

## **ART IN THE PUBLIC SECTOR IN MALAWI RESULTS UP TO 31<sup>st</sup> MARCH, 2007**

### **Executive Summary:**

By the end of March 2007, there were 106 facilities in Malawi in the public health sector delivering ART free of charge to HIV-positive eligible patients.

In the first quarter of 2007 (January to March), there were 13,770 new patients started on ART. For the quarter, 39% of patients were male and 10% were children (14 years and below). By the end of March 2007, there were 95,674 patients who had ever started on ART. For the cumulative analysis, 40% of patients were male and 8% were children (14 years and below).

Of 95,674 patients who ever started on free ART, their outcomes by end of March 2007 were as follows: 69% were alive and on ART at the site of registration, 12% had died, 10% were lost to follow-up, 9% had transferred out to another facility (and were presumably alive) and <1% had stopped treatment.

Of 66,438 patients alive and on ART:- 96% were on the first line regimen, 4% were on an alternative first line regimen and a small number (196) were on a second line regimen. Of those alive and on ART, 98% were ambulatory; 95% were fit to work; 5% had one or more major side effects assessed during the month of March, and 94% of patients showed 95% or more adherence to therapy based on pill counts.

- 6-month outcome analysis on 11,792 patients starting free ART from 102 sites showed: 81% were alive (73% alive and on ART + 8% transferred out)
- 12-month outcome analysis on 8,934 patients starting free ART from 68 sites showed: 74% were alive (63% alive and on ART + 11% transferred out)
- 18-month outcome analysis on 7,637 patients starting free ART from 61 sites showed: 70% were alive (59% alive and on ART + 11% transferred out)
- 24-month outcome analysis on 4,530 patients starting free ART from 34 sites showed: 70% were alive (56% alive and on ART + 14% transferred out)

### **Resume from January 2003 to March 2007 in the public and private sector:**

	By Dec 2003	By Dec 2004	By Dec 2005	By Dec 2006	By Mar 2007
<b><i>Public sector ART sites</i></b>	9	24	60	103	106
New patients started ART in year	No data	10,183	24,657	43,981	13,770
Cumulative patients started ART	3,000	13,183	37,840	81,821	95,674
Patients alive on ART	No data	10,761	28,110	57,356	66,438
<b><i>Private sector ART sites</i></b>	0	0	23	38	38
New patients started ART in year	0	0	977	2,370	513
Cumulative patients started ART	0	0	977	3,347	3,861
Patients alive on ART	0	0	977	2,624	2,951
<b><i>Public and Private ART sites</i></b>	9	24	83	141	144
New patients started ART in year	No data	10,183	25,634	46,351	14,283
Cumulative patients started ART	3,000	13,183	38,817	85,168	99,535
Patients alive on ART	No data	10,761	29,087	59,980	69,389

## **Introduction and Methodology:**

This is a report on the status of antiretroviral therapy (ART) in Malawi up to March 31<sup>st</sup> 2007.

Between April and June 2007, all 106 health facilities in the public sector earmarked for ART were visited. The visits were conducted by the Ministry of Health Clinical HIV Unit (Simon Makombe, Amon Nkhata and Anthony Harries), who were accompanied by their partners: Ralf Weigel from Lighthouse, John Aberle-Grasse from CDC; Joseph Yu from the Taiwan Medical Mission; Janet Chikonda from Area 18 HC. Four ART supervisors, Dr Shibru Berhanu (Mzuzu Central Hospital), Dr Damas Ngoma (Lighthouse), Dr Tewdros Bizuwork (Zomba Central Hospital) and Dr William Katamba (QECH) also accompanied the Unit. Stuart Chuka from MBCA conducted the private sector supervision and wrote the private sector ART report: some data are reported here, but it will come as a separate attachment.

Each visit lasted half a day during which a structured supervision and a drug stock-level assessment were carried out, and this was followed by a monitoring and evaluation exercise. Data on ART parameters were collected from the patient master cards and the ARV Register. Much effort was made in ensuring that outcomes (particularly death and defaulter) were correct, and we believe that outcomes are accurately represented in this report. During the visits, certificates for excellent performance awarded at the last visit were presented to the clinic staff (see below).

During this supervision, Management Sciences for Health (MSH) provided a consultant per team (Lameck Thambo and Zina Nkhono) to brief all ART sites (clinicians, nurses and pharmacy technicians) on the forthcoming Cotrimoxazole Preventive Therapy initiative: briefings were carried out, and monitoring tools were provided to sites at the same time. The supervision visits were also used to distribute pill cutters to all sites for the better management of children on ART

Three data sets were collected, with outcome status censored on 31<sup>st</sup> March 2007:-

The first data set is the status of new patients who were started on free ART in Malawi between January 1<sup>st</sup> and March 31<sup>st</sup>, 2007, **the “quarterly analysis”**. Data on ART clinics and staff complements, HIV-related diseases, and HIV counselling and testing were also collected for this 3-month period.

The second data set is the status of all patients who ever started on free ART in Malawi up to March 31<sup>st</sup>, 2007, **the “cumulative analysis”**.

The third data set is the **6-month, 12-month, 18- month and 24-month cohort outcome analysis**, with data collected on patients starting ART in Malawi in Q3 2006, Q1 2006, Q3 2005 and Q1 2005 respectively

Data collation and presentation for the years 2003 – March 2007:

Data on ART for the 4 years (2003 – March 2007) are collated and presented to show the progress made in both the public and private sector for ART. Data for the private sector are collected from the private sector ART report produced from MBCA.

## **Results:**

### **General:**

By March 2007, 106 government and mission health facilities in the country had started patients on free ART. The facilities in general were doing a very good job, despite the increasing work load. Systems of referral to ART were working well. All the facilities were using the national monitoring tools.

*ARV regimens:* All facilities were using the recommended first line regimen (Stavudine + Lamivudine + Nevirapine) for the majority of their patients. There were 63,883 patients alive and on first line treatment, 2,349 patients alive and on alternative first line regimens (Zidovudine-based or Efavirenz-based) for patients with adverse drug reactions, and 196 patients alive and being treated with a second line regimen for failure of the first line therapy.

*Qualitative assessment of sites:* All 106 ART clinics were tidy and orderly, and the filing systems and record keeping were excellent. A qualitative assessment of the patient master cards and registers was carried out. The table, with pertinent results, compares the 106 facilities in Q1 2007 with the previous qualitative assessment of 103 facilities in Q4 2006. The standards were generally good, and Q1-07 was similar in many respects to Q4-06. Most sites had done a quarterly and cumulative cohort analysis, and this time there was a slight improvement in accurate and reliable results.

<b>Parameter</b>	<b>ART sites (%) Q4 2006 N=103</b>	<b>ART sites (%) Q1 2007 N=106</b>
<b>ARV Register:</b>		
ARV Register numbers correct and match master cards	101 (99%)	103 (97%)
All columns in the ARV register always completed	102 (99%)	105 (99%)
Dates of all adverse outcomes recorded	93 (90%)	94 (89%)
All ARV outcomes updated every three months	75 (73%)	88 (83%)
<b>Patient Master Card:</b>		
Case finding data properly completed on each card	102 (99%)	100 (94%)
Regular record of weight done at each patient visit	102 (99%)	104 (98%)
In each monthly visit all outcome columns completed	100 (97%)	103 (97%)
Pill counts for adherence done according to directives	100 (97%)	102 (96%)
HIV-diseases always indicated on back of master card	97 (94%)	98 (92%)
<b>Cohort Analysis:</b>		
Quarterly cohort analysis done by the site before visit	96 (93%)	103 (97%)
Cumulative analysis done by the site before visit	96/102 (94%)	99 (93%)
Cohort outcomes correctly done	61/96 (64%)	74/105 (70%)

*Certificates of excellence:* Sites which show an excellent performance in completing ART registers and master cards and correctly doing cohort analyses are awarded a certificate of excellence, approved and signed by the Secretary for Health. Results for the last three quarters, including the current quarter are shown below:

October – December 2006: sites = 102 - Certificates awarded to 53 (52%)

January – March 2007: sites = 103 – Certificates awarded to 52 (50%)

April to June 2007: sites = 106 – Certificates awarded to 64 (60%)

*ART Clinics and Staff:* A record is made in all facilities of the number of days in a week that the ART clinic is open to see either new or follow-up patients plus the number of staff who operate the clinic when it is functioning. The total number of days in a week given for ART at all facilities in Q1 2007 was 304.5, translating into an average of 2.87 working days in a week when facilities operate an ART clinic. The table shows the number of staff days per week for clinicians (mainly clinical officers), nurses and clerks for each of the regions and for the country as a whole. The FTE parameters indicate the number of clinicians, nurses and clerks working full-time per week on ART. Thus, for the country as a whole, the equivalent of 84 clinicians was working full-time in ART delivery each week. The workload to man ART clinics is obviously increasing quarter by quarter (compare previous reports).

	Clinician days/week	Nurse days/week	Clerk days/week
North: 22 sites	55	60	55
Central: 39 sites	161	174	136
South: 45 sites	211	223	174
<b>Total: 106 sites</b>	<b>427</b>	<b>457</b>	<b>365</b>
<b>FTEs</b>	<b>85</b>	<b>91</b>	<b>73</b>

**Quarterly Analysis for the period January 1<sup>st</sup> to March 31<sup>st</sup>, 2007:**

***1. New patients started on ART between January and March 2007:***

The national data for new patients started on ART in these three months are shown in **Table 1** on quarterly analysis. The details of patients and their outcomes from each facility according to region are shown in the **Annexes**.

There were 13,770 new patients started on ART, with males representing 39% and females representing 61% of the total. Adults comprised 90% of patients and children (aged 14 years or less) comprised 10%. There were data on occupation in 13,476 patients, and the most common recorded occupations were subsistence farmer, housewife and small-scale business people (eg vendors). The majority of patients (67%) were started on ART because of being in WHO Stage III.

The number of patients started on ART because of TB was 1,596 (1,368 with PTB, and 228 with EPTB). This constitutes 12% of new patients started on ART and 25% of patients registered for TB (N=6,266) during the quarter.

The number of women referred from PMTCT to start on ART was 370; 45 facilities had recorded PMTCT referrals in the ARV Register.

The three-month outcomes were good with 95% of patients being alive and on ART at the end of June. Other outcomes such as ambulatory status, work status, side effects and pill counts (where done) were very satisfactory.

The table below shows the recruitment of new patients to ART in Q1 2007 and Q4 2006, compared with what is expected in terms of ceilings and targets given to facilities. There has been a small but gradual increase in recruitment. In quarter 1, 2007, there were 106 facilities (71 low burden, 27 medium burden, 2 medium/high burden, 3 high burden and 3 very high burden sites): these sites should have placed 13,575 patients on ART and in the event exceeded their target by 101%. Several sites as a result of recruiting well have been moved upwards to a higher category of recruitment.

<b>In each quarter:</b>	<b>Q4 2006</b>	<b>Q1 2007</b>
Number of facilities	103	106
Expected number of patients to start ART	12,975	13,575
Observed number (%) of patients started on ART	12,253 (94%)	13,770

## ***2. HIV testing, CD4 testing capability and HIV-related diseases: January to March 2007***

### ***HIV test data:***

The data on HIV test results for patients tested in the 106 facilities between January 1st and March 31<sup>st</sup>, 2007 are shown below.

<b>Parameter</b>	<b>North</b>	<b>Central</b>	<b>South</b>	<b>Total</b>
Number HIV tested	20,071	44,789	57,902	122,762
Number (%) HIV positive	3,029 (15%)	8,866 (20%)	17,857 (31%)	29,752 (24%)
Number (%) referred to ART	2,800 (92%)	7,344 (83%)	14,281 (80%)	24,425 (82%)

Altogether, there were over 120,000 clients and patients tested in the 3-month period. Of those HIV-positive, over 80% were referred for clinical assessment for ART – this is a good development, and one that is being encouraged by the HIV Unit of the Ministry of Health.

### ***CD4 machines:***

There were 17 facilities (17% of total) where there was CD4 count capability, unchanged from the previous report: 2 sites in the North (Mzuzu Central Hospital and Mzimba DH); 9 sites in the Central region (Kamuzu Central Hospital, Lilongwe SOS, Likuni Mission Hospital, Partners in Hope, St Gabriels MH, Kapiri MH, Dowa DH, Mtengwanthenga MH, Salima DH); 6 sites in the South (QECH, Blantyre Dream Site, Thyolo DH, Chiradzulu DH, Zomba Central Hospital, Machinga DH). No data were collected on this occasion on number of tests done or on functioning status of the machines.

***HIV-related indicator diseases:***

The number of patients with 4 key HIV-related indicator diseases, diagnosed and treated in the 106 facilities during the quarter, was recorded. TB numbers were obtained from the TB registers; Kaposi's Sarcoma (KS) numbers from the ART registers; numbers of those with cryptococcal meningitis and oesophageal candidiasis from the DIFLUCAN registers kept in the pharmacy or from master cards in those sites not participating in the DIFLUCAN programme. The data are shown in the table below: the data are very similar to data reported in previous quarters:-

<b>HIV Disease</b>	<b>North</b>	<b>Central</b>	<b>South</b>	<b>Total</b>
Tuberculosis (TB)	398	2,236	3,632	6,266
Kaposi's Sarcoma (KS)	42	155	575	772
Cryptococcal meningitis (CM)	111	190	299	600
Oesophageal candidiasis (OC)	208	598	741	1,547

**Cumulative analysis for patients ever started on ART up to March 31st, 2007**

The national data for all patients who ever started on ART up to the end of March 2007 are shown in **Table 2** on cumulative analysis. The details of patients and their outcomes from each facility according to region are shown in the **Annexes**.

There were 95,674 patients who had ever started on ART – this includes patients who transfer-in from other sites, and it is understood that these patients are counted twice. If we assume that all patients who transfer-out then transfer-in, then the number of new patients ever started on ART is 87,422. There were males representing 40% and females representing 60% of the total. The majority of patients were adults, and 8% were children aged 14 years or below.

There were data on occupation for 89,906 patients, and the most common occupations were housewife, farmer and small-scale business (e.g. vendor). The majority of patients (65%) were started on ART because of being in WHO Stage III.

The number of patients started on ART because of TB was 15,126 (12,909 with PTB, 2,110 with EPTB and 135 with type unknown). This constitutes 16% of all patients started on ART. The number of women ever started on ART as a result of referral from PMTCT was 1,346 (2% of all women), referred from within 70 ARV sites.

The cumulative primary treatment outcomes were as follows. There were 69% of patients being alive and on ART in the facility where they were first registered, and 9% transferred out to another facility and thought to be alive. Thus, 78% of patients (a proportion of whom is double counted) were probably alive. Date of death was known in all patients who died: 3,526 (32%) died in month 1; 2,519 (23%) died in month 2; 1,348 (12%) died in month 3 and 3,715 (33%) died at a later date. Default rates (i.e., patients lost to follow-up) were 10%. The number of patients stopping treatment was small at less than 1%. The cumulative secondary outcomes (ambulatory and work status, side effects and pill counts) were good.

### Treatment outcomes of cohorts at 6-, 12-, 18- and 24-months

Treatment outcomes of cohorts were performed at 6-months, 12-months, 18-months and 24-months. The 6-months survival was from patients registered for free ART between July and September 2006 and censored on 31<sup>st</sup> March 2007 (102 facilities). The 12- months survival was from patients registered for free ART between January to March 2006 and censored on 31<sup>st</sup> March 2007 (68 facilities). The 18-months survival was from patients registered for free ART between July and September 2005 and censored on 31<sup>st</sup> March 2007 (61 facilities). The 24-months survival was from patients registered for free ART between January and March 2005 and censored on 31<sup>st</sup> March 2007 (34 facilities). Results are shown in the table.

	<b>6-months Survival</b>	<b>12-months Survival</b>	<b>18-months survival</b>	<b>24-months survival</b>
Number started on ART:	11,792	8,934	7,637	4,530
<b>“Presumed Alive”</b>	<b>9,474 (81%)</b>	<b>6,599 (74%)</b>	<b>5,398 (70%)</b>	<b>3,178 (70%)</b>
<i>Alive and on ART</i>	8,663 (73%)	5,668 (63%)	4,476 (59%)	2,551 (56%)
<i>Transferred out</i>	811 (8%)	931 (11%)	922 (11%)	627 (14%)
Dead	1,230 (10%)	1,256 (14%)	1,289 (17%)	686 (15%)
Lost to follow up	1,040 (9%)	1,033 (12%)	891 (12%)	621 (14%)
Stopped treatment	48 (<1%)	46 (<1%)	59 (1%)	45 (1%)

The 6-month survival analysis indicated that just over 80% of patients were alive (74% alive and on ART + 7% transferred out and presumed alive). The 12-month survival indicated that 74% were alive while the 18-month and 24-month survival analyses indicated that about 70% of patients were alive (alive and on ART + transferred out and presumed alive). What is apparent over the 4 six-month periods is that the percentage alive and on ART declines and the transfer-outs increase. Also from 12-months to 24-months the percentage of deaths and defaulters combined is approximately similar at 25-30%.

### Stocks of ARV drugs and drug for HIV-diseases as of January to March 2007

In each facility a stock count was performed of ARV drugs and certain specific drugs for HIV-related diseases.

#### **ARV Drugs:**

Stocks of ARV drugs (first line and alternative first line and second line) are shown below in tabular form. It is difficult this time round to interpret the drugs stocks – the drug distribution from UNICEF (which should have been here in April) began in June and a few sites therefore were replenished at the time of the assessment. According to the stocks at the time of the assessment, there were enough First line ARV drugs to start about 34,000 new patients on therapy (this lasts for 6-7 months at current rates of recruitment) and enough “Continuation packs” to keep the current 66,000 patients plus the new patients starting on treatment for about 4 months.

First line ARV drugs + Duovir	North	Central	South	Total
	Number of tins of tablets (either 15 or 60 in each tin)			
Lamivir-30 – SP (15 tab tins)	6,400	10,217	5,965	22,582
Lamivir-40 – SP (15 tab tins)	2,354	3,932	4,775	11,061
Triomune-30- SP (15 tab tins)	6,619	10,294	6,132	23,045
Triomune-40 – SP (15 tab tins)	2,364	3,945	4,843	11,152
Triomune-30- CP (60 tab tins)	67,991	110,951	98,600	277,542
Triomune-40 – CP (60 tab tins)	7,469	21,453	18,359	47,281
Duovir for PEP (60 tab tins)	See next row - combined with zidovidine and lamivudine			
First line alternative ARV drugs at central hospitals	North	Central	South	Total
	Number of tins of tablets (60 or 30 in each tin)			
Zidovudine-Lamivudine (60 tab)	1,408	3,651	14,472	19,531
Nevirapine (60 tab)	3,162	4,156	13,541	20,859
Lamivir 30 (60 tab)	26	544	2,765	3,335
Lamivir 40 (60 tab)	174	923	1,232	2,329
Efavirenz (30 tab)	43	1,062	4,522	5,627
Second line drugs at central hospitals	North	Central	South	Total
	Number of tins of tablets (180 or 30 in each tin)			
Tenofovir (30 tab)	150	494	1,541	2,185
Lopinavir/ritonavir (180 caps)	150	2,236	754	3,140

### *Drugs for HIV-related diseases*

Pill counts and stock outs for drugs for key HIV-related diseases are shown below.

Drugs for HIV-diseases	North 22 sites	Central 39 sites	South 45 sites	Total 106 sites
	Number of tablets or vials in facilities in each region			
Fluconazole tablets	6,826	30,873	34,075	71,774
Cotrimoxazole tablets	1,390,000	3,396,417	1,838,086	6,624,503
Acyclovir tablets	51,091	67,569	66,768	185,428
Ceftriaxone vials	1,007	1,222	8,933	11,162
Ciprofloxacin tablets	24,300	200,009	304,544	528,853
Vincristine vials	2,227	2,655	3,656	8,538
Morphine tablets	1,265	15,119	8,807	25,191
Amitryptiline	617,100	1,227,268	273,100	2,117,468

Drugs for HIV-diseases	North 22 sites	Central 39 sites	South 45 sites	Total 106 sites
	Number of ART facilities with NO DRUGS in stock			
Fluconazole tablets	13	13	21	47 (44%)
Cotrimoxazole tablets	5	8	12	25 (24%)
Acyclovir tablets	11	9	25	45 (42%)
Ceftriaxone vials	17	28	33	78 (74%)
Ciprofloxacin tablets	10	10	13	33 (31%)
Vincristine vials	15	10	22	47 (44%)
Morphine tablets	19	23	22	74 (70%)
Amitryptiline	9	5	19	33 (31%)



Although the number of tablets of certain drugs appears reasonable, over 40% of facilities had stock-outs of fluconazole, acyclovir and vincristine, while 70% were out of morphine.

An audit was conducted on all sites to see if they had 3 of the key drugs needed for good quality OI care. The three drugs chosen were cotrimoxazole, vincristine and morphine. There were 27 (25%) facilities that had all three drugs present in the pharmacy.

An audit was carried out on cotrimoxazole preventive therapy (CPT). In the ART clinic, patients on CPT are indicated in master cards, and at the moment, this is the only data available for CPT usage. Thus, the number of ART patients taking CPT was documented. There were 66 sites providing CPT to ART patients, and in the first quarter of 2007, there were 40,217 patients receiving ART and CPT together.

### **District ART Training:**

District ART Training manuals had been distributed to all ART sites at the beginning of the year, and ART clinic staff were asked to run trainings for hospital and health centre staff. The amount of ART training done is shown in tabular form below. There is no information about the quality of these trainings.

Quarter and Year	Number of Sites doing Training	Number of staff trained
Q2- 2006	30	1,392
Q3-2006	38	1,444
Q4-2006	21	1,038
Q1-2007	16	1,246

### **ART data for 2003 to March 2007:**

This is shown below in tabular form, and shows the results from public and private facilities in Malawi providing ART using Global Fund support.

	By Dec 2003	By Dec 2004	By Dec 2005	By Dec 2006	By Mar 2007
<b><i>Public sector ART sites</i></b>	9	24	60	103	106
New patients started ART in year	No data	10,183	24,657	43,981	13,770
Cumulative patients started ART	3,000	13,183	37,840	81,821	95,674
Patients alive on ART	No data	10,761	28,110	57,356	66,438
<b><i>Private sector ART sites</i></b>	0	0	23	38	38
New patients started ART in year	0	0	977	2,370	513
Cumulative patients started ART	0	0	977	3,347	3,861
Patients alive on ART	0	0	977	2,624	2,951
<b><i>Public and Private ART sites</i></b>	9	24	83	141	144
New patients started ART in year	No data	10,183	25,634	46,351	14,283
Cumulative patients started ART	3,000	13,183	38,817	85,168	99,535
Patients alive on ART	No data	10,761	29,087	59,980	69,389

## Comment

ART scale up in Malawi continues to progress well. Sites are doing well, despite the increasing burden of work. The majority are taking the initiative of doing quarterly and cumulative cohort analysis, and outcome results are beginning to improve. However, this will require continued and regular vigilance and supervision. The treatment outcomes for ART are reasonable. Early death rates are still a problem, and defaults still constitute a significant proportion of the outcomes.

ARV drug stocks were again assessed, and nationally drugs stocks are adequate. Towards the end of the supervision, UNICEF started distributing the April consignment of ART drugs. Some drugs for HIV-related diseases are still in short supply in some facilities.

## Challenges and potential solutions:

As in previous reports, some important challenges emerging from ART scale up are highlighted for discussion and action. Progress or otherwise in these areas by March 31<sup>st</sup> 2007 is discussed below in bullet point style, and action points are in bold:-

- Human resources. There is still a dire shortage of staff at all facilities and at the central unit. Formal ART training (and funding) for peripheral staff was decentralised to districts at the beginning of the year. As of the end of June 2007, there has been no training of staff at any of the Round 1 or Round 2 sites. This is a source of concern, as continued training is important
- Infrastructure. ART clinic rooms and pharmacies are now becoming too small to handle patient numbers and drugs. Despite raising this issue every quarter, there is still no progress or plans being made. **It is suggested that the PAM unit of MOH starts the process of inspecting rooms and pharmacies with a view to recommending extensions and new building**
- Pharmacy management. In general there is good pharmacy management of ARV drugs and OI drugs. **However, pharmacies would benefit from CMS supervision**
- Drugs for HIV-related diseases. All ART sites have now been briefed about Cotrimoxazole Preventive Therapy (CPT). Unfortunately, the CPT procurement is delayed and will not arrive in country until September.
- Cohort analysis. The supervision teams have learnt to be time –effective with the manual system of doing cohort analysis, and are coping with ART sites having 1000+ patients. These techniques have been passed on to the peripheral sites. However, a computer records system should make this easier. A pilot computer study is ready to start in 4 sites: 2 in the North (Rumphu and Nkhata Bay) and two in the Central region (Salima and Dedza)

- Data quality and supervision. Although many sites are maintaining good records and doing cohort analysis, about 30% of sites are still unable to generate accurate cohort analyses. Supervision visits continue to be a critical mechanism to ensure that complete and accurate facility (and national) level data are available for monitoring and drug forecasting needs
- Access to services and follow-up of patients. One clinician and one nurse from all 55 Round 3 sites have been trained, and many of them have also completed the clinical attachments. In Q3, 2007, the process of site accreditation will take place
- Clinical supervision. The 4 ART supervisors, at Mzuzu Central Hospital, Kamuzu Central Hospital, QECH and Zomba Central Hospital, are doing a good job and assist greatly with the national monitoring exercise as well.
- High early death rates. Still, two thirds of the ART deaths occur in the first three months of treatment. Cotrimoxazole preventive therapy (CPT) has been shown in an operational audit to reduce these deaths by about 40%. Regular CPT will hopefully start in all sites from September this year
- Rewarding good performance in ARV clinics. The quarterly issuing of certificates for excellent performance continues to be a popular and cheap way to motivate staff
- A retrospective monitoring of viral load suppression and viral drug resistance has now been completed in four sites under the guidance of MOH, CDC and WHO, and this will inform about the efficacy or otherwise of the first line regimen. Results are expected back in the next few months

We finally thank all the facilities for their sincere welcome and co-operation with the Unit and its partners during these supportive visits, and we congratulate the staff in these facilities for their excellent work.

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**19<sup>th</sup> June 2007**

<b>TABLE 1: New patients started on ART between January 1st and March 31st, 2007</b>				
Total Started	Number of patients started on ART in the 3 months			13770
Sex	Number (%) males			5408 39%
	Number (%) females			8362 61%
Age	Number (%) adults aged 15 years and above			12328 90%
	Number (%) children aged 14 years and below			1442 10%
Occupation:	Housewife			2942 22%
	Farmer			4208 31%
	Forces			134 1%
	Teacher			279 2%
	Business			1736 13%
	HCW			158 1%
	Student			705 5%
	Other			3314 25%
	Occupation Not Known			294
Reasons for starting ART:	Number (%) with Stage III			9199 67%
	Number (%) with Stage IV			2566 19%
	Number (%) with low CD4 count			2005 15%
	Number (%) with TB			1596 12%
	Number of patients registered with TB in the quarter			6266
Patient Outcomes	Number of patients started on ART in the 3 months			13770
	Number (%) alive and on ART			13015 95%
	Number (%) dead			527 4%
	Number (%) defaulted			0 0%
	Number (%) stopped treatment			30 0%
	Number (%) transferred out permanently to another site			198 1%
ART Regimen	Of those alive and on ART:-			13015
	Number (%) on first line regimen			12775 98%
	Number (%) on alternative first line regimen			220 2%
	Number (%) on second line regimen			20 0%
Ambulatory Status	Number with ambulatory status known			12900
	Number (%) ambulatory			12517 97%
Work Status	Number with work status known			12900
	Number (%) at work			12087 94%
Side Effects	Number with side effects counted			12018
	Number (%) with significant side effects			391 3%
Adherence	Number where pill count has been done			9461
	Number (%) with pill count showing 95% adherence			8931 94%

<b>Total Started</b>	<b>Total number of patients started on ART</b>	<b>95674</b>	
Sex	Number (%) males	38142	40%
	Number (%) females	57532	60%
Age	Number (%) adults aged 15 years and above	88337	92%
	Number (%) children aged 14 years and below	7337	8%
Occupation	Housewife	18805	21%
	Farmer	23789	26%
	Forces	1261	1%
	Teacher	3223	4%
	Business	11870	13%
	HCW	1443	2%
	Student	4198	5%
	Other	25317	28%
	Occupation Unknown	5768	
Reasons for starting ART:	Number (%) with Stage III	62362	65%
	Number (%) with Stage IV	21293	22%
	Number (%) with low CD4 count	12019	13%
	Number (%) of patients started on ART due to TB	15126	16%
Patient Outcomes	Total number of patients started on ART	95674	
	Number (%) alive and on ART	66438	69%
	Number (%) dead	11108	12%
	Number (%) defaulted	9483	10%
	Number (%) stopped treatment	389	0%
	Number (%) transferred out permanently to another site	8252	9%
ART Regimen	Of those alive and on ART:-	66438	
	Number (%) on first line regimen	63883	96%
	Number (%) on alternative first line regimen	2349	4%
	Number (%) on second line regimen	196	0%
Ambulatory Status	Number with ambulatory status known	64682	
	Number (%) ambulatory	63156	98%
Work Status	Number with work status known	64682	
	Number (%) at work	61527	95%
Side Effects	Number with side effects counted	60895	
	Number (%) with significant side effects	2855	5%
Adherence	Number where pill count has been done	48541	
	Number (%) with pill count showing 95% adherence	45576	94%
Death	Of those who died with Date of death recorded	11108	
	Number (%) dying in the first month	3526	32%
	Number (%) dying in the second month	2519	23%
	Number (%) dying in the third month	1348	12%
	Number (%) dying after the third month	3715	33%

