus far was reached in Q4 2011. The decrease 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 **2.7%** in Q4 2012. 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 2011 guidelines are expected to further reduce early mortality, as more patients will be started in WHO stage 1 and 2 (universal ART for HIV infected pregnant and breastfeeding women and children under 2 years). At the time of publication of this report, revised epidemiological projections for the population in need of ART (based on the changed eligibility criteria) were not available and estimates for ART population coverage are therefore not presented.

### 14.3.1 ART Cohort Survival Analysis

A 12, 24, 36, 48, 60, 72 and 84-month **'cohort outcome survival analysis'** was conducted for patients registered in Q4 of 2005, 2006, 2007, 2008, 2009, 2010 and 2011, respectively. A separate 12-month cohort outcome analysis was conducted for children who were under 15 years at the time of ART initiation and who registered for ART in Q4 2011. For the 3rd time, a further subgroup analysis was done for women who started ART under ***Option B+*** during Q2 2012 and Q4 2011. **80% of adults** and **81% of children** were retained alive on ART after 12 months on treatment. This is a slight decrease for adults and for children from the previous quarter, but remains close to the WHO target of 85%. **Figure 6** shows the continuous improvement of long-term treatment outcomes over time. **58%** and **47%** of patients registered 5 and 7 years ago had been retained alive on ART.

**Figure 6:** Group cohort survival analysis: Proportion of patients retained alive on ART 12, 24, 36, 48, 60, 72 and 84 months after ART initiation




**6-month group cohort survival** outcomes were known for **7,263** (84%) of the 8,611 women registered as having started ART under *Option B+* in Q2 2012[5]. This number represents 448 (6%) women who transferred out and are therefore double counted and **6,815 (94%)** patients not transferred. **5,701 (84%)** of these were retained at 6 months after registration. **1,046 (94%)** of those not retained were lost to follow-up, **16 (1%)** were known to have stopped ART and **52 (5%)** were known to have died.

**12-month group cohort survival** outcomes were known for **9,974** (71%) out of the 14,017 women registered as having started ART under *Option B+* in Q4 2011.[5] This number represents **916 (9%)** women who transferred out and are therefore double counted and **9,058 (91%)** patients not transferred. **7,126 (79%)** of these were retained at 12 months after registration. **1,816 (94%)** of those not retained were lost to follow-up, **30 (2%)** were known to have stopped ART and **86 (4%)** were known to have died.

The majority of women classified as lost to follow-up are likely to have stopped/ interrupted ART, but others are likely to have transferred to another facility without notifying the previous site and the actual proportion retained on ART may be higher than reported. The 6-month retention rate is slightly higher than in the previous quarter. 79% of the very first cohort of women started under *Option B+* was retained after 12 months. 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+*.

[5] Group cohort survival analyses were not available from some sites running electronic data systems.

*6 month survival OptionB+*

**Survival and retention in ART program** *

**ART cohort registration group outcomes**

| | | |
|---|---|---|
| Total ART clinic registrations | **7,263** | **100%** |
| Transfers out (double counted) | **448** | 6% |
| Total not transferred out (patients in cohort) | **6,815** | 94% |
| Total alive on ART | **5,701** | 84% |
| Total not retained | **1,114** | 16% |
| Defaulted | **1,046** | 94% |
| Stopped ART | **16** | 1% |
| Died | **52** | 5% |

*12 month survival OptionB+*

**Survival and retention in ART program** *

**ART cohort registration group outcomes**

| | | |
|---|---|---|
| Total ART clinic registrations | **9,974** | **100%** |
| Transfers out (double counted) | **916** | 9% |
| Total not transferred out (patients in cohort) | **9,058** | 91% |
| Total alive on ART | **7,126** | 79% |
| Total not retained | **1,932** | 21% |
| Defaulted | **1,816** | 94% |
| Stopped ART | **30** | 2% |
| Died | **86** | 4% |

### 14.3.2 Secondary outcomes of patients retained on ART

Secondary outcomes are known for the **400,750** patients alive on ART who remained at their sites at end of the quarter. They are assumed to be similar for the 4,155 patients *in transit*.

#### ART Regimens

**397,699 (99%)** of patients were on first line and **2,480 (1%)** were on second line regimens; **571 (<1%)** were on non-standard regimens. Non-standard regimens are not necessarily substandard regimens and include patients continuing an ART regimen that was started outside Malawi, patients in research programmes and patients in specialist care.

Among patients on first line regimens, **21,605 (5%)** were on paediatric formulations and **20,587 (95%)** of these were on the new standard first line for children (regimen 2P: AZT/3TC/NVP).

**266,070 (71%)** of **376,094** patients on adult formulation first line regimen were on regimen 1A (stavudine / lamivudine / nevirapine); **27,952 (7%)** were on regimen 2A (zidovudine / lamivudine / nevirapine), which is the main alternative regimen for patients with stavudine side-effects.

By the end of December 2012, **72,612 (19%)** of patients on adult first line were receiving regimen **5A** (tenofovir / lamivudine / efavirenz). The majority of these were new initiations under Option B+ or because of concurrent TB treatment. Only a minority were substituted to regimen 5A due to confirmed lipodystrophy or other severe ART side effects.

#### Adherence to ART

Pill counts and the number of missed doses were documented for **377,488 (94%)** out of all patients retained on ART and **338,298 (90%)** of these were classified as >95% adherent in Q4 2012. Manual estimation of adherence from pill counts is practically difficult and classification can be misleading. To improve on accuracy of adherence assessment, the ART program has switched to a direct

evaluation of doses missed in 2010. Most ART sites are now recording this measure consistently and more plausible adherence levels are recorded with this method.

### ART Side Effects

**354,319 (88%)** patients on ART had information on drug side effects documented at their last clinic visit before end of December 2012. **12,996 (4%)** of these had side-effects. This may be under-ascertainment of the true rate of drug side effects, as an assumed 20-25% of patients develop at least mild side effects on regimen 1 (stavudine / lamivudine / nevirapine). However, 29% of patients on first line regimen adult formulation are no longer on stavudine containing regimens, so a lower proportion of patients with side-effects is plausible. Malawi continues to increase access to alternative first line regimens for such patients, and those with severe lipodystrophy are now moved to regimen 5A (tenofovir / lamivudine / efavirenz).

## 15 TB / HIV Management

Approximately **81%** of HIV infected TB patients were receiving ART in Q4 2012. This estimate is based on the following triangulation of TB and ART program data:

*TB Program Data:* A total of **5,013** TB patients were registered during Q4 2012. Assuming an average HIV prevalence of 66% among TB patients, **3,342** TB patients were HIV positive and therefore in need of ART. Given that **1,423** TB patients registered were already on ART at the time of starting TB treatment, 3,342 – 1,423 = **1,919** TB patients needed to initiate ART.

*ART Program Data:* An estimated **1,269** patients[6] started ART with a current or recent episode of TB during Q4 2012. This is **66%** (1,269 of 1,919) of the TB patients who needed to start ART. This means that a total of 1,423 + 1,269 = **2,692** (**81%**) of the estimated 3,342 HIV infected TB patients were receiving ART in Q4 2012.

**TB program report** *

**TB clinic registrations**

| | | |
|---|---|---|
| Total TB patients registered | 5,013 | 100% |

**HIV status ascertainment**

| | | |
|---|---|---|
| HIV status not ascertained | 359 | 7% |
| HIV status ascertained | 4,654 | 93% |
| HIV negative | 2,114 | 45% |
| HIV positive | 2,540 | 55% |
| Already on ART | 1,423 | 56% |
| Not on ART when starting TB treatment | 1,117 | 44% |

**TB / ART program triangulation** *

**HIV-burden among TB patients (estimated)**

| | | |
|---|---|---|
| HIV negative (est. 33%) | 1,671 | 33% |
| HIV positive (est. 66%) in need of ART | 3,342 | 67% |
| Not on ART | 650 | 19% |
| Total on ART (coverage) | 2,692 | 81% |
| Already on ART (TB prog) | 1,423 | 53% |
| Started ART within 24m of TB diagnosis (ART prog) | 1,269 | 47% |
| ART initiations with current TB (ART prog) | 821 | 65% |
| ART initiations after recent TB (ART prog) | 449 | 35% |

[6] 23% of the 1,975 ART patients who were registered 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.

# 16 STI Treatment

STI program reports remained incomplete and 5 out of 29 district-level reports could not be included in this quarterly report. **37,504** STI cases were reported for Q4 2012. Assuming an 80% reporting rate, an estimated **46,880** STI cases may have been treated in this quarter. This is equivalent to a **48% STI treatment coverage** of the expected 98,600 STI cases in the population.

# 17 Supply of HIV Program Commodities

The Partnership for Supply Chain Management through the Voluntary Pooled Procurement mechanism under the Global Fund carried out the procurement of most HIV commodities. During Q4 2012, ARV and medicines for opportunistic infections worth **$4.38 million** were **received** by the Central Medical Store Trust warehouse dedicated for HIV Program commodities. The total value of ARV medicines **ordered** in Q4 2012 was **$ 21.58million**.

Stocks received during Q4 2012 included 6 months of stock (MOS) of zidovudine/lamivudine/nevirapine 150/300/200mg (Regimen 2A; 41% of the value of adult ARVs) and 2 MOS of stavudine/lamivudine/nevirapine (Regimen 1A; 57% of the value of adult ARVs). By end of Q4 2012, the program had an estimated central stock level of 5.6 months of stavudine/lamivudine/nevirapine 30/150/200mg. The program also received laboratory commodities including HIV test kits and syphilis kits valued at **$0.993million**. A 3months consignment of Determine, HIV 1/2 (747,000 tests) was also received in Q4 2012 for delivery in distribution cycle 12.

In preparation for phase 2 of the first line ART regimen transition in the 2011 guidelines, the program has continued receiving additional quantities of tenofovir/lamivudine/efavirenz (**Regimen 5A**). During Q4 2012 another order for this regimen was confirmed. An additional 1,835,000 tins of 5A are expected to arrive from July 2013.

Atazanavir/Ritonavir 300/100mg was ordered to facilitate the transition from lopinavir/ritonavir 200/50mg in Q2 2013. Staggered deliveries are expected in Q1, Q2 and Q3.

The scheduled quarterly distribution of HIV commodities started on the 26th January 2013 with over 6 weeks delay. Deliveries to all 665 sites were only concluded on 6th March 2013. The distribution included all paediatric and adult formulation ARVs and other medicines for opportunistic infections such as Co-trimoxazole 480mg. Both Determine and Unigold HIV test kits were also distributed to individual health facilities to enable the health facilities provide uninterrupted testing services.

The delay in the distribution was primarily caused by challenges with the approval of reprogramming of cost savings with UNICEF who are subcontracting a third party distribution agent to carry out the distribution to all sites. The 6-week delay for the start of scheduled distribution triggered many emergency deliveries and relocation of ARV to health facilities to mitigate stock outs in January and February 2013. A total of **875** individual product relocations had to be coordinated between health facilities during this period. These challenges were highlighted during the last Global Fund mission and approval for extending the UNICEF contract period up to December 2013 was obtained. A request for reprogramming of additional funds will be made before end of June 2013 to minimize the risk for future delays in distribution.

Physical stock counts for ARVs and other medicines for HIV-related diseases were performed at all sites during the supervision visits in January 2013. Table 6 shows the total medicine stocks found at the sites and the estimated consumption periods. Following the quarterly distribution cycle and

maintaining a 2-month minimum stock level at the sites, stocks of the main adult and pediatric regimens were estimated to last until end of February 2013.

Minimum stocks of AZT/3TC 300/150mg are maintained at all sites for post-exposure prophylaxis (PEP) and the total stocks at the sites therefore far exceeds the actual consumption from patients using this regimen in alternative ART regimens or as PEP.

72,612 patients were on Regimen 5A, which was 2,912 (4.0%) less than projected in the procurement plan for the end of this quarter (75,524). This confirms that mid-term ART program projections have a high degree of accuracy. The national ART program forecast and quantification was updated in Q3 2012, based on the last 4 quarters of new program data since implementation of the July 2011 guidelines

**Table 6:** Total stocks of HIV program commodities at all sites visited during the 2012 Q4 supportive site supervision. Stock positions are from the date of the visit (between 1-4 weeks after the end of the quarter). Warehouse stock positions are from 20/12/2012

| 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) | **35** | **4,471** | **4,754** | 804 | 5.6 | 5.9 |
| | AZT / 3TC 60 / 30mg tins (60 tabs) | **601** | **16,240** | **4,931** | 1,782 | 9.1 | 2.8 |
| | AZT / 3TC 300 / 150mg tins (60 tabs) | **515** | **14,782** | **25,241** | 1,606 | 9.2 | 15.7 |
| | AZT / 3TC / NVP 60 / 30 / 50mg tins (60 tabs) | **591** | **166,633** | **300,460** | 51,468 | 3.2 | 5.8 |
| | AZT / 3TC / NVP 300 / 150 / 200mg tins (60 tabs) | **577** | **142,585** | **215,466** | 27,952 | 5.1 | 7.7 |
| | d4T / 3TC 6 / 30mg tins (60 tabs) | **392** | **4,483** | **855** | 360 | 12.5 | 2.4 |
| | d4T / 3TC 30 / 150mg tins (15 tabs) | **542** | **25,261** | | 5,237 | 4.8 | |
| | d4T / 3TC 30 / 150mg tins (60 tabs) | **484** | **41,897** | **43,189** | 8,930 | 4.7 | 4.8 |
| | d4T / 3TC / NVP 6 / 30 / 50mg tins (60 tabs) | **417** | **36,953** | **9,815** | 1,678 | 22.0 | 5.9 |
| | d4T / 3TC / NVP 30 / 150 / 200mg tins (15 tabs) | **535** | **26,196** | | 5,237 | 5.0 | |
| | d4T / 3TC / NVP 30 / 150 / 200mg tins (60 tabs) | **635** | **636,375** | **1,388,633** | 266,070 | 2.4 | 5.2 |
| | EFV 200mg tins (90 tabs) | **133** | **4,840** | **3,100** | 126 | 38.3 | 24.5 |
| | EFV 600mg tins (30 tabs) | **353** | **95,625** | **39,031** | 8,587 | 11.1 | 4.5 |
| | LPV / r 100 / 25mg tins (60 tabs) | **33** | **3,220** | **1,686** | 804 | 4.0 | 2.1 |
| | LPV / r 200 / 50mg tins (120 tabs) | **85** | **9,616** | **44** | 2,212 | 4.3 | 0.0 |
| | NVP 200mg tins (60 tabs) | **514** | **24,864** | **15,625** | 873 | 28.5 | 17.9 |
| | TDF / 3TC 300 / 300mg tins (30 tabs) | **567** | **31,723** | **29,994** | 2,800 | 11.3 | 10.7 |
| | TDF / 3TC / EFV 300 / 300 / 600mg tins (30 tabs) | **640** | **176,311** | **201,709** | 72,612 | 2.4 | 2.8 |
| **bottles** | Fluconazole (Diflucan) 50mg / 5ml bottles (50 ml) | **125** | **4,104** | **634** | | | |
| | NVP 10mg/ml bottles (25 ml) | **602** | **106,153** | **65,845** | 15,444 | 6.9 | 4.3 |
| **vials** | Depo-Provera 150mg/1ml vials (25 each) | **385** | **418,391** | | | | |
| | Bleomycine 15,000IU vials (1 each) | **18** | **351** | | | | |
| | Ceftriaxone 1g vials (10 each) | **431** | **52,329** | **32,504** | | | |
| | Vincristine 1mg / 1ml vials (1 each) | **33** | **5,150** | | | | |
| **tabs** | Aciclovir 400mg tins (500 tabs) | **317** | **4,132,807** | | | | |
| | Ciprofloxacine 500mg blist packs (100 tabs) | **208** | **1,308,440** | **1,661,120** | | | |
| | Codeine 30mg tins (500 tabs) | **46** | **82,169** | | | | |
| | Cotrimoxazole 100 / 20mg tins (100 tabs) | **275** | **2,969,580** | **697,600** | 2,562,876 | 1.2 | 0.3 |
| | Cotrimoxazole 400 / 80mg blist packs (60 tabs) | **137** | **3,708,339** | **50,092,860** | 25,570,591 | 0.1 | 2.0 |
| | Cotrimoxazole 400 / 80mg tins (1000 tabs) | **526** | **28,128,054** | **30,428,000** | | | |
| | Fluconazole (Diflucan) 200mg tins (28 tabs) | **588** | **627,525** | **80,808** | | | |
| | Isoniazid 100mg blist packs (100 tabs) | **348** | **426,640** | | | | |
| | Isoniazid 300mg blist packs (672 tabs) | **487** | **3,525,745** | | 910,292 | 3.9 | |
| | Morphine 10mg blist packs (60 tabs) | **14** | **26,190** | | | | |
| | Pyridoxine 25mg tins (100 tabs) | **108** | **274,865** | **800,000** | | | |
| **sheets** | Exposed child card (pink) bundles (100 sheets) | **512** | **40,845** | **49,294** | 3,719 | 11.0 | 13.3 |
| | Pre-ART pat. card (green) bundles (100 sheets) | **540** | **91,824** | **74,398** | 2,925 | 31.4 | 25.4 |
| | ART pat. card adult (yellow) bundles (100 sheets | **494** | **104,175** | **180,190** | | | |
| | ART pat. card paed. (blue) bundles (100 sheets) | **531** | **63,177** | **59,596** | | | |
| **tests** | Determine HIV1/2 boxes (100 each) | **523** | **325,492** | **813,500** | | | |
| | Uni-Gold HIV1/2 boxes (20 each) | **485** | **66,678** | **106,140** | | | |
| | Determine syphilis boxes (100 each) | **36** | **7,016** | | 54,449 | 0.1 | |
| | DBS kit (filter paper, lancet, etc.) bundles (20 eac | **332** | **22,362** | | | | |
| **pieces** | Condoms male boxes (1 each) | **485** | **13,954,361** | | | | |
| | Condoms female boxes (1 each) | **330** | **918,423** | | | | |

* 'Consumption per month' and 'Months of stock' are only estimated for commodities that are directly related to patient-regimen groups in the standard service reports. Estimates are based on the number of patients on the respective regimen at the end of the quarter evaluated and do not account for potential (positive or negative) growth. 'Months of stock' is calculated from the day of the physical stock count, which is on average 1 month after the end of the quarter.

# 18 Trainings and Mentoring

## 18.1 HIV Testing and Counselling

**60** HTC Counsellors received training in collecting dried blood spot specimens for Early Infant Diagnosis (EID). All trainings for new HTC providers were suspended in Q4 2012 pending preparations for the *HTC Intensive Skills Re-Trainings* for all active HTC staff in 2013.

## 18.2 PMTCT/ART

**658** health workers were trained in the new integrated PMTCT/ART curriculum during Q4 2012, bringing the total number trained in the 2011 guidelines to **5,297**. An additional **102** medical records clerks were trained in the 2-day abridged PMTCT/ART curriculum. GAIA funded 2 PMTCT/ART training sessions for final year students at Kamuzu College of Nursing. The remainder of the trainings were funded as follows (by number of participants): WHO (119); NAC (15); CDC CoAg(324); Baylor (91); TB Care (10); Malawi Prisons (9).

**112** District PMTCT/ART coordinators were trained in developing plans for Elimination of Mother to Child Transmission.

**30** TB Officers in the SE Zone were trained in ART/TB management.

## 18.3 HIV Clinical Mentoring Program

**598** Health workers at **92** facilities in the SE Zone and **227** health workers and support staff at **33** facilities in the N Zone received clinical mentoring in provision of PMTCT/ART.

Staff at **100** facilities received mentoring for HIV Exposed Child Follow-Up and EID specimen collection.

# 19 Participants in Q4 2012 Supervision (Site visits 14 Jan – 1 Feb 2013)

Alick Banda (Lab Supervisor, MOH CHSU)
Andrew L Banda (Lab Supervisor, MOH)
Billy K Banda (Lab Tech, MOH)
Florence Chakhala (Nurse, MOH)
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Richard Chidakwani (CO, MOH)
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Ruth Deula (Nurse, CHAM)
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Joe Gumulira (CO, MOH)
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Rhoda Jamu Kamoto (Nurse, CHAM)
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Oscar Kasiyamphanje (Nurse, CHAM)
Joseph Kasola (CO, MOH, Chitipa DH)
Catherine Kassam (, MOH)
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Jean Kayamba (Nurse, MOH)
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Amos Maenje (Lab Supervisor, MOH)
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Chikayiko Majamanda (Nurse, MOH)
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Roseby Malombe (Nurse, CHAM)
Lameck Manda (Logistics Officer, MOH)
Davie Maseko (CO, SOS)
Hannock Matupi (ARV clinician, MOH, Rumphi DH)
Enock Maulana (Lab Supervisor, MOH)
Alwin Mbene (Chief Lab officer, MOH)
Artwel Mdakala (Lab Supervisor, MOH)
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Christopher Mkwezalamba (CO, MOH)
Florence Mndala (Nurse, Partners)
Offrey Mnduwira (CO, Police)
Andraida Mtoseni (Nurse, MOH)
Ekwala Mubiala (HIV Zonal Supervisor, MOH, UNV)
Fainala Muyila (Nurse, MOH)
Ruockia Mwachumu (Nurse, MOH Nsanje DHO)
Ebro Mwakalinga (Lab Supervisor, MOH)
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Mourine Gumbo Ntambo (Nurse, MOH)
Judith Ntopa (Nurse, Army)
Jonas Nyasulu (IT Fellow, MOH)
Sabina Phiri (Nurse, MOH)
Macleod Piringu (ART CORDINATOR, MOH)
Abdul Richard (CO, MOH)
Monica Simfukwe (Nurse, MOH, Chintheche RH)
Juliana Soko (ARV nurse, MOH, Livingstonia MH)
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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.

8th April 2013

# 20 Appendix (Full National HIV Program Data)

# 2012 Q4 HTC Report

| | | | National coverage | |
|---|---|---|---|---|
| | | | Population denominator | |
| Total Number of Clients | 378,560 | | 3,772,503 | 10% |
| **Gender and Pregnancy** | | | | |
| Males | 124,517 | 33% | 1,891,196 | 7% |
| Females | 254,043 | 67% | 1,881,306 | 14% |
| Females Non Pregnant | 131,673 | 52% | 1,274,306 | 10% |
| Females Pregnant | 122,370 | 48% | 151,750 | 81% |
| **Age** | | | | |
| 25 years and above | 182,456 | 48% | 1,256,106 | 15% |
| 15 - 24 years | 151,487 | 40% | 789,500 | 19% |
| Children Below 15 | 44,617 | 12% | 872,055 | 5% |
| 18months - 14 years | 38,573 | 86% | 41,215 | 94% |
| Below 18months | 6,044 | 14% | 830,840 | 1% |
| **HIV Test History** | | | | |
| Previously tested | 234,654 | 62% | | |
| Never tested before | 143,906 | 38% | | |
| Number of people ever tested since 2007 | 4,276,462 | | | |
| **Counselling Type** | | | | |
| Counseled with partner | 83,274 | 22% | | |
| Counseled alone | 295,286 | 78% | | |
| **HIV Test Resuts** | | | | |
| Single test negative | 332,263 | 88% | | |
| First and second test negative | 1,831 | 0% | | |
| First and second test positive | 43,714 | 12% | | |
| First and second test discordant | 752 | 0% | | |
| **Final Result** | | | | |
| No of children <18months with antibody positive | 1,678 | 0.4% | | |
| Positive | 33,718 | 8.9% | | |
| Negative | 342,705 | 90.5% | | |
| Inconclusive | 459 | 0.1% | | |

# HIV Care Clinic (HCC) cohort analysis

Malawi (national)

2012 Q4 (Quarter)

## Registration details

*

### HCC clinic registrations

| | | |
|---|---|---|
| Total HCC registrations | 19,930 | 100% |

### Registration type

| | | |
|---|---|---|
| Patients enrolled first time | 18,941 | 95% |
| Patients re-enrolled | 117 | 1% |
| Patients transferred in | 872 | 4% |

### Sex

| | | |
|---|---|---|
| Males (all ages) | 8,745 | 44% |
| Females (all ages) | 11,185 | 56% |
| Non-pregnant | 11,121 | 99% |
| Pregnant | 64 | 1% |

### Age at registration

| | | |
|---|---|---|
| Adults 15+ yrs | 7,985 | 40% |
| Children 0-14 yrs | 11,945 | 60% |
| Children 24 months - 14 years | 974 | 8% |
| Children below 24 months (exposed children) | 10,971 | 92% |
| Children 2 - below 24 months | 5,574 | 51% |
| Infants below 2 months | 5,397 | 49% |

### Reason for HCC registration

| | | |
|---|---|---|
| Exposed infants | 11,156 | 56% |
| Confirmed infected patients (pre-ART) | 8,774 | 44% |



* Subgroups may not add to 100% due to rounding

# HIV Care Clinic (HCC) cohort analysis

Malawi (national)

2012 Q4 (Cumulative)

## Registration details

*

### HCC clinic registrations

| | | |
|---|---|---|
| Total HCC registrations | 170,149 | 100% |

### Registration type

| | | |
|---|---|---|
| Patients enrolled first time | 164,903 | 97% |
| Patients re-enrolled | 464 | 0% |
| Patients transferred in | 4,782 | 3% |

### Sex

| | | |
|---|---|---|
| Males (all ages) | 67,294 | 40% |
| Females (all ages) | 102,855 | 60% |
| Non-pregnant | 98,131 | 95% |
| Pregnant | 4,724 | 5% |

### Age at registration

| | | |
|---|---|---|
| Adults 15+ yrs | 101,485 | 60% |
| Children 0-14 yrs | 68,664 | 40% |
| Children 24 months - 14 years | 9,531 | 14% |
| Children below 24 months (exposed children) | 59,133 | 86% |
| Children 2 - below 24 months | 35,550 | 60% |
| Infants below 2 months | 23,583 | 40% |

### Reason for HCC registration

| | | |
|---|---|---|
| Exposed infants | 58,480 | 34% |
| Confirmed infected patients (pre-ART) | 111,669 | 66% |

## Pre-ART follow-up outcome

*

### Primary follow-up outcomes

| | | |
|---|---|---|
| Total retained in pre-ART | 34,124 | 32% |
| Started ART | 36,698 | 35% |
| Defaulted | 29,535 | 28% |
| Died | 5,204 | 5% |

### Transfers between sites

| | | |
|---|---|---|
| Total not transferred out | 106,939 | 96% |
| Transferred out | 4,730 | 4% |



* Subgroups may not add to 100% due to rounding

# HIV exposed child follow-up

Malawi (national)

2012 Q4 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

## *Age 2 months*

### Age cohort outcomes

*

Total children in birth cohort

| | | |
|---|---|---|
| Total children registered | 6,501 | 100% |

CPT status

| | | |
|---|---|---|
| On CPT | 5,630 | 87% |
| Not on CPT | 871 | 13% |

HIV status

| | | |
|---|---|---|
| Current HIV infection status unknown | 5,319 | 82% |
| HIV infection not confirmed, not ART eligible | 5,275 | 99% |
| HIV infection not confirmed, ART eligible (PSHD) | 44 | 1% |
| Current HIV infection status known | 1,182 | 18% |
| Confirmed not infected | 1,138 | 96% |
| Confirmed infected (ART eligible) | 44 | 4% |

ART eligibility summary

| | | |
|---|---|---|
| Not eligible for ART | 6,413 | 99% |
| ART eligible | 88 | 1% |
| ART not initiated | 49 | 56% |
| Initiated ART | 39 | 44% |

Primary follow-up outcome

| | | |
|---|---|---|
| Discharged uninfected | 21 | 0% |
| Continue follow-up | 5,763 | 89% |
| Started ART | 39 | 1% |
| Defaulted | 631 | 10% |
| Died | 8 | 0% |

Transfers between sites

| | | |
|---|---|---|
| Total not transferred out | 6,462 | 99% |
| Transferred out | 39 | 1% |

## *Age 12 months*

### Age cohort outcomes

*

Total children in birth cohort

| | | |
|---|---|---|
| Total children registered | 5,907 | 100% |

CPT status

| | | |
|---|---|---|
| On CPT | 4,122 | 70% |
| Not on CPT | 1,785 | 30% |

HIV status

| | | |
|---|---|---|
| Current HIV infection status unknown | 4,773 | 81% |
| HIV infection not confirmed, not ART eligible | 4,742 | 99% |
| HIV infection not confirmed, ART eligible (PSHD) | 31 | 1% |
| Current HIV infection status known | 1,134 | 19% |
| Confirmed not infected | 1,016 | 90% |
| Confirmed infected (ART eligible) | 118 | 10% |

# HIV exposed child follow-up

Malawi (national)

2012 Q4 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

## Age cohort outcomes

*

### ART eligibility summary

| | | | |
|---|---|---|---|
| Not eligible for ART | | 5,758 | 97% |
| ART eligible | | 149 | 3% |
| | ART not initiated | 54 | 36% |
| | Initiated ART | 95 | 64% |

### Primary follow-up outcome

| | | |
|---|---|---|
| Discharged uninfected | 67 | 1% |
| Continue follow-up | 3,957 | 68% |
| Started ART | 95 | 2% |
| Defaulted | 1,665 | 29% |
| Died | 48 | 1% |

### Transfers between sites

| | | |
|---|---|---|
| Total not transferred out | 5,832 | 99% |
| Transferred out | 75 | 1% |

*Age 24 months*

## Age cohort outcomes

*

### Total children in birth cohort

| | | |
|---|---|---|
| Total children registered | 2,034 | 100% |

### CPT status

| | | |
|---|---|---|
| On CPT | 682 | 34% |
| Not on CPT | 1,352 | 66% |

### HIV status

| | | | |
|---|---|---|---|
| Current HIV infection status unknown | | 945 | 46% |
| | HIV infection not confirmed, not ART eligible | 917 | 97% |
| | HIV infection not confirmed, ART eligible (PSHD) | 28 | 3% |
| Current HIV infection status known | | 1,089 | 54% |
| | Confirmed not infected | 1,001 | 92% |
| | Confirmed infected (ART eligible) | 88 | 8% |

### ART eligibility summary

| | | | |
|---|---|---|---|
| Not eligible for ART | | 1,918 | 94% |
| ART eligible | | 116 | 6% |
| | ART not initiated | 38 | 33% |
| | Initiated ART | 78 | 67% |

### Primary follow-up outcome

| | | |
|---|---|---|
| Discharged uninfected | 766 | 38% |
| Continue follow-up | 502 | 25% |
| Started ART | 78 | 4% |
| Defaulted | 636 | 32% |
| Died | 30 | 1% |

### Transfers between sites

| | | |
|---|---|---|
| Total not transferred out | 2,012 | 99% |
| Transferred out | 22 | 1% |



* Subgroups may not add to 100% due to rounding

# Antenatal Care

Malawi (national)

2012 Q4 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

## New ANC registrations in reporting period *

### Women with first visit in reporting period

| | | |
|---|---|---|
| New women registered | 147,429 | 100% |

## ANC cohort analysis *

### Total women completing ANC in the reporting period

| | | |
|---|---|---|
| Total women in booking cohort | 163,510 | 100% |

### Visits per woman

| | | |
|---|---|---|
| Women with 1 visit | 37,421 | 23% |
| Women with 2 visits | 43,790 | 27% |
| Women with 3 visits | 48,079 | 29% |
| Women with 4 visits | 28,004 | 17% |
| Women with 5+ visits | 6,216 | 4% |

### Trimester of first visit

| | | |
|---|---|---|
| Started ANC 0-12 wks | 13,213 | 8% |
| Started ANC 13+ wks | 150,297 | 92% |

### Pre-eclampsia

| | | |
|---|---|---|
| No pre-eclampsia | 160,835 | 98% |
| Pre-eclampsia | 2,675 | 2% |

### TTV doses

| | | |
|---|---|---|
| 0-1 TTV doses | 74,141 | 45% |
| 2+ TTV doses | 89,369 | 55% |

### SP tablets

| | | |
|---|---|---|
| 0 SP doses | 28,578 | 17% |
| 1 SP dose (1 x 3 tabs) | 53,663 | 33% |
| 6+ SP tablets (2 x 3 tabs) | 81,269 | 50% |

### FeFo tablets

| | | |
|---|---|---|
| 0-119 FeFo tablets | 139,922 | 86% |
| 120+ FeFo tablets | 23,588 | 14% |

### Albendazole (Deworming)

| | | |
|---|---|---|
| 0 Albend. doses | 60,009 | 39% |
| 1 Albend. dose | 94,847 | 61% |

### ITN (bednets)

| | | |
|---|---|---|
| No ITN | 64,711 | 42% |
| ITN received | 90,948 | 58% |

### Syphilis status

| | | | |
|---|---|---|---|
| Not tested for syphilis | | 136,381 | 83% |
| Tested for syphilis | | 27,129 | 17% |
| | Syphilis negative | 26,479 | 98% |
| | Syphilis positive | 650 | 2% |



* Subgroups may not add to 100% due to rounding

# Antenatal Care

Malawi (national)

2012 Q4 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

## ANC cohort analysis

*

### HIV status ascertainment

| | | |
|---|---|---|
| HIV status not ascertained | 52,007 | 32% |
| HIV status ascertained | 111,503 | 68% |
| Valid previous test result | 8,139 | 7% |
| Previous negative | 4,272 | 52% |
| Previous positive | 3,867 | 48% |
| New test at ANC | 103,364 | 93% |
| New negative | 97,340 | 94% |
| New positive | 6,024 | 6% |

### HIV status summary

| | | |
|---|---|---|
| Total women HIV negative | 101,612 | 91% |
| Total women HIV positive | 9,891 | 9% |

### CPT status (among HIV pos)

| | | |
|---|---|---|
| Not on CPT | 1,621 | 16% |
| On CPT | 8,270 | 84% |

### Final PMTCT regimen mother

| | | |
|---|---|---|
| No ARVs | 1,380 | 14% |
| Any ARVs | 8,511 | 86% |
| ART (by time of initiation) | 8,511 | 100% |
| Already on ART when starting ANC | 3,428 | 40% |
| Started ART at 0-27 weeks of pregnancy | 3,720 | 44% |
| Started ART at 28+ weeks of preg. | 1,363 | 16% |

### Baby's ARVs dispensed

| | | |
|---|---|---|
| No ARVs dispensed for infant | 5,073 | 51% |
| ARVs dispensed for infant | 4,818 | 49% |



* Subgroups may not add to 100% due to rounding

# Maternity

Malawi (national)

2012 Q4 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

## Maternal details

*

### Admissions in the reporting period

| | | |
|---|---|---|
| Total admissions (referrals double-counted) | 132,755 | 100% |
| Not referred to other site (total women) | 126,236 | 95% |
| Referred out before delivery (multiple admissions) | 6,519 | 5% |

### HIV status ascertainment

| | | |
|---|---|---|
| HIV status not ascertained | 15,676 | 12% |
| HIV status ascertained | 117,730 | 88% |
| Valid previous test result | 113,604 | 96% |
| Previous negative | 104,362 | 92% |
| Previous positive | 9,242 | 8% |
| New test at maternity | 4,126 | 4% |
| New negative | 3,721 | 90% |
| New positive | 405 | 10% |

### HIV status summary

| | | |
|---|---|---|
| Total women HIV negative | 108,083 | 92% |
| Total women HIV positive | 9,647 | 8% |

### ARVs during pregnancy (among HIV pos)

| | | |
|---|---|---|
| None | 662 | 7% |
| Any ARVs | 8,985 | 93% |
| ART (by time of initiation) | 8,985 | 100% |
| ART initiated before pregnancy | 4,211 | 47% |
| ART initiated in 1st / 2nd trimester | 2,193 | 24% |
| ART initiated in 3rd trimester | 2,194 | 24% |
| ART initiated during labour | 387 | 4% |

### Obstetric complications

| | | |
|---|---|---|
| None | 118,873 | 89% |
| Any complications | 14,533 | 11% |
| Haemorrhage | 2,608 | 18% |
| Haemorrhage ante-partum | 752 | 29% |
| Haemorrhage post-partum | 1,856 | 71% |
| Obstr / prol labour | 4,781 | 33% |
| (pre-) Eclampsia | 992 | 7% |
| Maternal sepsis | 157 | 1% |
| Ruptured uterus | 181 | 1% |
| Other | 5,814 | 40% |

### Emergency obstetric care

| | | |
|---|---|---|
| Oxytocin | 106,953 | 96% |
| Anticonvulsive | 586 | 1% |
| Antibiotics | 3,407 | 3% |
| Blood transfusion | 373 | 0% |
| Manual removal of placenta | 422 | 0% |

### Vitamin A

| | | |
|---|---|---|
| Vit A not given | 55,298 | 41% |
| Vit A given | 78,108 | 59% |



* Subgroups may not add to 100% due to rounding

# Maternity

Malawi (national)

2012 Q4 (1st month of quarter, 2nd month of quarter, 3rd month of quarter)

## Maternal details

*

### Staff conducting delivery

| | | |
|---|---|---|
| Category A: MO, CO, nurse/midwife, MA | 119,379 | 94% |
| Category B: PA, WA, HSA | 1,550 | 1% |
| Category C: Other | 5,958 | 5% |

### Mother survival

| | | |
|---|---|---|
| Mother alive | 126,733 | 100% |
| Mother died | 154 | 0% |

## Infant details

*

### Single babies / multiple deliveries

| | | |
|---|---|---|
| Total babies delivered | 129,549 | 100% |
| Single babies | 124,424 | 96% |
| Twin / multiple babies | 5,125 | 4% |

### Delivery place

| | | |
|---|---|---|
| Total deliveries at a health facility | 123,141 | 95% |
| This facility | 122,770 | 100% |
| Other facility | 371 | 0% |
| Total deliveries before reaching the facility | 6,408 | 5% |
| In transit | 3,806 | 59% |
| Home / TBA | 2,602 | 41% |

### Delivery mode

| | | |
|---|---|---|
| Spontaneous vaginal | 117,905 | 91% |
| Vacuum extraction | 1,930 | 1% |
| Breech | 2,577 | 2% |
| Caesarean section | 7,137 | 6% |

### Infant complications

| | | |
|---|---|---|
| None | 113,993 | 88% |
| Total infants with complications | 15,556 | 12% |
| Prematurity | 3,667 | 24% |
| Weight less 2500g | 5,017 | 32% |
| Asphyxia | 3,842 | 25% |
| Sepsis | 1,135 | 7% |
| Other newborn complication | 1,895 | 12% |

### Infant survival

| | | |
|---|---|---|
| Total live births | 127,095 | 98% |
| Discharged alive | 125,738 | 99% |
| Neonatal deaths | 1,357 | 1% |
| Stillbirths | 2,454 | 2% |
| Stillbirth, fresh | 1,319 | 54% |
| Stillbirth, macerated | 1,135 | 46% |

# Maternity

Malawi (national)

2012 Q4 (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 | 13,732 | 11% |
| Infants with known HIV exposure status | 112,006 | 89% |
| Not HIV exposed | 102,924 | 92% |
| HIV exposed | 9,082 | 8% |
| Received no ARVs | 908 | 10% |
| Received ARVs | 8,174 | 90% |
| Nevirapine | 8,174 | 100% |

### Breastfeeding initiated

| | | |
|---|---|---|
| BF not started within 60min | 9,370 | 7% |
| BF started within 60min | 120,179 | 93% |

### Tetracycline eye ointment given

| | | |
|---|---|---|
| TO not given | 44,891 | 35% |
| TO given | 84,658 | 65% |



* Subgroups may not add to 100% due to rounding

# ART cohort analysis

Malawi (national)

2012 Q4 (Quarter)

## Registration details

*

### ART clinic registrations

| | | |
|---|---|---|
| Total ART clinic registrations | 33,490 | 100% |

### Registration type

| | | |
|---|---|---|
| First time ART initiations (total patients) | 24,168 | 72% |
| ART re-initiations | 708 | 2% |
| ART transfers in | 8,614 | 26% |

### Sex

| | | |
|---|---|---|
| Males | 10,916 | 33% |
| Females | 22,574 | 67% |
| Non-pregnant | 15,903 | 70% |
| Pregnant | 6,671 | 30% |

### Age at ART initiation

| | | |
|---|---|---|
| Adults 15+ yrs | 30,538 | 91% |
| Children 0-14 yrs | 2,952 | 9% |
| Children 2-14 yrs | 2,140 | 72% |
| Children below 24 mths | 812 | 28% |

### Reason for starting ART

| | | |
|---|---|---|
| Presumed severe HIV Disease | 192 | 1% |
| Confirmed HIV infection | 33,298 | 99% |
| WHO stage 1 or 2 | 17,660 | 53% |
| Total lymphocytes <threshold | 52 | 0% |
| CD4 below threshold | 8,536 | 48% |
| CD4 unknown or >threshold | 9,072 | 51% |
| PCR infants | 165 | 2% |
| Children 12-23 mths | 261 | 3% |
| Pregnant women | 6,349 | 70% |
| Breastfeeding mothers | 2,297 | 25% |
| WHO stage 3 | 13,127 | 39% |
| WHO stage 4 | 2,181 | 7% |
| Unknown / reason outside of guidelines | 330 | 1% |

### TB at ART initiation

| | | |
|---|---|---|
| Never TB / TB > 24 months ago | 31,731 | 95% |
| TB within the last 24 months | 622 | 2% |
| Current episode of TB | 1,137 | 3% |

### Kaposi's sarcoma at ART initiation

| | | |
|---|---|---|
| No KS | 33,062 | 99% |
| Patients with KS | 428 | 1% |



* Subgroups may not add to 100% due to rounding

# ART cohort analysis

Malawi (national)

2012 Q4 (Cumulative)

## Registration details

*

### ART clinic registrations

| | | |
|---|---|---|
| Total ART clinic registrations | 691,212 | 100% |

### Registration type

| | | |
|---|---|---|
| First time ART initiations (total patients) | 560,325 | 81% |
| ART re-initiations | 4,705 | 1% |
| ART transfers in | 126,182 | 18% |

### Sex

| | | |
|---|---|---|
| Males | 252,477 | 37% |
| Females | 438,735 | 63% |
| Non-pregnant | 382,958 | 87% |
| Pregnant | 55,777 | 13% |

### Age at ART initiation

| | | |
|---|---|---|
| Adults 15+ yrs | 630,309 | 91% |
| Children 0-14 yrs | 60,903 | 9% |
| Children 2-14 yrs | 47,494 | 78% |
| Children below 24 mths | 13,409 | 22% |

### Reason for starting ART

| | | |
|---|---|---|
| Presumed severe HIV Disease | 2,602 | 0% |
| Confirmed HIV infection | 688,610 | 100% |
| WHO stage 1 or 2 | 243,350 | 35% |
| Total lymphocytes <threshold | 442 | 0% |
| CD4 below threshold | 182,061 | 75% |
| CD4 unknown or >threshold | 60,847 | 25% |
| PCR infants | 2,124 | 3% |
| Children 12-23 mths | 1,850 | 3% |
| Pregnant women | 36,849 | 61% |
| Breastfeeding mothers | 20,024 | 33% |
| WHO stage 3 | 357,974 | 52% |
| WHO stage 4 | 82,133 | 12% |
| Unknown / reason outside of guidelines | 5,153 | 1% |

### TB at ART initiation

| | | |
|---|---|---|
| Never TB / TB > 24 months ago | 630,006 | 91% |
| TB within the last 24 months | 35,188 | 5% |
| Current episode of TB | 26,018 | 4% |

### Kaposi's sarcoma at ART initiation

| | | |
|---|---|---|
| No KS | 674,924 | 98% |
| Patients with KS | 16,288 | 2% |



* Subgroups may not add to 100% due to rounding

# ART cohort analysis

Malawi (national)

2012 Q4 (Cumulative)

## ART outcomes

*

### Primary follow-up outcomes

| | | | |
|---|---|---|---|
| Total alive on ART | | 404,905 | 72% |
| | Alive on ART at site of last registration | 400,750 | 99% |
| | ART patients in transit between sites | 4,155 | 1% |
| Defaulted | | 100,624 | 18% |
| Stopped ART | | 2,214 | 0% |
| Total died | | 57,287 | 10% |
| | Died month 1 | 15,581 | 27% |
| | Died month 2 | 9,991 | 17% |
| | Died month 3 | 5,658 | 10% |
| | Died month 4+ | 26,057 | 45% |

### Transfers between sites

| | | | |
|---|---|---|---|
| Total not transferred out | | 560,875 | 81% |
| Transferred out | | 130,337 | 19% |

### ART regimens

| | | | |
|---|---|---|---|
| First line regimens | | 397,699 | 99% |
| | Adult formulation | 376,094 | 95% |
| | | Regimen 1A | 266,070 | 71% |
| | | Regimen 2A | 27,952 | 7% |
| | | Regimen 3A | 7,480 | 2% |
| | | Regimen 4A | 1,107 | 0% |
| | | Regimen 5A | 72,612 | 19% |
| | | Regimen 6A | 873 | 0% |
| | Paed. formulation | 21,605 | 5% |
| | | Regimen 1P | 671 | 3% |
| | | Regimen 2P | 20,587 | 95% |
| | | Regimen 3P | 144 | 1% |
| | | Regimen 4P | 203 | 1% |
| Second line regimens | | 2,480 | 1% |
| | Adult formulation | 2,212 | 89% |
| | | Regimen 7A | 1,927 | 87% |
| | | Regimen 8A | 285 | 13% |
| | Paed. Formulation | 268 | 11% |
| | | Regimen 9P | 268 | 100% |
| Other regimen (adult / paed) | | 571 | 0% |

### Adherence

| | | | |
|---|---|---|---|
| Adherence unknown (not recorded) | | 23,262 | 6% |
| Adherence recorded | | 377,488 | 94% |
| | 0-6 doses missed | 338,298 | 90% |
| | 7+ doses missed | 39,190 | 10% |

### ART side effects

| | | | |
|---|---|---|---|
| Side effects unknown (not recorded) | | 46,431 | 12% |
| Side effects recorded | | 354,319 | 88% |
| | No side effects | 341,323 | 96% |
| | Any side effects | 12,996 | 4% |



* Subgroups may not add to 100% due to rounding

## ART outcomes

*

Current TB status among ART patients (ICF)

| | | | |
|---|---|---|---|
| ICF not done (Current TB status unknown/ not circ) | | 7,716 | 2% |
| ICF done | | 393,034 | 98% |
| | TB not suspected | 387,742 | 99% |
| | TB suspected | 3,584 | 1% |
| | TB confirmed | 1,708 | 0% |
| | | TB confirmed, not on treatment | 132 | 8% |
| | | TB confirmed, on TB treatment | 1,576 | 92% |


* Subgroups may not add to 100% due to rounding