

Protocol of operational research

**Title:** Assessment of improvement of HIV/AIDS care service in two districts, i.e., both Mumbwa and Chongwe districts where the mobile ART service was introduced.

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## BACKGROUNDS

In Zambia, ART program was introduced in public health service. However scaling up of ART is still challenging due to poor access of rural population to ART service because many of health centres can not fulfill accreditation of ART centre (Accreditation guidelines 2006). From the view of accessibility, decentralization of ART service is crucial. However decentralization should not be done without guaranteeing quality of ART service. Otherwise drug resistance to ARV might increase due to poor management. Considering this situation, alternative approach called mobile ART service, which is expected to improve accessibility to ART without increasing ART centres with accreditation has been proposed by GRZ MOH and JICA project team. In this approach, although a health centre alone can not fulfill the requirement, regular ART service (e.g. twice a month) is provided by fulfilling requirement of ART centre with support from outside (e.g. district hospitals and referral health centres). On mobile service days, a

supporting team visits health centres and support their staff to decide ART eligibility of HIV positive clients and to provide ART. Another obstacle against scale-up of ART might have been the limited availability of HIV testing in rural settings. HIV testing used to be available in the ART centres such as Mumbwa District Hospital and Chongwe Referral Health Centre, so the clients or the blood of those clients should have been sent to those ART centres when health centres had to provide the HIV testing to clients. As a part of mobile ART service, Finger-Pricking Testing (FPT) has been introduced to health centres and is expected to contribute to increase in HIV testing. Because the number of sites with the provision of HIV testing increases, the access of PLWHA to ART service is expected to be improved. Another challenge is follow-up of pre-ART PLWHA. The improvement of access to ART service may also improve the regular visit of pre-ART PLWHA for proper follow-ups. Because tuberculosis is one of the most common infectious diseases of PLWHA, the improvement of access to both HIV testing and ART service is also expected to contribute to scaling up of HIV care for HIV co-infected TB clients.

Recently the mobile ART service programme has come to be recognized as one of ART programmes which provide better access to PLWHA. Therefore, GRZ MOH together with JICA HIV/AIDS Care Project has decided to carry out systematic evaluation of the mobile ART service programme.

## OBJECTIVES

### *Main objectives*

1. To assess quality of HIV testing using FPT by persons without health professional qualification
2. To evaluate treatment outcomes of ART (in terms of continuation of ART without default/death) under the ART program at peripheral facilities of primary health care ("mobile ART service program") in the district
3. To evaluate implementation of HIV care (HIV testing and ART) to TB patients under mobile ART service program
4. To investigate how traveling cost/time required to receive ART after the introduction of mobile ART service programmes
5. To explore the possible ways of regular ART service in rural settings
6. To accumulate lessons learnt from the mobile ART service which could be expected to

be introduced nationwide

### *Secondary objectives*

- 1: To investigate whether or not the treatment outcome (in terms of continuation of ART without default/death) under the mobile ART service programme is better compared to that under the ART service available only at selected facilities which fulfill ART centre criteria (Accreditation Guidelines).
2. To investigate whether or not the implementation of HIV care (HIV testing and ART) to TB patients under the mobile ART service programme is better compared to that under the ART service available only at selected facilities which fulfill ART centre criteria.
- 3: To assess the burden of ART clients under the mobile ART service programme in terms of cost and time required to obtain ART service.

## METHODS

### *Design*

This is an observational study to evaluate the effectiveness of the mobile ART service which is introduced as a possible mode of scaling-up of ART to rural areas by GRZ MOH and the JICA HIV/AIDS Care Project. The analysis is done by cross-sectional and cohort analysis as shown in the following analysis section.

### *Sites for the assessment*

Both Mumbwa and Chongwe District will be the sites. However, the primary site will be Mumbwa where the mobile ART service and the proper information system required for the service has been established earlier.

### *Assessment period*

Data from 2004 to 2008 will be collected for evaluation since ART program was introduced in 2004 in Zambia.

### *Sources of information*

The information for this operational research will be collected from the followings.

1. CD4 lab register: there is no formal log book. CD4 is crucial information for HIV care so CD4 register book will be introduced (annex-1)
2. ARTIS (ART registers), ART treatment card (existing form)
3. TB register, TB treatment cards (existing form)
4. Interview to clients (information on cost for receiving care, issue related to adherence, verifying information on documents)
5. The results of Quality control of Finger-Pricking test by ELISA at UTH  
DBS will be used for blood collection. Lot Quality Assurance method is applied.  
It will be necessary for the OR team to collect information by asking the health centre staff in order to confirm the missing records.  
Details are described in the analysis section.

#### *Data entry*

The data will be entered in computers in the same format as the original records. The database as shown in the attached file will be used for TB/HIV.

#### *Ethics Issues*

GRZ MOH and JICA project team conducts this evaluation study for the implementation of the project, not for the research requiring Institutional Review Board. Information to be collected is for the care of patients and should be available in the existing information system. Patients will be informed of the objectives of questions verbally when they will be asked to provide information and they reserve right to decline answer. The written informed consent will not be obtained because of the nature of this OR. In analysis, all variables leading to personal identification will be removed. Data collection and entry will be made by investigators who must observe confidentiality of the patients. The investigators are requested to sign on the document of declaration of nondisclosure when they can agree. The personal identifiers will be removed for the data analysis.

#### *Analysis*

1. Assessment of quality of Finger-pricking test (in cooperation with JICA Lab Network Project)

Table 1. Definitions of indicators for quality assessment of FPT:

		EIA at UTH		
		positive	negative	Total
FPT	positive	a	b	a+b
	negative	c	d	c+d
	Total	a+c	b+d	a+b+c+d

sensitivity:  $a/(a+c)$

specificity:  $d/(b+d)$

False positive:  $b/(a+b)$

False negative:  $c/(c+d)$

Target (quality to achieve) and sample size: The rapid test is regarded as screening (therefore, two positive results are required to decide that a client is HIV positive.) Therefore, the target of sensitivity (reference is ELISA at UTH) should be 100%. Specificity of 99% might be acceptable. According to HIV testing results in 2007, the positivity rate ranges between 20-50%. If 50% is adopted to estimate the sample size conservatively, the sample size of 360 seems enough.

Table 2

Specificity	99%
Sensitivity	100%

		ELISA at UTH		
		pos	neg	
FPT	pos	500	5.050505051	500
	neg	0	500	500
		500	505.0505051	1000

positivity rate by FPT 50%

Critical values FP 1.01% FN 0.00%

Sample size 360

Confidence Level (one-side) 0.974134719

Sample collection: Considering operational issues, the collection of samples (DBS: Dried Blood Spots) for three months may be appropriate. The expected number of the samples to be collected will be 630 according to the average number of tests done in Oct. and Nov. 2007 at three HCs. The random sampling will be appropriate for quality control since there may exist some variations of quality depending on facilities and collection periods.

## II. Assessment of regular ART care

Prognosis is measured by survival, death and defaulter at 6 month and 1 year (and 1.5 and 2 year ) on ART. Those indicators are shown by proportion.

### II-1. Categorization of ART clients (cohort) for analysis

Table 3 Cohorts used for analysis

	ART clients in areas of HC where mobile ART is introduced		ART clients in areas outside ART mobile clinic
	Starting ART in mobile ART HC	Starting ART in district hosp	
2004	Cohort-2004		
2005	Cohort-2005		
2006		Cohort-2006a	Cohort-2006b
2007	Cohort-2007c	(Cohort-2007a)	Cohort-2007b
2008	Cohort-2008c	(Cohort-2008a)	Cohort-2008b

### II-2. ART coverage

The descriptive study will be made to see the improvement of ART coverage.

II-2.1. Mapping of the number of ART clients in each area (catchment area of each health centre) by year will be done in order to see the change in geographical distributions of PLWHA receiving ART.

II-2.2 Compare the size of cohorts to see whether the mobile ART areas have more increase in ART clients.

a) Change in the absolute number of ART clients in the mobile service area:

{Cohort-2007c and Cohort-2007a} - cohort-2006a

b) Change in the absolute number of ART clients outside the mobile service area:

Cohort-2007b – Cohort- 6b

c) Change in distribution of both mobile ART service areas and non mobile ART service areas

Table 4. Cohorts used to describe change in distributions of ART clients

	Mobile ART areas	Non-Mobile ART areas	Total
2006	A Cohort-2006a	B Cohort-2006b	C (A+B)
2007 + 2008	D Cohort-2007a Cohort-2007c Cohort-2008a Cohort-2008c	E Cohort-2007b Cohort-2008b	F (D+E)

Comparison of A/C with D/F will be made to see whether or not the distribution has been changed.

### II-3.. Outcomes of ART

The cohort analysis of the treatment outcome similar to TB will be made.

Outcome is determined by patient's status at 6 month, 1year, 1.5 year and 2 year (preliminary) using definitions shown in Table 5:

Table 5. Categories of outcomes of ART

On-ART
Died
Lost/defaulted (did not come to receive ART more than 2 months after due day)
Transferred-out (moved to other ART catchment area with proper referral procedures)
ART stopped for medical reasons
No results (this should be categorized into one of the above categories after validation. If no result obtained, then it should be regarded as Lost/Defaulted in the final assessment)

The outcome of ART is measured by a proportion of each category among PLHWA who started ART during a certain period of time (cohort).

Example: Outcome of ART at 6<sup>th</sup> month: On-ART rate is the proportion of PLWHA who started ART in 2007 and continued to be on ART at 6<sup>th</sup> month after starting ART.

	No	%
No of PLWHA who started ART in 2007	153	100%
On-ART at 6th month	105	68.6%
Death before 6th month of ART	10	6.5%
Lost/Defaulter before 6th month of ART	18	11.8%
Transferred-out	13	4.6%
No Results	13	8.5%

On-ART rate at 6month: 68.6%

Death rate at 6month: 6.5%

Lost/Defaulter rate at 6 month: 11.8%

#### II-3.1 Analysis of outcome

i) Overall trend of outcomes for all cohorts by year

Table 6. Dummy table of Cohort Analysis at 6th month of ART by year of starting ART (preliminary analysis)

Clients by year of starting ART	On ART (%)	Death (%)	Lost/Default (%)	Transferred -out (%)	No results (%)	Total
2004	18 (54.5%)	8 (24.2%)	1 (3.0%)	3 (9.1%)	3 (9.1%)	33
2005	123 (65.4%)	27 (14.4%)	30 (16.0%)	6 (3.2%)	2 (1.1%)	188
2006	263 (68.8%)	29 (7.6%)	75 (19.6%)	7 (1.8%)	8 (2.1%)	382
2007	105 (68.6%)	10 (6.5%)	18 (11.8%)	7 (4.6%)	13 (8.5%)	153
2008*						
Total						

\*: PLWHA who started ART during the period of Jan-April will be included in analysis  
Difference of outcomes (such as On-ART) will be evaluated statistically using test for difference in proportion.

ii) Analysis of trend outcome adjusted for other factors

Multivariable analysis using logistic regression will be made to investigate difference in outcomes by year adjusting for other factors such as severity and age/sex.

Table 7. Dummy table of cohort analysis of factors associated died at 6 month

Factor	value	Odds Ratio	P>z	[95% CI]
Sex	Male	Reference	—	—
	Female	0.464	0.005	0.270 - 0.797
Initial Clinical stage	Increase	1.244	0.000	1.124 - 1.376
Initial Functional status	Increase	5.356	0.000	2.934 - 9.779
Year	2004	Reference	—	—
	2005	1.055	0.925	0.343 - 3.244
	2006	0.848	0.771	0.279 - 2.575
	2007	0.542	0.339	0.155 - 1.901

II-4. Tend of outcome for 2006-2008 in mobile ART and non mobile ART areas

The same table 2-1 is made for mobile ART area and non mobile ART areas.

For mobile ART areas

Table 8. Dummy table of Cohort Analysis at 6 months of ART by year of starting ART (preliminary analysis)

Clients by year of starting ART	On ART (%)	Death (%)	Lost/Default (%)	Transferred -out (%)	No results (%)	Total
Cohort-2006a						
Cohort-2007a						
Cohort-2007c						
Cohort-2008a						
Cohort-2008c						
Total						

For non-mobile ART areas



Table 9. Dummy table of Cohort Analysis at 6<sup>th</sup> month of ART by year of starting ART (preliminary analysis)

Clients by year of starting ART	On ART (%)	Death (%)	Lost/Default (%)	Transferred -out (%)	No results (%)	Total
Cohort-2006b						
Cohort-2007b						
Cohort-2008b						
Total						

II-5. Comparison of outcome between mobile ART and non-mobile ART for 2007 and 2008.

To see difference in treatment outcomes (such as On-ART rate), outcomes of PLWHA who started ART in 2007 and 2008 will be compared between mobile ART areas and non-mobile ART areas. Evaluation will be made statistically by testing the difference of two proportions.

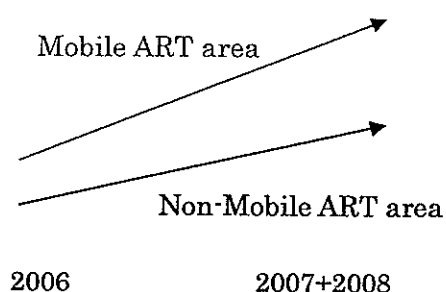
Table 10. Dummy table of Cohort Analysis at 6 months of ART by year of starting ART (preliminary analysis)

Clients by year of starting ART	On ART (%)	Death (%)	Lost/Default (%)	Transferred -out (%)	No results (%)	Total
Cohort-2007a						
Cohort-2007c						
Cohort-2008a						
Cohort-2008c						
Cohort-2007b						
Cohort-2008b						
Total						

II-6. Comparison of the trends of different areas to evaluate the effect of the mobile ART service

Prognosis will be compared between cohorts in both mobile and non-mobile ART service areas. If the mobile ART service itself improves the outcomes, then more improvement of the outcomes could be expected in the mobile ART service areas compared to the non-mobile ART areas. If the difference such as shown in the following figure is observed, it can be supporting findings of the effectiveness of the mobile ART service on the improvement of outcomes.

Figure 1 Trend of on-ART rate



The formal analysis may be done using the regression model incorporating the interaction terms between year and area. Normally the large sample size is, however, required to test the interaction, so this analysis will be considered as preliminary.

### III. Evaluation of TB/HIV

#### III-1. Categorization of TB patients for analysis

In this protocol, cohorts show in Table 11 will be used.

Table 11 Cohorts used to describe TB/HIV activities

Year of starting ART	TB patients registered in HCs where mobile ART is introduced	TB patients registered in areas outside ART mobile clinic
2006 July- Dec	Cohort-2006a	Cohort-2006b
2007	Cohort-2007a	Cohort-2007b
2008	Cohort-2008a	Cohort-2008b

#### III-2. Overall implementation of HIV care to TB patients in July 2007-2008

III-2.1 To measure overall implementation of HIV care to TB patients in July 2007 – 2008

Including all cohorts of 2007 and 2008

HIV care to TB patients will be summarized as Table 12 where the HIV testing is considered as the entry point to ART.

Table 12 Summary table of HIV care to TB patients

	No	Proportion measured
No. Newly registered TB during half a year	A	
No. HIV positive known before TB diagnosis	B	
No. HIV status unknown before TB diagnosis	C	
No. received HIV testing	D	D/C
No. HIV+ among the examined	E	E/D
No. received ART eligibility evaluation among HIV positive	F	F/E
No. received ART eligibility evaluation using CD4 among HIV positive		
No. eligible	G	
No. started ART among the eligible	H	H/G

There may be some missing information especially in non-mobile ART sites during earlier years. These are most likely to happen in B, C, D, F and G. This could be the barrier to the accurate evaluation of the ART care to TB patients.

It might be difficult to judge whether or not the HIV testing has been done for non-positive patients because it was often observed that only positive results were recorded. For HIV testing, however, it may be possible to obtain information by validating records through interviewing health workers in charge. Most probably it is not possible to obtain accurate information on eligibility (F) in non-mobile ART service areas (i.e., both in mobile ART service areas before starting ART and in non-mobile ART service areas).

If the missing information can not be negligible (i.e. more than 20%), then the proxy indicators are adopted as follows.  $[B+E = \text{all HIV positive TB}] / A$  is a proxy indicator of D/C.  $H/[B+E = \text{all HIV-positive TB}]$  is a proxy indicator of H/G and H/A. Those proxy indicators might not be suitable for the comparison among different sites because TB/HIV situation may not be similar among them. However, it might be appropriate to use them for the comparison between different periods in each site, assuming TB/HIV situation is stable in each site.

### III-3. TB/HIV activities in different areas and years

The same table is made for different cohorts as follows:

Cohort-2006a, Cohort-2006b, Cohort-2007a+Cohort-2008a,  
Cohort-2007b+Cohort-2008b.

Proxy indicators are also calculated.

III-4. Comparison of recent TB/HIV activities in mobile ART sites with in non-mobile ART sites

III-4.1 Comparison of HIV testing rate in mobile ART sites with in non-mobile ART sites for the year of 2007 and 2008

The real testing rate for TB patients who had their HIV status unknown before TB diagnosis (D/C in Table 12) should be compared as long as possible. The chi-squared test will be used.

If the missing information is not negligible, then the proxy measure  $([B+E] / A)$  will be used. In this case, it should be noted that the comparison may not be accurate.

III-4.2 Comparison of ART to eligible TB patients in mobile ART sites with in non-mobile ART sites for the year of 2007 and 2008

It might be difficult to obtain eligibility examination status in non-mobile ART site, because information on eligibility may not be recorded properly in TB treatment cards especially in non-mobile ART service sites,  $H/[B+E]$  and  $H/A$  will be used for comparison. In this case, the ART rate may tend to increase in non-mobile site because the HIV testing may likely be applied to some selected clients which leads to lower CD4. However, the actual direction and degree of bias is virtually impossible to estimate. Therefore, the comparison based on this indicator should be made carefully.

III-5. Analysis of factors related to HIV testing in 2007 and 2008

To identify factors associated with HIV testing, logistic regression analysis will be made including type of facilities (mobile ART vs non-mobile ART), age, sex, TB type (smear+ pulmonary, smear- pulmonary, extra-pulmonary) and category (new/others).

III-6. Comparison of HIV care in mobile ART area with in non-mobile ART area, and before with after the introduction of the mobile ART service.

III-6.1 Comparison of HIV care to TB patients in mobile ART area before with after the introduction of mobile ART service

Change in HIV positivity rate as proxy measure of HIV testing rate in mobile ART area before/after the introduction of mobile ART service will be described both with the actual indicators (D/C for HIV testing and H/G for ART in Table 12) and the proxy indicators

( $[B+E]/A$  for HIV testing and  $H/[B+E]$  for ART in Table 12). If the missing rate of information on D/C and H/G is more than 20%, then the proxy indicators will be used as follows.

Cohort	HIV positive	HIV negative/HIV unknown	Total
Cohort2006a	$[B+E]_{1a}$	$A_{1-}[B+E]_{1a}$	$A_{1a}$
Cohort2007a/Cohort2008a	$[B+E]_{2a}$	$A_{2-}[B+E]_{1a}$	$A_{2a}$

Chi-squared test is used to see statistical difference in proportions between two periods.

Change in ART rate in mobile ART area before/after the introduction of mobile ART service will be described as follows.

Cohort	ART	No ART	Total of HIV positive
Cohort2006a	$G_{1a}$	$[B+E]_{1a} - G_{1a}$	$[B+E]_{1a}$
Cohort2007a/Cohort2008a	$G_{2a}$	$[B+E]_{2a} - G_{2a}$	$[B+E]_{2a}$

Chi-squared test is used to see statistical difference in proportions between two periods.

III-6.2 Comparison in HIV care to TB patients in non-mobile ART service areas in 2006 with in 2007/2008

Change in HIV positivity rate in non-mobile ART service areas will be measured in the same manner as in mobile ART service areas, where it is considered as the proxy measure of HIV testing rate. The period will be from 2006 to 2007/2008.

Cohort	HIV positive	HIV negative/HIV unknown	Total
Cohort2006b	$[B+E]_{1b}$	$A_{1b-}[B+E]_{1b}$	$A_{1b}$
Cohort2007b/Cohort2008b	$[B+E]_{2b}$	$A_{2b-}[B+E]_{1b}$	$A_{2b}$

Chi-squared test is used to see statistical difference in proportions between two periods.

Change in ART rate in non-mobile ART service area before/after the introduction of mobile ART service in mobile ART site will be described as follows

Cohort	ART	No ART	Total
Cohort2006b	$G_{1b}$	$[B+E]_{1b} - G_{1b}$	$[B+E]_{1b}$
Cohort2007b/Cohort2008b	$G_{2b}$	$[B+E]_{2b} - G_{2b}$	$[B+E]_{2b}$

Chi-squared test is used to see statistical difference in proportions between two periods.

III-7. Assessment of the effect of mobile ART service on improvement of HIV care to TB patients

The similar assessment will be made to the effect of the mobile ART service.

The following cohort will be used in this analysis.

Year of starting ART	TB patients registered in HCs where mobile ART is introduced	TB patients registered in areas outside ART mobile clinic
2006 July- Dec	Cohort-2006a	Cohort-2006b
2007 and 2008	Cohort-2007a and Cohort-2008a	Cohort-2007b and Cohort-2008b

### III-7.1 HIV testing

If more than 20% of values of HIV testing is missing in one or more of cohort-2006a, cohort-2006b, cohort-2007a+cohort-2008a, cohort-2007b+cohort-2008b, the proxy indicator (E/A) will be used.

The logistic regression analysis by incorporating year (2006 July-Dec vs 2007 and 2008), age, sex, type of TB, sites (mobile ART site vs non-mobile ART site) and interaction term between year (2006 Jul-Dec vs 2007/2008) and sites (mobile ART sites vs non-mobile ART sites) will be used to see the effect of the mobile ART service on HIV testing.

### III-7.2 ART to TB patients

If more than 20% of values of eligibility is missing in one or more of cohort-2006a, cohort-2006b, cohort-2007a+cohort-2008a, cohort-2007b, the proxy indicator (H/[B+E]) will be used.

The logistic regression analysis by incorporating year (2006 July-Dec vs 2007 and 2008), age, sex, type of TB, sites (mobile ART site vs non-mobile ART site) and interaction term between year (2006 Jul-Dec vs 2007/2008) and sites (mobile ART sites vs non-mobile ART sites) will be used to see the effect of mobile ART service on ART to TB patients.

### III-8 Treatment outcomes of Tuberculosis

The treatment outcomes of TB patients for 2006 and 2007/2008(until June) will be analyzed, although the analysis will be preliminary since it takes for 8 months to obtain the final TB treatment outcomes.

The comparison of both crude treatment success rates and death rates will be made by chi-squared test. Logistic regression analysis including year, sites, type of TB, age, sex will be made to investigate whether or not TB treatment outcomes have been improved recently.

As the intermediate indicators of TB treatment outcomes, 2 month death rate and on-treatment rate will be also analyzed in the same way.

#### IV. Travel cost and time required for receiving ART

The information on the travel cost and time will be obtained from health workers and mobile ART clients. The travels could be from clients' residences to either the district hospital or the mobile ART centres. The comparison on these two before/after the introduction of the mobile ART service will be made. The cost of the provision of the mobile ART service including human resources, infrastructures, fuel for the vehicles, and so on need to be analyzed as a cost of health provider side.

##### Study site

Mumbwa District Hospital ART center and 4 mobile ART sites in Mumbwa

##### Study population

ART Clients in the study sites

##### Sample size

A total of 500 PLWHA on ART, approximately  
(Mumbwa DH. 250, Mobile ART site 250)

##### Method

The face to face interview survey will be conducted with semi-structured questionnaire. The interviewers will be trained on the questionnaire and the themes of the study. All ART clients to mobile ART centres could be approached and interviewed. All ART clients to Mumbwa District Hospital ART center could be approached and interviewed until the number of the cases reaches 250.

#### V. Identification of the way how ART clients in rural areas recognize the due time to take ARVs

In order to collect and analyse information for IV. "Travel cost and time required for receiving ART" and V. "Identification of the way how ART clients in rural areas recognise the due time to take ARVs", a simple survey is carried out using the questionnaires as attached.

National guidelines recommend the use of watches/clocks to recognise the due time to take ARVs. However, whether or not they are always available in rural areas is not well known.

Sample size: Assuming 20% of clients have watches/clocks and desired 95% CI: 15 – 25%, the sample size under random sampling is 246.

A total of 500 PLWHA on ART, approximately  
(Mumbwa DH. 250, Mobile ART site 250)

#### Method

Face to face interview survey will be conducted by using semi-structured questionnaire. The interviewers will be trained on the questionnaire and the themes of the study. All ART clients to mobile ART centres could be approached and interviewed. All ART clients to Mumbwa District Hospital ART center could be approached and interviewed until the number of the cases reaches 250. Point estimate and 95% CI interval will be calculated based on normal approximation.

Total interviewed	No. having watch	%	95% CI
246	48	19.5%	14.6%- 24.5%

#### VI. Lessons learnt (qualitative part)

Information on benefits and difficulties which clients and health providers have will be collected by interviews.

#### LIMITATIONS OF THE EVALUATION

The comparison between before and after the introduction of the mobile ART service is difficult due to the nature of the observational study. The sites were selected in programmatic ways, not randomly, so the detection of pure effects of mobile ART service is not guaranteed. However, the probable bias is expected to tend to reduce the effect of new intervention. For example, this type of bias could affect the observation if we compare the defaulter rates before/after the introduction of mobile ART service. The ART clients living near the District Hospital tend to go to the District Hospital so defaulter rate is less likely to be high. Therefore, if it is observed that the outcomes in



mobile ART service is better, the observation might be valid.

### DISSEMINATION OF THE FINDINGS

The findings in this operational research will be disseminated internationally as well as nationally through presentation in workshops/meetings and publications. The reports will be made and disseminated to various cooperating partners as well as organizations directly involved in this evaluation. The findings are expected to be incorporated into national guidelines addressing scaling up of HIV testing and ART.

### FUNDING SOURCES

JICA project will bear the cost, a part of which could possibly be shared by GRZ. The travel cost to Zambia of Japanese collaborators will be supported by International Collaborative Research Fund and Japanese Ministry of Labor, Health and Welfare.

### REFERENCES

Accreditation guidelines

ART guidelines





JICA

## Report on Mobile ART service in Mumbwa District :

### Lessons Learned

Mumbwa District Health Management Team

JICA, Integrated HIV/AIDS Care  
Implementation Project at District Level

### Background

- Prevalence of HIV (Central Province): 15%
- ART service was provided only at Mumbwa District Hospital as of April, 2006.  
(Nangoma Mission Hospital started ART service in July, 2006.)
- Estimated ART clients: about 5,000 ~ 7,500
- Number of ART clients as of April, 2006: < 450



Strong demand to scale-up of ART service

### Background

- JICA's "Integrated HIV/AIDS Care Implementation Project" in close partnership with the Ministry of Health commenced in April 2006 for the duration of three years, in order to support the national initiatives of expanding ART services.
- The Project aims at improving accessibilities to ART through strengthening capacities of the District Health Management (DHMT) Teams in providing ART closer to communities.

### Progress of Mobile ART service

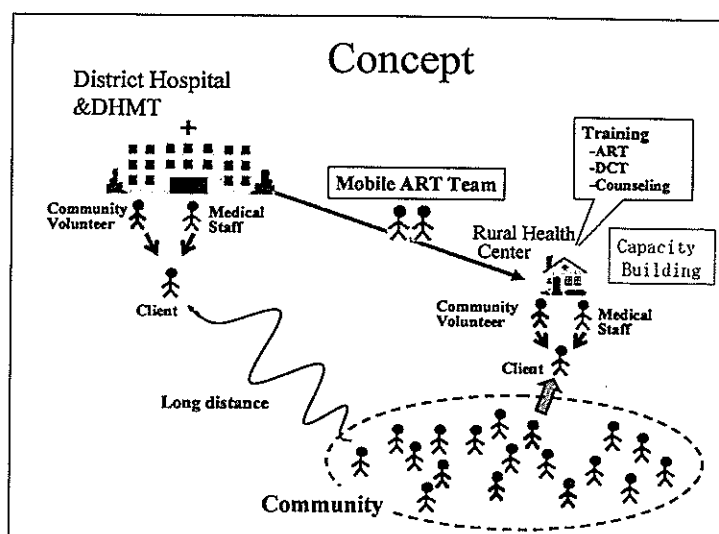
- In Mumbwa District, the DHMT started mobile ART services at rural health centres in the first Quarter of 2007, accelerating the expansion of ART services especially in rural area.
- Mobile ART services offered in Mumbwa enable a rural health centre which cannot offer ART by itself to provide ART services through the human resource and technical support/assistance of the District Hospital.
- The Mumbwa model is especially unique in providing ART services by building capacities of existing healthcare system.

### Introduction of "the mobile ART service"

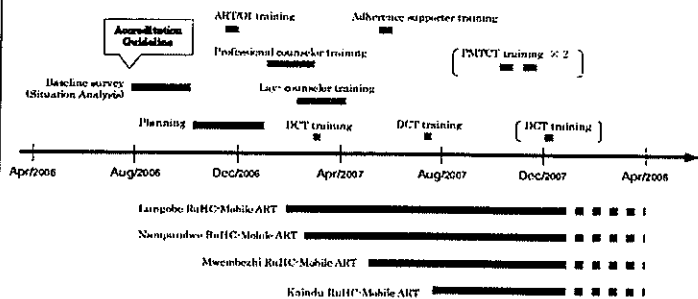
"Mobile ART Team" from the ART center (District Hospital) consists of :

- Doctor or Clinical Officer (Dr/CO)
- Pharmacist
- Lab staff
- Counselor
- other staff

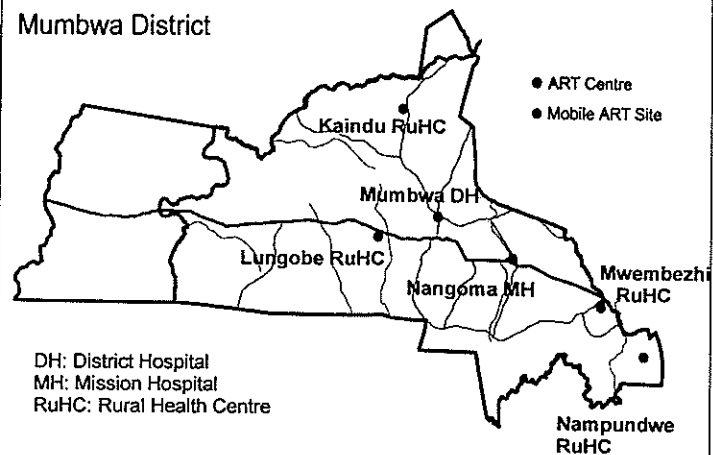
The Team visits "mobile ART centers" (RuHCs) regularly (in principle, every two weeks) to help its staff to provide ART service to the community people at respective RuHCs.



### Chronicle of major activities



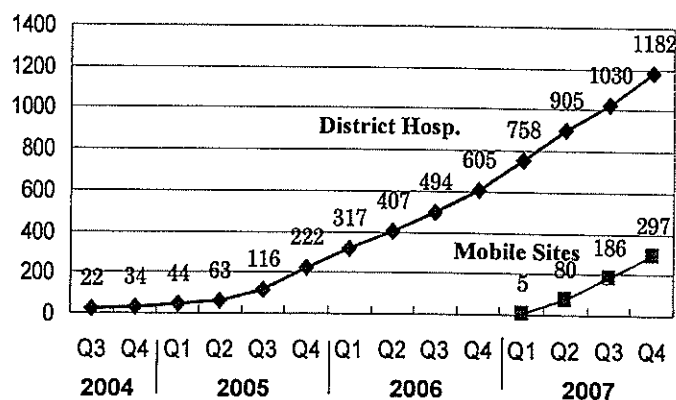
### Mumbwa District



### Mobile ART Sites

	Start at	Date	Human Resources
Lungobe RuHC	9/ Feb/2007	Every Two week Friday	C.O. 1 Ns. 1 E.H.T 1
Nampundwe RuHC	22/Feb/2007	Every Two week Wednesday	C.O. 1 Ns. 3 E.H.T 1
Mwembezi RuHC	23/May/2007	Every Two week Wednesday	C.O. 1 Ns. 3 E.H.T 1
Kaindu RuHC	26/July/2007	Every Two week Thursday	C.O. 1 E.H.T 1
Nalbanda RuHC	To be discussed	To be discussed	C.O. 1 E.H.T 1

### No. of ART clients



### Analysis on Quality of ART service

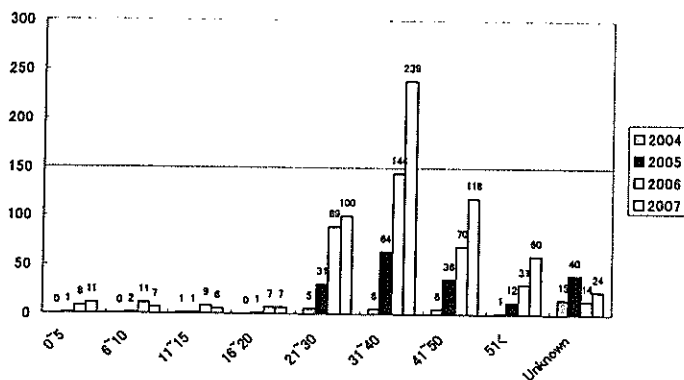
- The analysis was undertaken based on the clients' information recorded in the "Monthly ART Register" kept at each ART site, and the clients were limited to those who have been registered before the end of 2007.
- All data are taken from the official register system.
- Treatment outcomes evaluated at 6<sup>th</sup> month after starting treatment for descriptive purposes.

### Mumbwa District Hospital

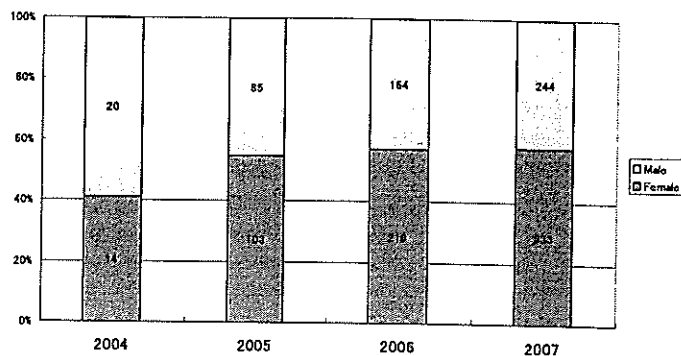
	2004 (Q3-Q4)	2005	2006	2007*
New ART enrollment	34	188	383	577
Cumulative ART No.	34	222	605	1182
<b>6th month outcome</b>				
On treatment	19 (55.9%)	119(63.3%)	262(68.4%)	308(72.5%)
Death	8 (23.5%)	27 (14.4%)	29 (7.6%)	23 (5.4%)
Lost & Default	4 (11.8%)	36 (19.1%)	85 (22.2%)	84 (19.8%)
Transfer Out	3 (8.8%)	6 (3.2%)	7 (1.8%)	10 (2.4%)

\* Cohort for Qtr4 2007 is still in follow-up.  
The result for analysis 2007 is for 425 clients enrolled in Q1-Q3

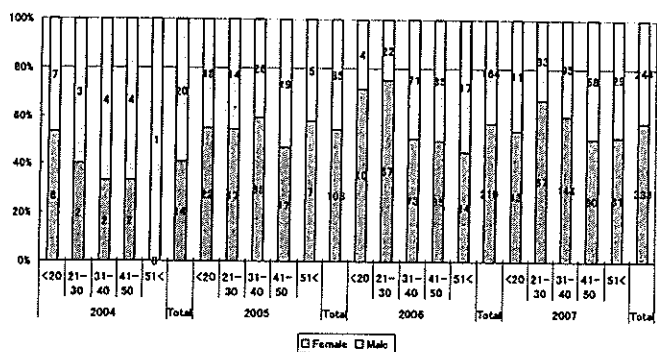
Age Distribution, Mumbwa DH



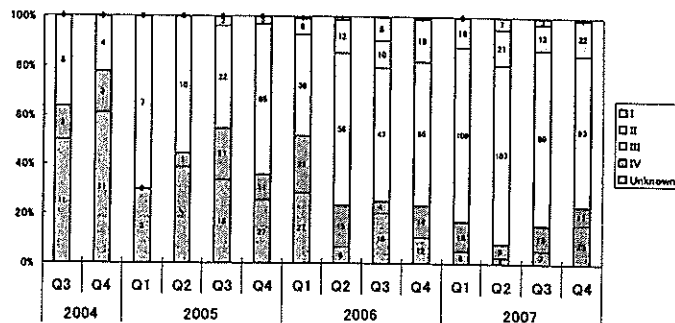
Gender Distribution among ART Clients, Mumbwa DH



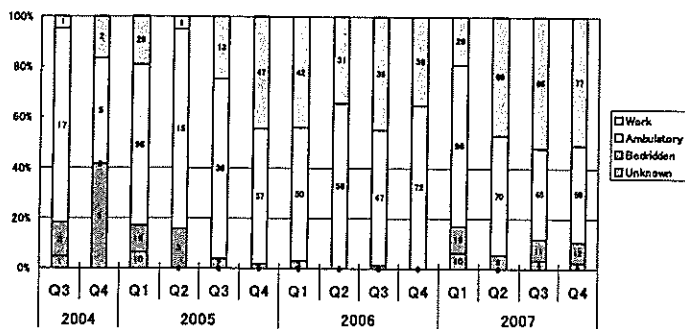
Gender Distribution among ART Clients (2), Mumbwa DH



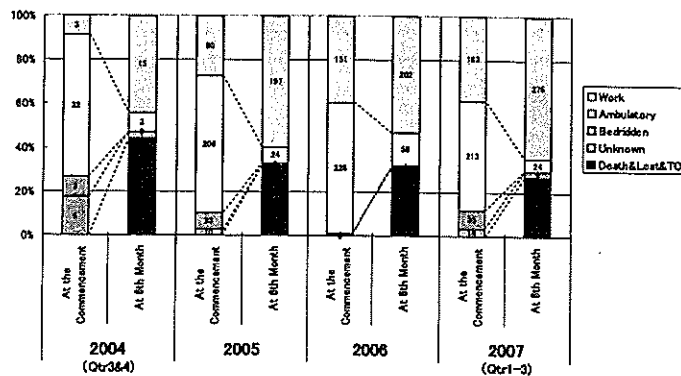
Clinical Staging at commencement of ART, Mumbwa District Hospital



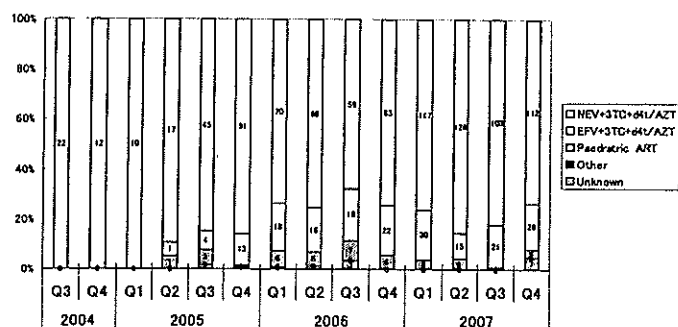
Functional Status at the commencement of ART, Mumbwa District Hospital



Functional Status at 6th month after starting treatment



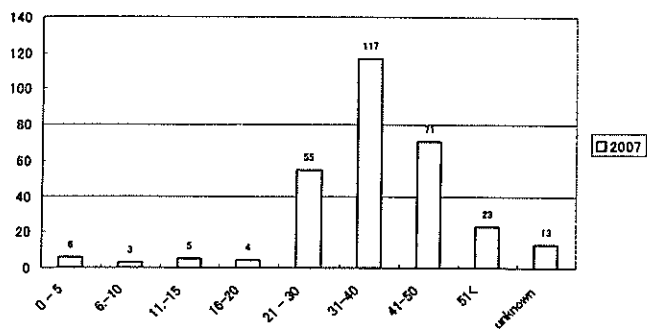
### Regimen at the Commencement of ART, Mumbwa DH



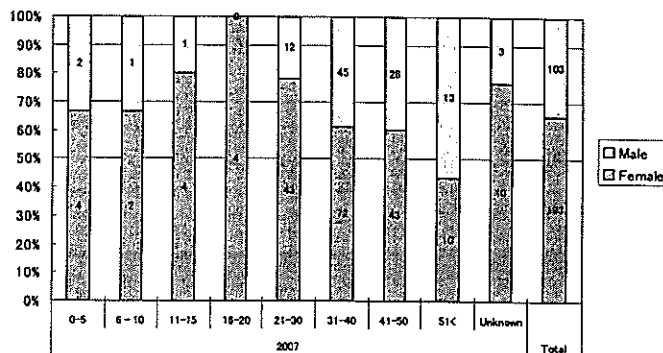
### Mobile ART service at RuHCs

	2007			
	Q1	Q2	Q3	Q4
New ART enrollment	5	75	106	110
Cumulative ART No.	5	80	186	296
Trans In	0	7	15	14
Cumulative T.I.	0	7	22	36
<b>6th month outcome</b>				
On Treatment	3 (60%)	62(82.7%)	94(88.6%)	
Death	2 (40%)	4 (8.0%)	11(10.3%)	
Lost & Default	0 (0%)	7 (9.3%)	1 (0.9%)	
Trans Out	0 (0%)	0 (0%)	0 (0%)	

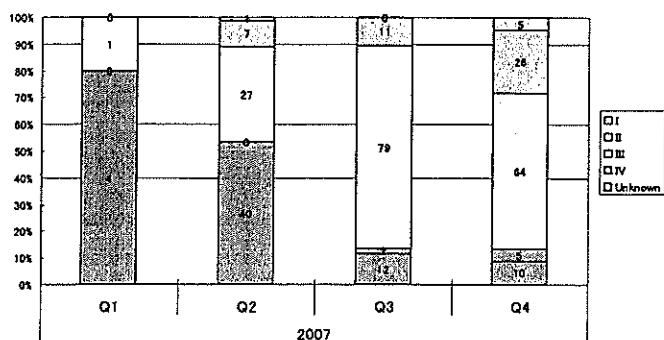
### Age distribution, 4 mobile ART sites combined



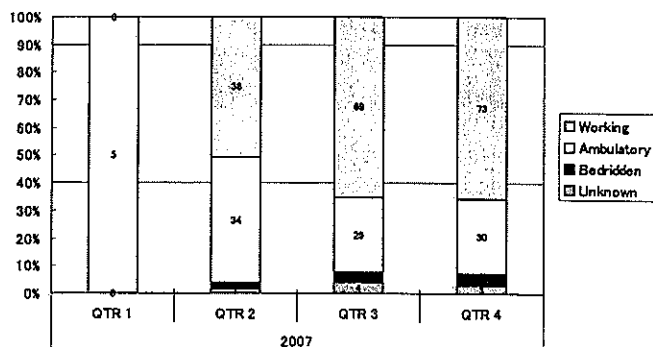
### Gender Distribution, 4 mobile ART sites combined



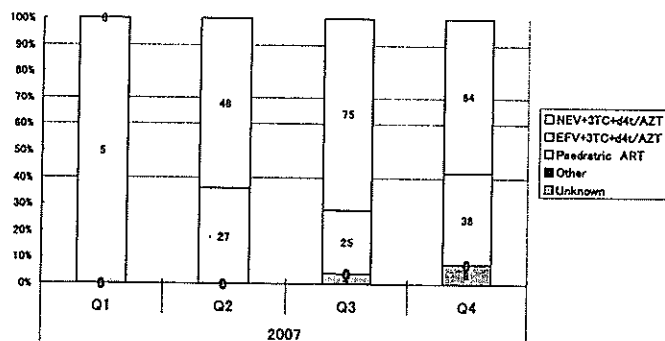
### Clinical Staging at commencement of ART, 4 mobile ART sites combined



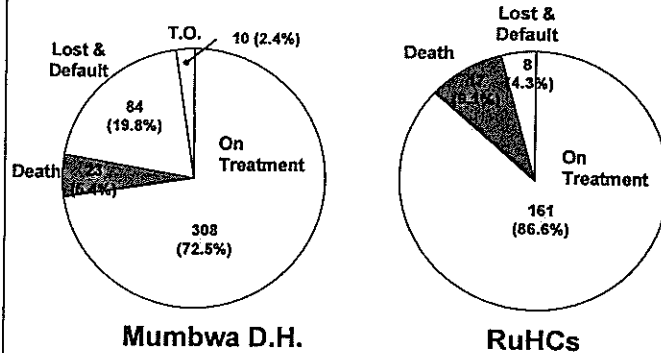
### Functional Staging at commencement of ART, 4 ART sites combined



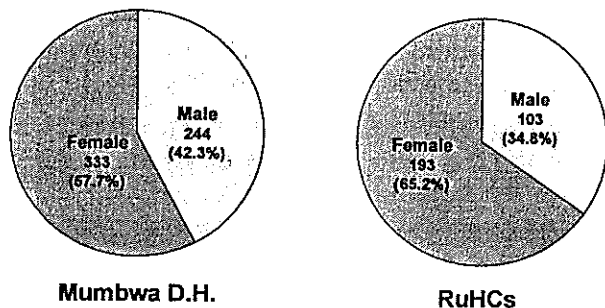
### Regimen at the commencement of ART, 4 mobile ART sites combined



### Comparison of treatment outcome at 6th month between Mumbwa DH and RuHCs, 2007 Q1-Q3



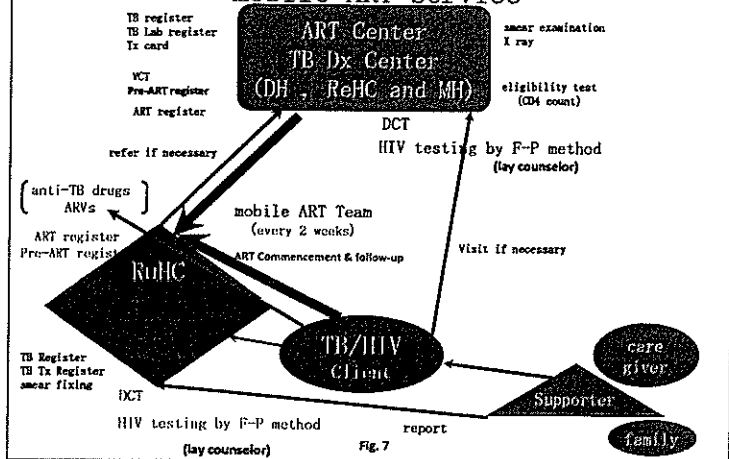
### Comparison of Gender distribution between Mumbwa D.H. and RuHCs, 2007



### Findings

- ART clients cared at RuHCs by mobile ART services are rapidly increasing. More than 15% of the whole ART clients in the district (ART clients in the district are almost 2000) have been treated at nearest health facilities.
- More women can access to ART service in RuHCs by mobile ART service compared to Mumbwa D.H.
- Lost and Defaulter rate at RuHCs is lower than that at D.H.

### (introduction of new system) mobile ART service



### TB/HIV at 4 mobile ART centers in Mumbwa (Before)

	TB						HIV in TB pts			
	# of TB pts	Type	SS	HIV test Results	testing rate (%)	# of TB pts on ART	Tx	Treated in		
Lungowe	17	P EP ?	12 5 ?	4 6 ?	23 11 ?	35	1	ART to TB: 0 TB to ART: 1 ?	Lungowe	1
Nampundwe	34	P EP ?	22 10 2	12 14 ?	35 16 ?	5	5	ART to TB: 1 TB to ART: 2 ?	Nampundwe	3
Mwembethi	18	P EP ?	11 7 ?	3 4 ?	16 5 ?	81	7	ART to TB: 0 TB to ART: 5 ?	Mwembethi	5 (1 TB)
Kaindu	12	P EP ?	10 2 ?	6 2 ?	50 17 ?	25	2	ART to TB: 0 TB to ART: 2 ?	Kaindu	2
Total						15	18.5 (%)			

### TB/HIV at 4 mobile ART centers in Mumbwa (After)

	TB				HIV in TB pts				Tx	Treated in	
	# of TB pts	Type	SS	HIV test Results	testing rate (%)	# of TB pts on ART	ART to TB	TB to ART			
Lungobe	P	24	+	5	+	12	97	5	2	Lungobe	4 (1 TD)
	EP	5	-	1	-	14					
	?	1	ND	?	?	2					
Nampundwe	P	32	+	15	+	28	94	8	2	Nampundwe	5
	EP	18	-	13	-	18					
	?	1	ND	23	ND	3					
Mwembethi	P	6	+	5	+	5	92	2	1	Mwembethi	2
	EP	5	-	?	-	6					
	?	1	ND	?	?	1					
Kaindu	P	0	+	?	+	?	100	1	1	Kaindu	1
	EP	1	-	?	-	?					
	?	0	ND	?	?	?					
Total		94				av. 81 (%)		17			18 (%)

### Comparison of some indicators

	Before	After
$\alpha$	28.4%	50.0%
$\beta$	18.5%	18.1%
$\gamma$	65.2%	36.1%

$\alpha$  : HIV positive rate among TB patients

$\beta$  : (# of ART patients)/(# of TB patients)

$\gamma$  : (# of ART patients)/(# of HIV positive TB patients)

### Findings

After the introduction of mobile ART service,

- more HIV positive TB patients have been found.
- the ratio of number of ART patients over number of TB patients is almost same as before.
- the ratio of number of ART patients over number of HIV positive TB patients has been reduced, probably because more HIV positive TB patients who are not yet eligible have been found.

### Conclusion

- This "Mumbwa model" of mobile ART service is managed by DHMT itself.
- Accessibility to ART service in district is improved by this mobile ART service.
- Quality of ART service at RuHC level through mobile ART service is satisfactory for the community compared to D.H.
- Effectiveness of capacity building of RuHC staff has began to appear.

### Way forward

- To continue improving the present mobile ART service.
- To expand the mobile ART service to other RuHCs.
- To compile the lessons learned from this experience of mobile ART service for future use.



**Report on the Workshop:**

**“Effective Community Outreach in HIV/AIDS**

**Using Mobile ART Service:**

**The Mumbwa Model Experience”**



**Integrated HIV/AIDS Care Implementation Project at District Level**

May 8, 2008

Prepared by MoH & JICA

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2. Introduction
3. Summary of Presentation
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  - (2) General Information about Mumbwa District
  - (3) Mobile ART in Mumbwa District
4. Discussion

- ANNEX -

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| ANNEX-2 | Participants list  |
| ANNEX-3 | Handout/General Information about ART<br>Dr. Mabvuto Kango, HIV specialist, Ministry of Health                               |
| ANNEX-4 | Handout/General Informantion about Mumbwa District<br>Mr. Maurice Mukololo, Manager of Planning and Development, Mumbwa DHMT |
| ANNEX-5 | Handout/Mobile ART in Mumbwa District<br>Dr. Christopher Dube, (Mumbuwa District Director of Health                          |

## 1. Workshop Information

- (1) Date: Tuesday May 6, 2008
- (2) Time: 09:00 ~ 13:00
- (3) Venue: Chrismar Hotel, Antelope Hall
- (4) Chair: Dr James Simpungwe and Dr. Nathan Kapata

## 2. Introduction

“Integrated HIV/AIDS Care Implementation Project at District Level” (the Project) under the collaboration with Japan International Cooperation Agency (JICA) has started in April 2006 in order to respond the Zambian Government’s needs which are to strengthen its ART services to PLWHA. The Project has been working to strengthen the HIV/AIDS care activities, especially on scaling up ART services at rural health centres both in Mumbwa and Chongwe districts since February 2007 by introducing “Mobile ART service”. The Project has been confirming that the quality of ART service at rural health centres by the help of mobile ART team is quite satisfactory and effective. Further, the promising results have been accumulated after one year experience. We strongly consider that the lessons learned from the experience in Mumbwa District, therefore, should be shared among concerned parties, although the data collected are still preliminary due to the short observation period.

## 3. Summary of Presentation

### (1) General information about ART by Dr. Mabvuto Kango

After giving the background of Zambian HIV situation, he explained how ART service has been developed in Zambia via Pilot phase (2003), Development phase (2004), Expansion phase (2005) and Further Expansion phase (2006 – 2007). Now all 72 districts in Zambia have ART facilities. There are 322 ART facilities and 149,199 clients are on ART at the end of Sep. 2007. A lot of achievements have been done, but Paediatric ART has just started and lots must be done from now on.

### (2) General information about Mumbwa District by Mr. Maurice Mukololo

The basic health information of Mumbwa District was given. He explained the present real situation that Mumbwa District faces such as human resource problem,

infrastructure/equipment problem, the problem in information system, poor statistics, poor safe water, inadequate trained staff, etc.

**(3) Mobile ART in Mumbwa District by Dr. Christopher Dube**

After giving the background of the introduction of mobile ART service in Mumbwa District, he showed the detailed data concerning ART service which have been collected mainly from ART register books at District Hospital and four mobile ART sites (Rural Health Centres). These data show the effectiveness of mobile ART service in the rural settings such as Mumbwa District where the accessibility of the community to ART service is the first and foremost problems. The quality of the mobile ART service is quite satisfactory, although the follow up must be done since the observation period for the service is short. There must be some rooms for the improvement of the service, and there are some possibilities for this model (Mumbwa model) to be applied to other districts and provinces.

**5. Discussion**

**(1) Total waning of mobile ART team:**

*“If the mobile ART sites to be permanent ART sites by total waning of mobile ART team, how is it possible to clear the “Accreditation?”*

--- The mobile ART team will not wane totally. The ART clients who are stable will be reviewed by mobile ART centre staff, but those who show signs and symptoms that need to be attended would still need to come on the day of mobile ART service.

**(2) Staffing problems of the District Hospital:**

*“Some staff at the District Hospital will be taken away to the mobile ART team, so aren't there any problem when there are shortage of staff even at the District Hospital?”*

--- Not only staff from the District Hospital, but also some staff from nearby Health Centre (Urban Clinic) will join the mobile ART team. Staffing is, of course, always the problem, but we somehow manage to assemble the mobile ART team with the help of Urban Clinic in order to help mobile ART centres.

**(3) Patient's care management:**

*“What will happen to the clients who have some complications and miss the*

*mobile ART day?"*

--- There is a form of communication using HF radios. If a client with complications comes to the mobile ART site, the discussion between the mobile ART centre and the District Hospital will be carried out to see whether or not the client could be treated locally. If necessary, the client will be brought to the District Hospital.

--- Some ARVs are left at the mobile ART centres for those clients who are stable. Now the new pharmacy register book is introduced for the precise recording with the help of JICA. This register is the perfectly same as the one by MoH, but it is made in such a way that it has a duplicate paper. Drugs are given to the mobile ART centres and available for the clients who missed the mobile ART day. One of the duplicates goes to the pharmacy at District Hospital for the accounting and the rest will remain at the mobile ART centre for the recoding.

**(4) Cost of the mobile ART service:**

*"How much does it cost to do the mobile ART service? Is it cost effective?"*

--- The allowances for the mobile ART team are about 1.2 million ZMK and the fuel are about 3 ~ 4 million ZMK, so roughly the budget for the mobile ART service will be about 5 million ZMK. The figure will go up as we scale up. The mobile ART service is cost effective for the clients who do not travel long distances as before.

**(5) Defaulters:**

*"The defaulter rate at District Hospital is relatively high. What countermeasures are taken to it?"*

--- The PLWHA support group is involved. The members of this support group come on ART day, and they talk to the clients giving health education. We have also adherence supporters who are based at District Hospital on daily basis. On the follow up in the community, we are yet to do this.

**(6) Transfer in/transfer out:**

*"Why don't you have transfer out clients at mobile ART centres? What are the reasons of high mortality rate at mobile ART sites?"*

--- The mobile ART service has been started just one year ago, so until now we have only transfer in clients. We may have transfer out as time goes on. For high mortality rate, we must do some survey from now.

(7) Hard to reach:

*“Do you have any mobile ART sites which are hard to reach, and what do you plan to do for that?”*

--- Nalubanda Rural Health Centre is one such example which is to be opened next month. Especially in the rainy season, it is difficult to reach there. There is a health post between this health centre and the District Hospital. The team can go to this health post, and the staff from Nalubanda can access there by motorbike. By using this health post as a relay point, we will be able to conduct mobile ART service.

(8) Community counsellors:

*“What is your experience with the community counsellors? Do you see the fact that more people are being counseled and tested?”*

--- Yes, since the community counsellors have started practicing, the high number of people are tend to be counselled and tested. We need to convince the Medical Council of Zambia that the community counsellors are capable enough to conduct HIV testing by Finger Pricking method. In this project, the survey on the quality of Finger Pricking method by lay counsellors are being conducted by using DBS (Dired Blood Spot) samples under the cooperation with UTH.

(End)



## Improvement of TB/HIV situation at Rural Health Centers by mobile ART clinic

### JICA Integrated HIV/AIDS Care Implementation Project at District Level

Dr C. Dube<sup>1</sup>, Mr N. Kayama<sup>1</sup>,  
Dr I. Nozaki<sup>2</sup>, Dr T. Hayakawa<sup>2</sup>,  
Dr N. Yamada<sup>3</sup>

(1: MOH, Zambia, 2: JICA expert, Zambia, 3: RIT, Japan)

## General information of Zambia



Fig. 1

Area: 752,610 (km<sup>2</sup>)  
Population: 10.5 million (2004, WB),  
population growth rate 1.4% (2004, WB)  
Capital: Lusaka (pop.: 1.7 million)  
Tribes: 73 (Tonga, Nyanja, Bemba, Lozi, etc.)  
Languages: English, Bemba, Nyanja, Tonga, Lozi,  
etc.  
Religion: Christians (>80%), Islam, Hindu, etc.

## HIV prevalence in Zambia



Fig. 2

- Population: 10.5 million (2004, WB)
- 1 (One) million: HIV positive (2003)
- National HIV prevalence rate: 16.5%
- Mumbwa district 154km west of Lusaka
- Population of Mumbwa district: 167,000

Mumbwa District  
(Central Province)

Chongwa District  
(Lusaka Province)

Fig. 3

## Project Purpose

HIV/AIDS care services will be improved and become more easily accessible for the community people in the target districts.



To make a model such that ART services will be expanded to the rural health center level

## Difficulties & constraints in the target areas

- absolute shortage of medical staff
- poor access to ART centers in the rural areas (scattered settlements in the rural areas)
- poor transportation system
- poverty
- existence of relatively strong stigma
- lack of education

## "Accreditation Guidelines" in May, 2006. by MOH (Ministry of Health) of Zambia

In order to be able to provide quality ART services, every ART site must be reviewed every 2 years and must be cleared on the following criteria such as;

- basic lab services
- CT
- Management of STI, TB
- Pharmacy
- PMTCT
- Prophylaxis & Management of OI
- Psychosocial support
- risk reduction
- etc.



All Rural Health Centers (RuHCs) in the Project sites can not be ART centers on their own.

### Introduction of mobile ART services

"Mobile ART Team" from the ART center (District Hospital)

- Doctor or Clinical Officer (Dr/CO)
- Pharmacist
- Lab staff
- Counselor
- other staff

visit respective RuHC regularly (every two weeks) to help its staff to provide ART services to the community people at RuHC

### Staffing of RuHCs

Table 1

	clinical (CO)	Nurse (Ns)	Environ Health Techno (EHT)	Classified Emplo (CDE)	total
Lungobe	1	0	1	2	4
Nampurdwe0		3	1	2	6
Mwembazhi1		2	0	2	5
Kaindu	1	0	1	2	4

### Trainings to staff at mobile ART centers by JICA

Table 2

	ART/OIs managem.		Counselor		Diagnostic & Testing (D)		Finger Print		Adherenc Counselor	
Lungobe	CO	1	EHT	1	CO	1	EHT	1	CDE	2
			CHW	1			CHW	1		
Nampund	Ns	1	Ns	1	Ns	2	Ns	1	CDE	2
			CHW	1			CHW	1		
Mwembe	CO	1	Ns	1	Ns	1	CDE	1	CDE	1
Kaindu	CO	1	CHW	2	CO	1	CHW	2	CDE	1

CHW: community health worker  
\* Trained before the Project started

### TB Treatment (existing system)

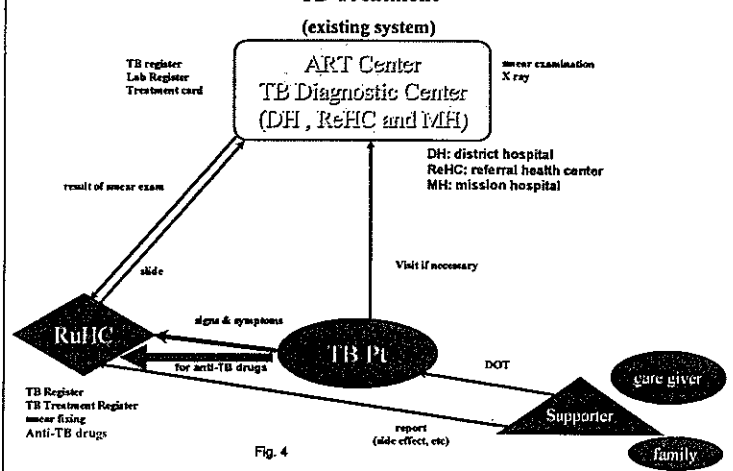


Fig. 4

### ART at the ART center

(before the introduction of mobile ART clinic)

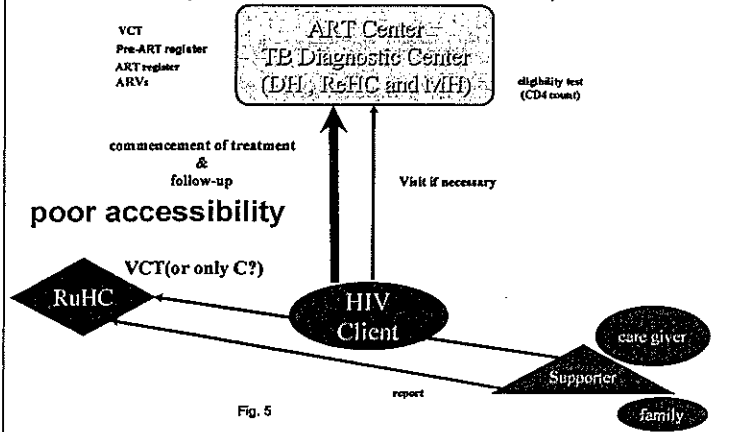


Fig. 5

### TB/HIV linkage

(before the introduction of mobile ART clinic)

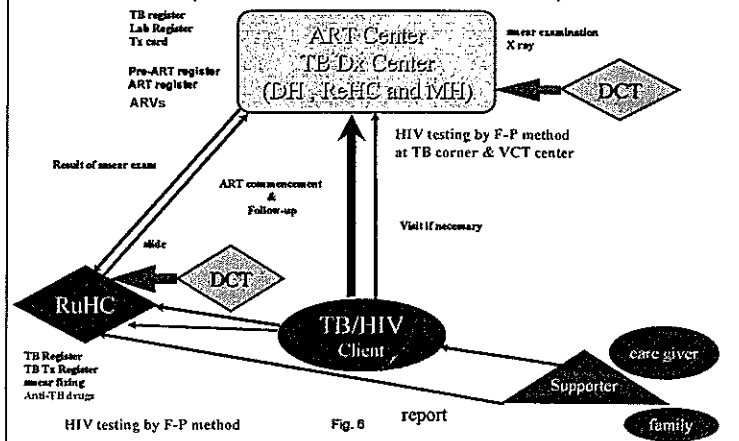
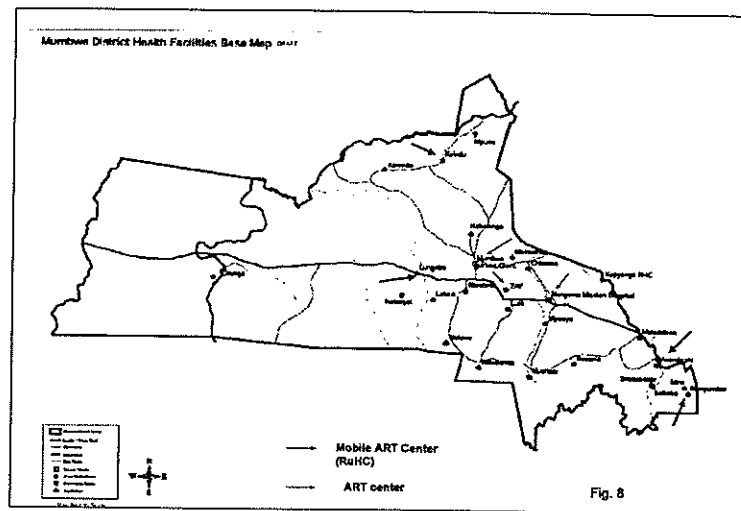
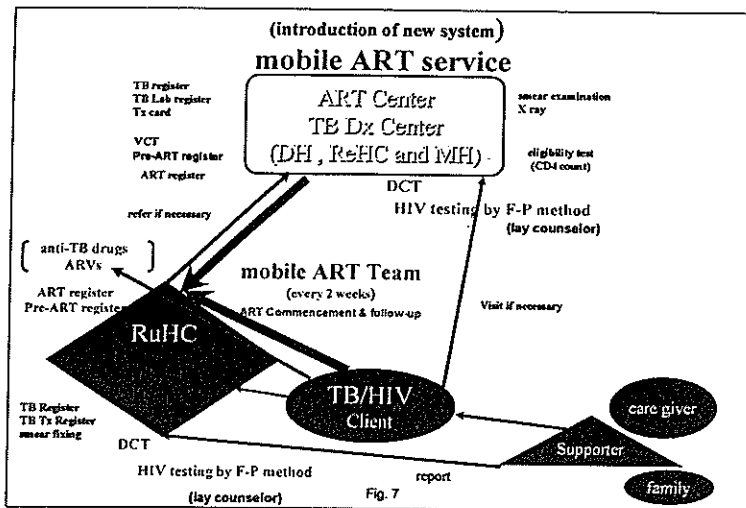


Fig. 6



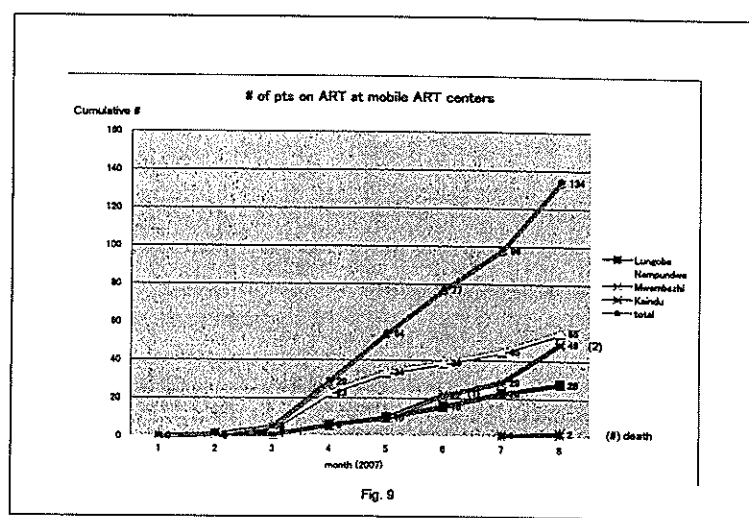


# of patients on ART at mobile ART clinics (Mumbwa)

2007 Table 3

month	1	2	3	4	5	6	7	8
<b>Lungobe</b>								
# of pts	0	11	0	5	0	3	7	3
TI	0	0	0	0	0	0	0	0
cumulative	0	11	11	16	16	19	26	29
start of mobile ART clinic		○						
start of F-P method					○			
start of DCT								○
# of pts	0	0	0	11	11	3	0	16
TI	0	0	0	0	0	0	0	0
cumulative	0	0	0	11	22	25	25	41
start of mobile ART clinic		○						
start of F-P method								
start of DCT			○					
# of pts	0	0	0	0	10	12	7	20
TI	0	0	0	0	0	0	0	0
cumulative	0	0	0	0	10	22	29	49
start of mobile ART clinic								
start of F-P method								
start of DCT								○
# of pts	0	0	0	0	1	1	1	3
TI	0	0	0	0	0	0	0	0
cumulative	0	0	0	0	1	2	3	6
start of mobile ART clinic								
start of F-P method								
start of DCT								○
# of pts	0	0	0	0	0	0	0	0
TI	0	0	0	0	0	0	0	0
cumulative	0	0	0	0	0	0	0	0
start of mobile ART clinic								
start of F-P method								
start of DCT								○
<b>Total # of pts</b>	<b>0</b>	<b>11</b>	<b>11</b>	<b>26</b>	<b>36</b>	<b>42</b>	<b>49</b>	<b>72</b>

(#) : death



TB/HIV at 4 mobile ART centers in Mumbwa (Jan. ~ Aug. 2007)

Table 4

	TB				HIV in TB pts							# of TB pts on ART
	# of TB pts	type	SS		HIV test	Results	testing rate (%)	date unclear	by F-P	done in its own RuHC		
Lungobe	17	P EP ?	14 3 0	+ - ND	4 0 13	+ - ND	2 5 10	41	2	?	1	1
Nampundwe	23	P EP ?	12 9 2	+ - ND	3 7 13	+ - ND	8 11 4	83	4	12	12	4 (2 in Lusaka)
Mwembeshi	10	P EP ?	8 4 0	+ - ND	6 0 4	+ - ND	4 0 2	70	1	6	6	2 (1 in Lusaka)
Kaindu	8	P EP ?	7 1 0	+ - ND	4 1 2	+ - ND	3 0 5	38	0	3	3	1
<b>Total</b>			<b>58</b>				<b>av. 62</b>			<b>Total</b>	<b>38</b>	<b>8 (14%)</b>

\* TB/HIV clients: 3 out of 8 clients started ART first, then started TB Tx.  
 (Lungobe 1, Nampundwe 1, Mwembeshi 1)

\*\* (# of HIV+ among TB pts) / (# of TB pts who took HIV testing) = 47%

**discussion**

1. HIV testing by F-P method

Low testing rate at both Lungobe & Kaindu RuHC

- late introduction of DCT
- more rural setting in both Lungobe & Kaindu compared to both Nampundwe and Mwembeshi ← close to capital Lusaka
- existence of relatively strong stigma in the community  
 → IEC, community participation, usage of PLWHA support group

## discussion (cont'd)

## 2. ART clients among TB pts (as of the end of Aug. 2007)

Table 5

RuHC	HIV+ clients (among TB pts)	# of Clients on ART	# of clients waiting for CD4 values	# of clients not eligible at this point of time	remarks
Lungobe	2 (17)	1	0	1	
Nampundwe	8 (23)	4	2	0	2 clients start ART in Sep.
Mwembezi	4 (10)	2	1	1	
Kaindu	3 (8)	1	0	0	1 died before tx 1 client start ART in Sep
<b>total</b>	<b>17 (58)</b>	<b>8 (47%)</b>	<b>3</b>	<b>2</b>	<b>4</b>

\* (# of ART pts) / (# of TB pts) = 14%

(# of ART pts) / (# of HIV + among TB pts) = 47%

\*\* CD4 values could be informed to patients 2 weeks after the previous mobile ART day.

\*\*\* Initiation of ART (with CD4)

<200 ; treat Irrespective of clinical stage

200 - 350 ; treat if in Stage 3 or Pregnancy

>350 ; treat if there is more than one Stage 3 sign or repeated Stage 3 problem

## Impact of introduction of mobile ART services

Voices from the TB/HIV patients cared at mobile ART centers (RuHCs)

- **Lungobe RuHC**

(Pt A); Until now, I had to go to the District Hospital for receiving ARVs, but I can get them together with anti-TB drugs in here since the mobile ART clinic has started. This benefits me greatly because this service has reduced my expenditure a lot and time as well.

- **Nampundwe RuHC**

(Pt B); I had to go all the way to Lusaka to get ARVs before, but since this service started, I don't need to go there any more. This is very convenient and I really appreciate it.

- **Mwembezi RuHC**

(Pt C); I hope this service continues. There is a very strong support group around me and I think I can stick to the treatment with their help. This service has been making me much healthier than before, and I can even work now. Thank you very much for DHMT's support for us.

- **Kaindu RuHC**

(Pt D); Without this service, I couldn't have recovered like this. I am very poor, and I cannot afford to go to the District Hospital from my place.

## Way Forward

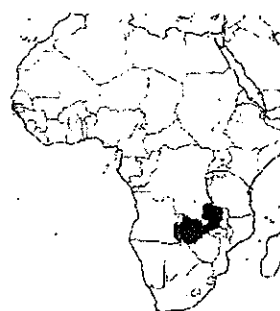
- **To improve the present mobile ART centers**  
scheduling, recording/reporting, technical transfer from the mobile ART team to RuHC staff, more involvement of community people, etc.
- **To expand mobile ART centers to other RuHCs in the district**  
feasible plan, proper trainings to staff, etc.
- **To apply this model to other districts or provinces in Zambia**



## Assessment of improvement of TB/HIV care service in districts where mobile Anti-Retroviral Treatment (ART) service has been introduced

- C. Dube<sup>1</sup>, C. Msiska<sup>1</sup>, I. Nozaki<sup>2</sup>, T. Hayakawa<sup>2</sup>, N. Yamada<sup>3</sup>, J. Sampungwe<sup>1</sup>
- <sup>1</sup>Ministry of Health, Lusaka, Zambia
- <sup>2</sup>JICA expert, Lusaka, Zambia
- <sup>3</sup>Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association, Tokyo, Japan

## General information of Zambia



Area: 752,610 (km<sup>2</sup>)  
 Population: 10.5 million (2004, WB), population growth rate 1.4% (2004, WB)  
 Capital: Lusaka (pop.: 1.7 million)  
 Tribes: 73 (Tonga, Nyanja, Bemba, Lozi, etc.)  
 Languages: English, Bemba, Nyanja, Tonga, Lozi, etc.  
 Religion: Christians (>80%), Islam, Hindu, etc.

Fig. 1

## HIV prevalence in Zambia (2007)

National Prevalence 14.3% (15 – 49)  
 Male 12.3%, Female 16.1%  
 Urban 19.7%, Rural 10.3%  
 PLHIV: 1.2 million

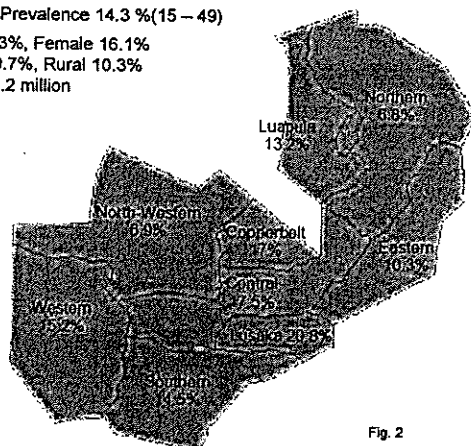


Fig. 2

## Scale up of ART service in Zambia

### <Difficulties & constraints in rural areas in Zambia>

- absolute shortage of medical staff
- poor access to ART centers in the rural areas
- (scattered settlements in the rural areas)
- poor transportation system
- poverty
- existence of relatively strong stigma
- lack of education

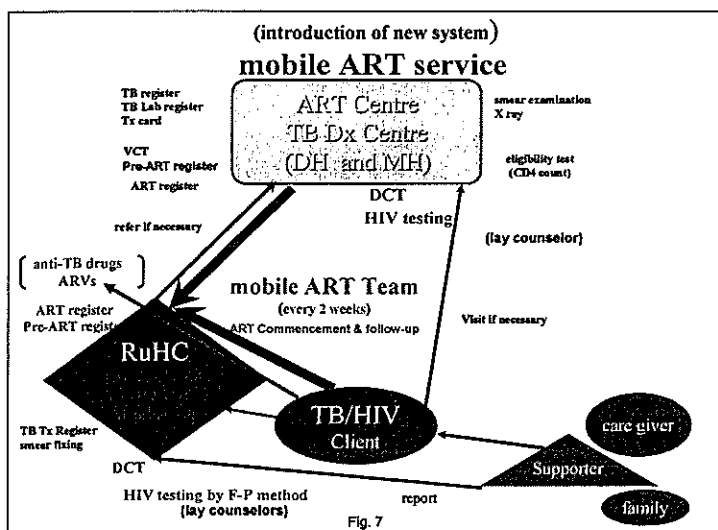
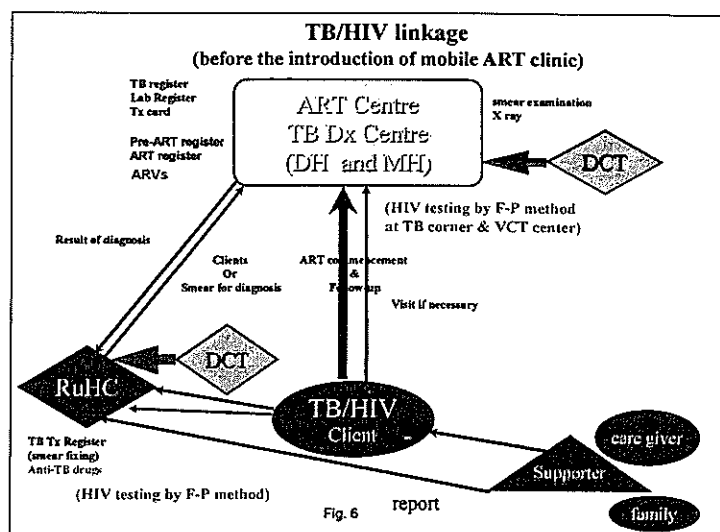
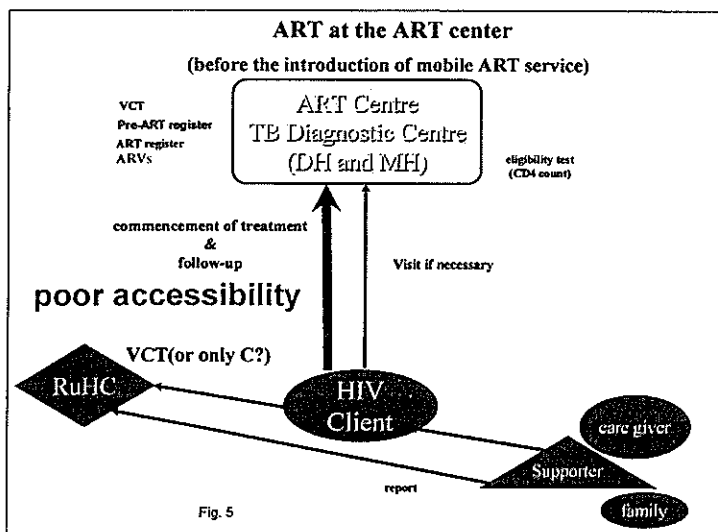
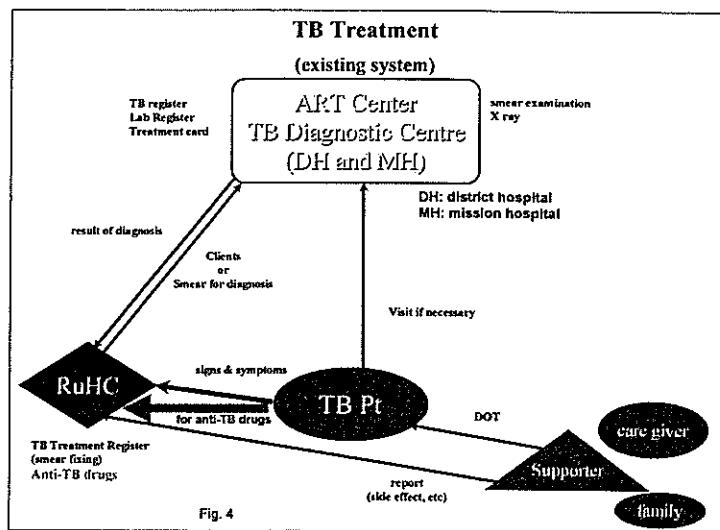
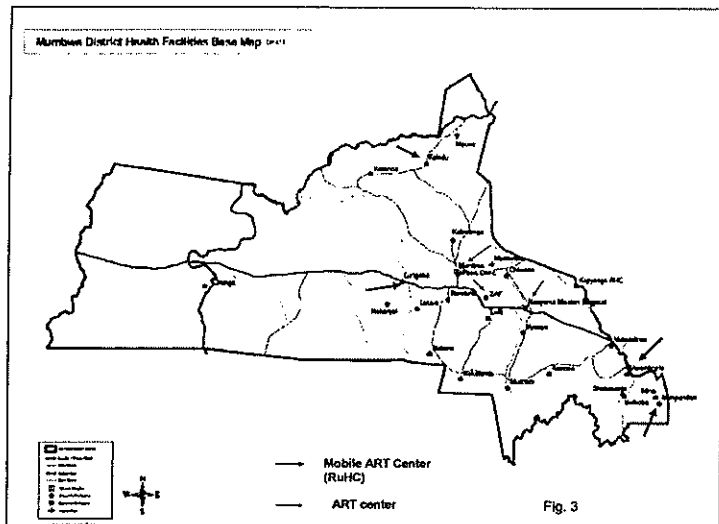
## Introduction of mobile ART service

1. Rural Health Centre (RuHC) cannot be accredited as an ART centre on its own according to the "Accreditation Guidelines" published in May, 2006. Further, RuHC cannot provide ART service on its own.
2. By introducing ART service with the help of the following mobile ART team to some RuHCs which have many ART clients in their catchment areas, the accessibility of the community to ART could be greatly improved. Such RuHCs have been selected and are called "mobile ART centres".
3. "Mobile ART Team" from the ART centre (District Hospital), which consists of Doctor/Clinical Officer, Pharmacist, Lab staff, Counselor and other staff depending on the necessity of the RuHCs, visits respective RuHC (mobile ART centre) regularly (every two weeks) to help its staff to provide ART service (mobile ART service) to the community people at RuHC (mobile ART centre).

Both Finger Pricking (F-P) method for HIV testing and Diagnostic Counseling and Testing (DCT) have been introduced at those RuHCs (mobile ART centres).

## Health facilities in Mumbwa (as of June, 2008)

- 2 hospitals: (ART Centres & TB diagnostic centres)
  - Mumbwa District Hospital,
  - Nangoma Mission Hospital
- 4 mobile ART sites: Lungobe RuHC, Nampundwe RuHC, Mwembeshi RuHC, Kaindu RuHC
- 23 non-mobile ART sites:
  - 18 RuHCs
  - 4 HPs
  - Urban Clinic



**Trainings to staff at mobile ART centres supported by JICA**

Table 1

	ART/OIs management		Counseling		Diagnostic Counseling & Testing (DCT)		Finger Pricking		Adherence Counseling	
Lungobe	CO	1	EHT	1	CO	1	EHT	1	COE	2
			CHW	1			CHW	1		
Nampundwe	Ns	1	Ns	1	Ns	2	Ns	1	COE	2
			CHW	1			CHW	1		
Mwenbezi	CO	1	Ns	1	Ns	1	COE	1	COE	1
Kaidu	CO	1	CHW	2	CO	1	CHW	2	COE	1

CHW: community health worker

## Introduction of mobile ART service

Lungobe RuHC: Feb. 9, 2007  
 Nampundwe RuHC: Feb. 22, 2007  
 Mwembezi RuHC: May 23, 2007  
 Kaindu RuHC: Jul. 26, 2007

New TB register book with HIV information has been introduced in July, 2006 in Mumbwa district.

So we define two periods in terms of ART service:

**Before** (the introduction of mobile ART service):  
 July 1, 2006 ~ Feb. 8, 2007

**After** (the introduction of mobile ART service):  
 Feb. 9, 2007 ~ Jun. 30, 2008

Diagnosis of TB & HIV  
at mobile ART centres & non-mobile ART centres

Table 2

		TB				HIV					
		smear making		DCT		F-P					
		Yes	send smear to	No	send clients to	Yes	No	Yes	Dx done on the spot	No	For Dx, send clients to
mobile	Lungobe	✓	DH			✓		✓			
	Nampundwe	✓	MH			✓		✓			
	Kaindu	✓	DH			✓		✓			
	Mwembezi			✓	Lusaka	✓		✓			
non-mobile			✓	DH/MH/Lusaka	✓	✓			✓	DH/MH/Lusaka	

DH: District Hospital  
 MH: Nangoma Mission Hospital  
 Lusaka: Capital of Zambia, 80 km from Mwembezi RuHC

## Summary

## Mobile ART centres:

## ◆ Lungobe, Nampundwe and Kaindu RuHC:

1. sputum smear slide fixing
2. send slides to DH/MH for diagnosis
3. DCT
4. F-P method

## ◆ Mwembezi RuHC:

1. no sputum smear slide fixing
2. refer clients to Lusaka for diagnosis
3. DCT
4. F-P method

## Non-mobile ART centres:

1. no sputum smear slide fixing except a few RuHC
2. refer clients to DH/MH/Lusaka for diagnosis
3. no DCT except a few RuHC
4. no F-P method except a few RuHC  
 send clients to DH/MH/Lusaka for HIV diagnosis

## Comparison of TB/HIV clients among 4 mobile ART centres

Table 3

	TB		HIV in TB clients				
	# of TB clients		HIV test Results		# of TB clients on ART		
	Before	After	Before	After	Before	After	
Lungobe RuHC	14	50	+	4	21	1	9
			-	2	25		
			ND	8	1		
			?		3		
Nampundwe RuHC	32	65	+	9	35	6	16
			-	3	24		
			ND	9	5		
			?	11	1		
Mwembezi RuHC	13	23	+	6	12	6	6
			-	1	9		
			ND	4			
			?	2	2		
Kaindu RuHC	5	8	+		6	0	4
			-				
			ND	1			
			?	4	2		
Total	64	146	+	19	74	13	35
			-	12	58		

## HIV positive TB clients at 4 mobile ART centres

Table 4

	% of clients found HIV + among TB clients		% of HIV + among TB by F-P	
	Before	After	Before	After
Lungobe	28.6 (4/14)	42.0 (21/50)	25.0 (1/4)	76.2 (16/21)
Nampundwe	28.1 (9/32)	53.8 (35/65)	44.4 (4/9)	40.0 (14/35)*
Mwembezi	46.2 (6/13)	52.2 (12/23)	33.3 (2/6)	83.3 (10/12)*
Kaindu	0.0 (0/5)	75.0 (6/8)	0.0 (0)	83.3 (5/6)
total	29.7 (19/64)	50.7 (74/146)	36.8 (7/19)	60.8(45/74)

\*For some HIV positive TB clients, especially for some Transfer in clients from outside of the district, it is not clear whether or not the HIV testing has been done by F-P method due to the lack of information. There are many Transfer in clients from Lusaka at both Nampundwe and Mwembezi RuHC. Therefore, these ratios could be higher than those shown.

## Comparison of TB/HIV indicators between mobile ART centres and non-mobile ART centres in Mumbwa District (2)

Table 5

	4 mobile ART sites		non-mobile ART sites	
	Before	After	Before	After
$\alpha$	29.7 (19/64)	50.7 (74/146)	28.0 (30/107)	53.4 (93/174)
$\beta$	20.3 (13/64)	24.0 (35/146)	19.6 (21/107)	27.0 (47/174)
$\gamma$	68.4 (13/19)	47.3 (35/74)	70.0 (21/30)	50.5 (47/93)

$\alpha$ : % of TB clients found HIV positive among TB clients

$\beta$ : (number of ART clients)/(number of TB clients) x 100

$\gamma$ : (number of ART clients)/(number of HIV positive TB clients) x 100

## TB/HIV data at Mumbwa DH

Table 6

	DH			
	# of TB clients	# of TB clients tested for HIV by either drawing blood or F-P	# of clients found HIV + among TB clients	$\alpha$
Before	204	56	43	21.1
After	571	391	324	56.7

## Results

- Both mobile ART centres and non-mobile ART centres show similar changes from Before to After in all three indicators;  $\alpha$ ,  $\beta$  and  $\gamma$ .
- Average HIV testing rate among TB clients increased from 48.4 % (31/64) to 90.4 % (132/146) in mobile ART centres which has been achieved by the introduction of both DCT and F-P method.
- HIV testing rate among TB clients at Mumbwa DH has also increased from 27.5% (56/204) to 68.5 % (391/571) by either drawing venous blood or F-P method. (The same thing could be said to Nangoma MH, although detailed information is not available for the time being.) The introduction of DCT has contributed greatly to this result.
- The achievement of non-mobile ART centres is thought to be due to the improvement of TB/HIV care service in DH/MH.
- $\beta$  has increased both in mobile sites and non-mobile sites in After.
- The indicator  $\gamma$  has reduced after the introduction of mobile ART service. This is because we have been finding more HIV positive clients among TB clients who are not yet eligible for ART.
- The HIV positive rate among TB clients in "After" at mobile ART centres shows 60.8 % which agrees with the national data: 40 ~ 70%.

## Discussion

- TB/HIV care service has been improved in the district as a whole in "After".
- The mobile ART centres have improved TB/HIV care service by the introduction of both DCT and F-P method with the collaboration with mobile ART service. TB/HIV clients have been benefiting from the introduction of mobile ART service.
- Obviously we can see that it is not beneficial for clients to be referred for TB diagnosis to far place such as Lusaka. The number of TB clients at Mwembezhi RuHC which has the biggest number of ART clients among 4 mobile ART centres is relatively small compared to that at other mobile ART centres such as Lungobe or Nampundwe RuHC where sputum smear slides are fixed which are sent to DH/MH for TB diagnosis.
- Considering the increasing burden of DH/MH, ART combined with TB service should be provided at RuHC level. Therefore, the scale-up of ART service by mobile ART to RuHCs is an effective and efficient way in rural areas such as Mumbwa district where clients live scattered in a vast land.

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## ART expansion to rural health centre level by mobile ART service in Mumbwa district, Zambia

Christopher Dube<sup>1)</sup>, Charles Msiska<sup>2)</sup>, Ikuma Nozaki<sup>3)</sup>, Tadao Hayakawa<sup>3)</sup>, Norio Yamada<sup>3)</sup>, James B. Simpungwe<sup>4)</sup>

1) District Director of Health, Mumbwa. 2) District Director of Health, Chongwe. 3) JICA Expert. 4) Director, Clinical Care and Diagnostics Services, MoH-HQ

Dakar, Sénégal  
du 3 au 7 Décembre 2008

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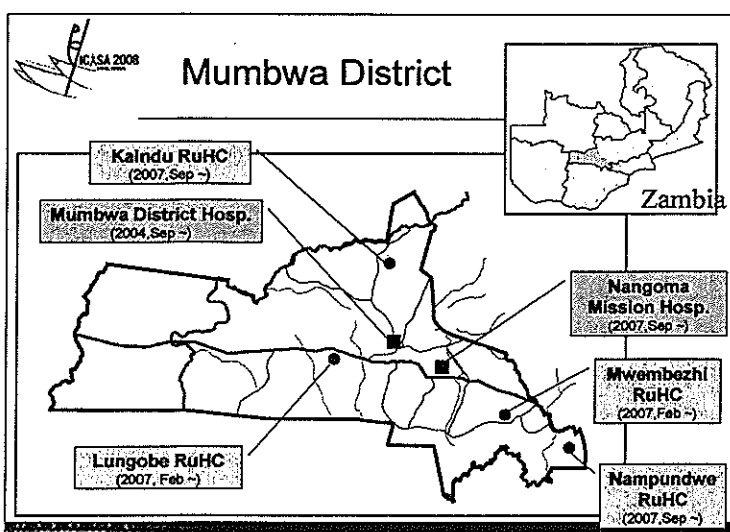
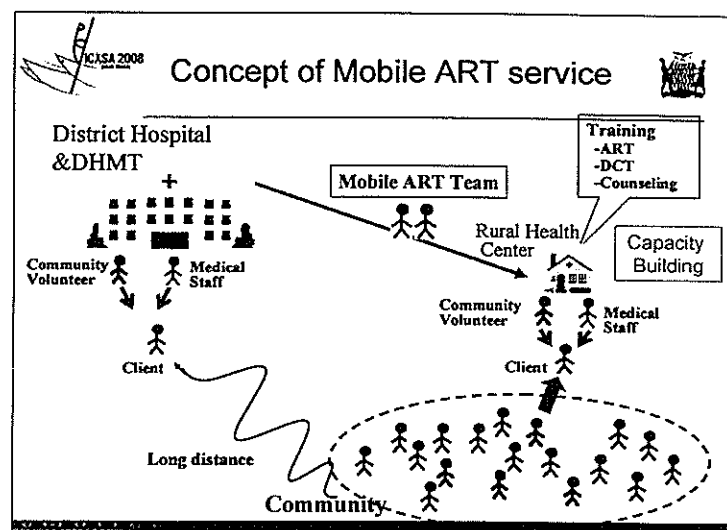
## Introduction (1)

- Zambia is one of the HIV high burden countries. (Adult HIV prevalence is 14.3%)
- Mumbwa is a rural district with the area of 23000 km<sup>2</sup> and the population of 167,000, where ART services were provided only at Mumbwa District Hospital as of July, 2006.
- The number of people in need of ART in the district was estimated approx. 5,000 ~ 7,500 whereas the accumulated number of clients receiving ART was less than 450 in April, 2006.

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## Introduction (2)

- "JICA Integrated HIV/AIDS Care Implementation Project" introduced Mobile ART services through the human resource and technical support by district hospitals, and the community involvement to four rural health centres in Mumbwa district in the first quarter of 2007.
- The purpose of this study was to evaluate outcomes and the feasibility of the Mobile ART services in rural Mumbwa.



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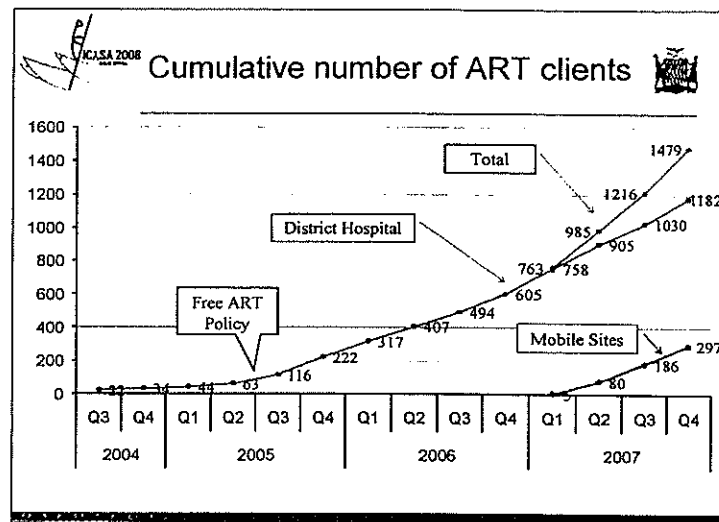
## ART Service in Mumbwa

	Start on	Date	Human Resources
Mumbwa District Hosp.	Sept/2004	Monday ~ Friday	—
Nangoma Mission Hosp.	July/2006	Monday & Friday	—
Lungobe RuHC	9/ Feb/2007	Every Two week Friday	C.O. 1 Ns. 1 E.H.T 1
Nampundwe RuHC	22/Feb/2007	Every Two week Wednesday	C.O. 1 Ns. 3 E.H.T 1
Mwembezi RuHC	23/May/2007	Every Two week Wednesday	C.O. 1 Ns. 3 E.H.T 1
Kaindu RuHC	26/July/2007	Every Two week Thursday	C.O. 1 E.H.T 1

C.O. :Clinical Officer, Ns. :Nurse, E.H.T. : Environmental Health Technician

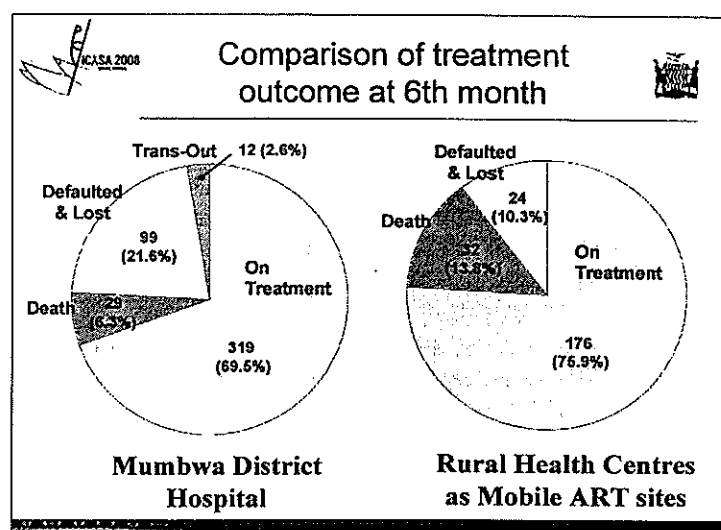
## Method

- ART data in 2007 was collected from the "Monthly ART Register" at each ART rural health centre.
- Outcomes of Mobile ART were categorized in "On Treatment", "Default or Lost", "Death" and "Trans-out", and evaluated at the 6th month after starting the treatment by comparing with those in Mumbwa District Hospital.
- Factors associated with "Default or Lost" at Mobile ART Sites were also analyzed.
- Data was processed and analyzed with SPSS 15.0 for Windows



### Characteristics of ART clients

Characteristic	District Hospital (n=388)	Rural Health Centres (n=212)	P-value
<b>Age (years)</b>			0.231
18-38	277 (60.3%)	129 (55.6%)	
≥39	182 (39.7%)	103 (44.4%)	
<b>Gender</b>			0.188
M	190 (41.4%)	84 (36.2%)	
F	269 (58.6%)	148 (63.8%)	
<b>Clinical Staging</b>			0.017
I	8 (1.7%)	7 (3.0%)	
II	58 (12.6%)	35 (15.1%)	
III	347 (75.6%)	136 (58.6%)	
IV	39 (8.5%)	7 (3.0%)	
Unknown	7 (1.5%)	47 (20.3%)	
<b>Functional Status</b>			<0.001
Working	183 (39.5%)	143 (61.6%)	
Ambulant	234 (51.0%)	82 (35.3%)	
Bed lld	42 (9.2%)	5 (2.2%)	
Unknown	0 (0.0%)	2 (0.9%)	
<b>Regimen</b>			<0.001
NEV+3TC+4dUAZT	377 (82.1%)	149 (64.2%)	
EFV+3TC+4dUAZT	82 (17.5%)	83 (35.8%)	
Others	0 (0.0%)	0 (0.0%)	



### Factors associated with Default or Lost at Mobile ART Sites

Characteristic	Default or Lost (n=24)	On treatment (n=176)	Odds's Ratio (95% CI)	P-value
<b>Age (years)</b>			1	0.042
18-38	18 (16.4%)	92 (83.6%)		
≥39	6 (6.7%)	84 (93.3%)	0.365 (0.138-0.963)	
<b>Gender</b>			1	0.053
M	13 (18.1%)	59 (81.9%)		
F	11 (8.6%)	117 (91.4%)	0.427 (0.180-1.010)	
<b>Clinical Staging</b>			1	0.680
I	1 (14.3%)	6 (83.7%)		
II	3 (9.1%)	30 (90.9%)	0.600 (0.053-6.903)	
III	14 (12.7%)	96 (87.3%)	0.875 (0.098-7.813)	0.905
IV	1 (16.7%)	5 (83.3%)	1.200 (0.059-24.390)	0.906
<b>Functional Status</b>			1	0.214
Working	14 (10.3%)	122 (89.7%)		
Ambulant	10 (16.7%)	50 (83.3%)	1.742 (0.726-4.184)	0.214
Bed lld	0 (0%)	3 (100%)	—	0.999
<b>Regimen</b>			1	0.653
NEV+3TC+4dUAZT	14 (11.2%)	111 (88.8%)		
EFV+3TC+4dUAZT	10 (13.3%)	65 (86.7%)	1.220 (0.512-2.907)	

## Conclusion

- The Mobile ART services obviously improved the accessibility to ART services, especially for the ART clients in better functional status.
- In addition, the Mobile ART services are likely to reduce "default or lost rate" cases. It might be because the community were involved and more supportive to ART clients in the rural areas.





## Lessons learned and next steps



- For the continuity of ART, ART should be provided as close as possible to the places where clients live.
- Work burden of RuHC's staff should take into consideration as the number of ART clients is increasing.
- Further investigation is required to evaluate long term outcomes of Mobile ART services such as clinical status, adherence and quality of life.



## Thank You







Research on how ART clients can remind themselves of the time to take ARVs in Mumbwa district,  
Central province, Zambia

Charles Msiska<sup>1)</sup>, Christopher Dube<sup>2)</sup>, Ikuma Nozaki<sup>3)</sup>, Tadao Hayakawa<sup>3)</sup>, Norio Yamada<sup>3)</sup>, James B. Simpungwe<sup>4)</sup>

1) District Director of Health, Chongwe, 2) District Director of Health, Mumbwa, 3) JICA Expert,  
4) Director, Clinical Care and Diagnostics Services, MoH-HQ



Table 2. Bivariate logistic regression analyses of predictors to the low adherence

	Once or more (n=53)	Never Missed (n=458)	Odd's Ratio (95%CI)	p value
<b>Age</b>				
More than 38 years old	13 (6.0%)	205 (94.0%)	0.401	0.005
38 years old and less	40 (13.7%)	253 (86.3%)	(0.209-0.770)	
<b>Gender</b>				
Male	15 (7.4%)	188 (92.6%)	0.554	0.061
Female	37 (12.6%)	256 (87.4%)	(0.295-1.035)	
<b>Marital Status</b>				
Single/Divorce/Widowed	30 (12.3%)	214 (87.7%)	0.691	0.211
Married/Remarried	22 (8.8%)	227 (91.2%)	(0.387-1.236)	
<b>Duration of ART</b>				
More than 12 Month	30 (9.8%)	276 (90.2%)	1.163	0.607
12 Month and less	23 (11.2%)	182 (88.8%)	(0.655-2.065)	
<b>Way of reminding the time</b>				
Watch	24 (9.8%)	220 (90.2%)	Reference	
Clock	8 (10.5%)	68 (89.5%)	1.078	0.861
Mobile Phone	2 (3.5%)	55 (96.5%)	(0.463-2.511)	
Radio/Television	10 (14.1%)	61 (85.9%)	1.503	0.312
The position of Sun	8 (16.3%)	41 (83.7%)	(0.062-3.312)	
<b>Adherence support provider</b>				
Nothing	15 (15.2%)	84 (84.8%)	Reference	
Your ART Buddy	12 (14.3%)	72 (85.7%)	0.933	0.869
Family's support	19 (7.3%)	241 (92.7%)	(0.410-2.123)	
Others	7 (12.1%)	51 (87.9%)	0.441	0.026
			(0.215-0.908)	
			0.653	0.383
			(0.251-1.700)	

### Objective;

In recent years, ART service has been expanded nationwide in Zambia and ART has increasingly become accessible to PLHIV in rural area. High adherence is necessary for the successful outcome of ART and ARVs should be taken at specific time of the day. However, the anecdotal evidence suggests that not many rural people have watches to remind time. This research investigated how ART clients remind themselves of the scheduled time for ARV-taking in rural-specific context in Zambia and its influence on the ART adherence.

### Methodology;

A survey with face-to-face interview was conducted in Mumbwa district which located 150km west of capital city by using a semi-structured questionnaire with written informed consent. All ART clients who came for ART service to 4 rural health centres and Mumbwa District Hospital ART Centre had been approached for the period between 25th March and 25th April. The questionnaire includes the issues such as means of reminding time to take ARVs at scheduled time, and their current status of adherence. Data analysis carried by SPSS 11.0 for Windows.

### Results;

Valid answers were obtained from 548 research participants. Characteristics of Study Participants are shown in Table 1.

Table.1 Characteristics of Study Participants

Average Age (years)	38.3 (9.2SD)
<b>Gender</b>	
Male	206 (39.8%)
Female	297 (57.3%)
Average treatment period (Months)	12.5 (10.3 SD)
<b>Marital status</b>	
Single/Divorce/Widowed	248 (47.9%)
Married/Remarried	251 (48.5%)
<b>Occupation</b>	
Government staff	18 (3.5%)
Company worker	16 (3.1%)
Own job	68 (13.1%)
Farmer	266 (51.4%)
House wife	53 (10.2%)
Others	66 (12.7%)
<b>What do you own (Multiple Answer)</b>	
Watch	262 (50.6%)
Mobile Phone	98 (18.9%)
Radio	254 (49.0%)
Television	109 (21.0%)
<b>How do you remind themselves</b>	
Watch	245 (47.3%)
Clock	79 (15.3%)
Mobile Phone	58 (11.2%)
Radio	65 (12.5%)
Television	7 (1.4%)
The position of Sun	49 (9.5%)
Others	13 (2.5%)
<b>Adherence support</b>	
Nothing	99 (19.1%)
Your ART Buddy	84 (16.2%)
Family's support	264 (51.0%)
Friend's support	9 (1.7%)
Support group	26 (5.0%)
Health Volunteer	1 (0.2%)
Medical Staff	24 (4.6%)
Others	9 (1.7%)
<b>Recent Adherence</b>	
(Past 4 days missed dose by self-report)	
Never Missed	458 (88.4%)
Once or more	53 (10.2%)

Although 49% of participants do not have a watch, the most common way of reminding the time to take ARVs is watch. And 9.5% of participants rely on the position of the sun to remind themselves of the time to take ARVs.

MoH of Zambia introduced ART buddy system for adherence, however only 16% of participants answered that they received adherence support from ART buddy.

In terms of past 4 days missed dose by self-report as recent adherence, 10% of participants missed once or more and this suggests that adherence of those people were below 95%.

In a bivariate analysis, the analysis shows that the age more than 38 y.o. ( $p = 0.005$ ) and support from family ( $p=0.026$ ) were significantly related to the good adherence to ARVs. (Table2)

Table.3 Multivariate logistic regression analyses of predictors to the low adherence

	Odd's Ratio (95%CI)	p value
<b>Age</b>		
More than 38 years old	0.331 (0.162-0.673)	0.002
38 years old and less		
<b>Adherence support provider</b>		
Nothing	Reference	
Your ART Buddy	0.872 (0.367-2.041)	0.757
Family's support	0.361 (0.164-0.792)	0.011
Others	0.616 (0.226-1.679)	0.343
<b>Way of reminding the time</b>		
Watch	Reference	
Clock	1.326 (0.525-3.353)	0.551
Mobile Phone	0.416 (0.093-1.858)	0.251
Radio/Television	1.499 (0.661-3.398)	0.332
The position of Sun	2.396 (0.958-5.990)	0.062

※Backward-stepwise valuable selection with forcing valuable "way of reminding time" to be included in the model.

In a multivariate logistic regression analysis, the age of respondents ( $p=0.002$ ) and support from family ( $p=0.011$ ) are statistically significant (Table 3). "The position of the sun" seemed the strongest predictor to low adherence (odd's ratio; 2.396, 95%CI; 0.958-5.990), however it was not statistically significant ( $p=0.062$ ).

### Conclusion;

- Less than half of the ART clients use a watch and about 10% of the clients rely on the position of the sun in our study sites. This indicates that the ART clients in the rural areas seem to face challenges in taking ARVs on time.
- No significant associations were observed between any means reminding of the time and the recent adherence.
- As expanding ART to rural areas, the position of the sun, which must be practical to take ARVs every 12 hours throughout the year in the low latitude countries such as Zambia, should be carefully recommended to those not having a watch although it was not a significant predictor to low adherence.

### Acknowledgement

This study was conducted as a operational research as a part of JICA "Integrated HIV AIDS care service implementation project" and financially supported by "International Medical Cooperation Study Budget". Data collections were carried with assistance of AMDA Zambia.





## Concept of the Project

Integrated HIV/AIDS Care Implementation Project at District Level  
Workshop  
"Effective Community Outreach in HIV/AIDS Using Mobile ART Service in  
Chongwe and Mumbwa District"

Dr James Simpungwe  
Director of Directorate of Clinical Care and Diagnostic Services, MoH

17<sup>th</sup>, March 2009

## Background

- The Government is committed to expand HIV care services to all 72 districts and as close to the household as possible in the Fifth National Development Plan (2006-11).
- National responses to HIV/AIDS led by the National AIDS Council (NAC) and the Ministry of Health (MoH) have been working on achieving this goal.
- However, Zambia has been facing the tremendous challenges related to the human resources for health.

## Background

- "Integrated HIV/AIDS Care Implementation Project at District Level" in close partnership with MoH was commenced in April 2006 as a three years' project, in order to support the national initiatives of expanding ART services.
- The Project aims at improving accessibility to ART through strengthening capacities of the District Health Management Team (DHMT) in the provision of ART closer to the communities.

## The Project (PDM ver. 2)

Project Period: April 2006- March 2009 (3years)

### Overall Goal:

Interventions to improve the HIV and AIDS services for PLWHAs demonstrated at target districts are introduced in other districts.

### Project Purpose:

**HIV and AIDS care services are improved and accessible at target districts**

### Outputs:

1. Access to HIV counseling and testing is improved
2. Quality HIV care services are strengthened and scaled-up
3. DHMT's management capacities in HIV care services are enhanced
4. Lessons learned by the Project are incorporated into national guideline on mobile ART services

### 1. Member of the Project - Zambian side

Position	Job Title	Name
Project Director	Permanent Secretary, Ministry of Health	Dr. Simon Miti
Deputy Project Director	Director, Directorate of Planning and Development, Ministry of Health	Mr. Davis Chimfwemb
Project Manager	Director, Directorate of Clinical Care and Diagnostic Services, Ministry of Health	Dr. James Simpungwe
Others	ARV Coordinator, Ministry of Health	Dr. Albert Mwangi
	TB Specialist, Ministry of Health	Dr. Nathan Kapata
	Laboratory Specialist, Ministry of Health	Ms. Fales Mwamba
	PMTCT Specialist, Ministry of Health	Dr. Max Bweupe
	Chongwe District Director of Health	Dr. Charles Masisa
	Mumbwa District Director of Health	Dr. Christopher Dube
	Director, Provincial Health Office, Lusaka	Dr. Takson Lambert
Director, Provincial Health Office, Central	Dr. Dickson Suya	
Paediatric ART Program Officer	Dr Mutinta Nalubamba Phiri	

### 2. Member of the Project - Japanese side

#### (1) Long-term experts

Job Title	Name	Period
Project Coordinator/Community Participation	Katsunori SHIRAI (Mr)	20 Mar '06 - 19 Mar '08
Infectious Diseases Control/Health Planning	Tadao HAYAKAWA (Dr)	13 Jun '06 - 13 Apr '09
HIV/AIDS Care	Ikuma NOZAKI (Dr)	19 Jan '07 - 02 Apr '09
Project Coordinator/Monitoring	Kyo YOSHIDA (Mr)	03 Mar '08 - 15 Apr '09

#### (2) Short-term experts

Job Title	Name	Period
HIV/AIDS Care	Kazuhiro KAKIMOTO (Dr)	29 May -14 Jul '06
Operational Research	Norio YAMADA (Dr)	18 Nov -02 Dec '06
TB/HIV Control	Ikushi ONOZAKI (Dr)	18 Feb -01 Mar '07
HIV/AIDS Management	Yutaka ISHIDA (Dr)	03 - 31 Mar '07
Information Education Communication	Kazuaki SUMIDA (Mr)	24 Sep - 23 Nov '07
PMTCT	Takanori Hirayama (Dr)	28 Feb -25 Mar '08
HIV/AIDS Care	Hideki MIYAMOTO (Dr)	06 Jul - 02 Aug '08
Operational Research	Norio YAMADA (Dr)	01 - 11 Oct '08

## Progress of Mobile ART service

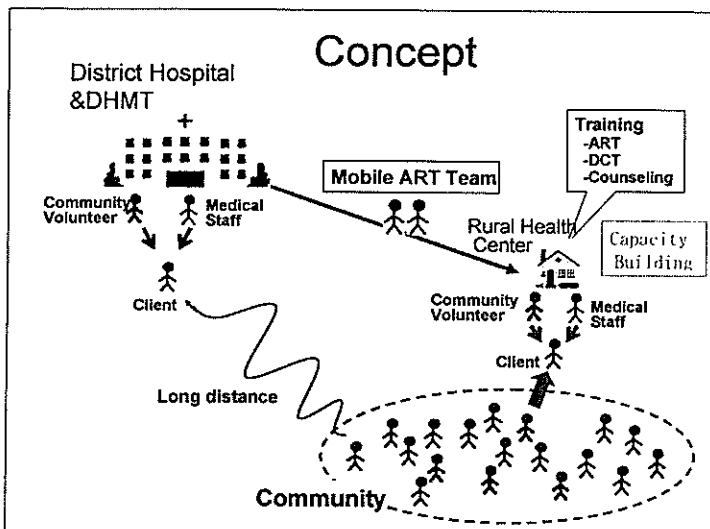
- In both Chongwe and Mumbwa District, respective DHMT started mobile ART services at rural health centres (RuHCs) in the first Quarter of 2007, accelerating the expansion of ART services especially in rural area.
- Mobile ART services offered in both districts enable a RuHC which cannot offer ART on its own to provide ART services through the human resource and technical support/assistance by the District Hospital/Referral Health Centre.
- This model is especially unique in providing ART services by building capacities of existing healthcare system.

## Concept of "the mobile ART service"

"Mobile ART Team" from the ART center (District Hospital) consists of :

- Doctor or Clinical Officer (Dr/CO)
- Pharmacist
- Lab staff
- Counselor
- other staff

**The Team visits "mobile ART centers" (RuHCs) regularly (in principle, every two weeks) to help their staff to provide ART service to the community people at respective RuHCs.**



## Findings

1. The project has clearly shown that access and quality of care in rural districts can be enhanced by Mobile ART services run by DHMT.
2. Defaulter rate in rural area is potentially a problem as people walk long distances and have to go to fields, therefore adherence support is paramount. Adherence supporters should be motivated for their activities.
3. Mobile ART services run by DHMT should be adopted as a tool for scale up. National guidelines for mobile ART service are being developed by MOH & NAC.

Thank You



## **MINISTRY OF HEALTH**

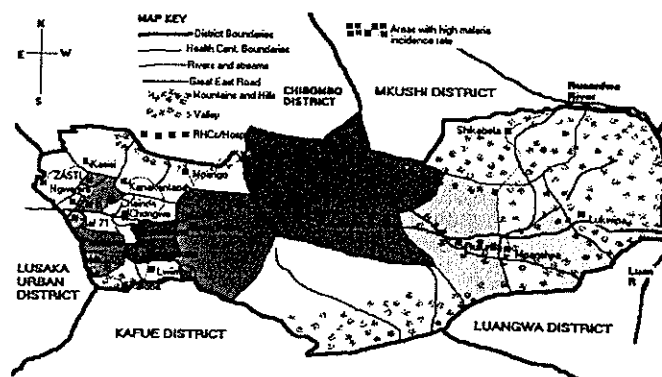
### **CHONGWE DISTRICT HEALTH MANAGEMENT TEAM**

**PROGRESS REPORT**

**DR. C. Y. MSISKA**

**17<sup>TH</sup> MARCH 2009**

## **CHONGWE MAP**



### **District Profile**

- Population: 205,273
  - Area: 10500 Km<sup>2</sup>
  - Constituencies: 2
  - Chiefdoms: 4
- Health Facilities**
- Hospitals: 1
  - Health Centres: 24
  - Health Posts: 9
  - Total Health facilities: 34

### **ART SERVICES- CHONGWE**

- ART services are being provided at:
  - Chongwe RHC
  - Chinyunyu RHC
  - Lwimba RHC
  - Kasisi RHC
  - Chalimbana RHC
- To open soon
  - Kanakantapa RHC

### **ART SERVICES- MPHASHYA**

- With support from CRS ART services are being provided at:
  - Mpanshya Hospital
  - Shikabeta RHC
  - Chimusanya RHC
  - Kankumba RHC
  - Lukwipa RHC
  - Nyampande
  - Luangwa H. Post

### **TRAINING DONE**

Type of Training	MOH	CIRDZ	JICA	UNICEF	Other	Total
ART and OIs	10	20	15		20	65
Counselling	15		12			27
C Adherence		15	50		300	355
Paed. ART		16				16
DCT	5	20	10		20	55
PMTCT		43				43
PCR		25				25
C /Finger Prick.	10		10			20
Palliative Care					2	2
TBA PMTCT		26			3	29
IYC Feeding				8		8

## PENDING TRAININGS

- Paliative Care

To train 20 members of staff from selected centres in palliative care.

- Training in LMS

To train 15 members of staff in Logistic Management system for HIV test kits

- PMTCT

To train 10 members of staff from centres offering ANC services so as to increase PMTCT sites from the current 15 to 25.

- DCT

To train 15 members of staff from selected centres to improve on TB HIV intergration

## LABORATORY

- Have three diagnostic centres
- Mphashya, Chongwe and Kanakantapa.

### CONSTRAINTS

- Few Laboratory Technicians
- Few Diagnostic centres
- Processing of sputum not done in the conducive room.
- Reagent for machine at K/ntapa costly.

### EQUIPMENT

Water bath  
Chemistry Analyser  
CD4 Machine  
Blood Bank refrigerator

## INFRASTRUCTURE

1. Construction of the New ART Building at Chongwe RHC.
2. Construction of the New Laboratory.

### Pending

Renovation of the old Laboratory into a TB Ward

## CUMMULATIVE VCT FIGURES AS ON JAN - DEC 2008

	CHONGWE	MPANSHYA	TOTAL
Counselled	1446	1332	2778
Tested	1431	1327	2758
HIV Positive	615	424	1089
HIV Negative	812	901	1713
Inderterminant	4	2	6
Referred to ART	615	424	1039

## CUMMULATIVE PMTCT FIGURES JAN – DEC 2008

	CHONGWE	MPANSHYA	TOTAL
ANC clients (1 <sup>st</sup> Attend)	6,428	408	6,836
Counselled	6,428	408	6,836
Tested (1 <sup>st</sup> Attendences)	6,136	399	6,535
HIV Positive	900	64	964
HIV Negative	5236	335	5,571
Referred to ART	900	64	964
Babies tested @ 6/52	144	28	172
Babies positive @ 6/52	14	1	15
Partners tested	776	18	794
Partners testing positive	99	2	101

## CUMMULATIVE ART FIGURES JAN - DEC 2008

	CHONGWE	MPANSHYA	TOTAL
Enrolled to HIV Care	2041	64	2105
Currently on ART	1194	360	1554
Died	110	24	134
Defaulted	109	8	117
Transout	10	6	16
<b>TOTAL</b>	<b>1423</b>	<b>398</b>	<b>1821</b>



## New Interventions

- Male circumcision – Chongwe RHC
- Cervical Cancer screen – Chongwe RHC
- Blood Transfusion – Chongwe and Mpanshya

## ACHIEVEMENTS

### BEFORE THE PROJECT

- ART out reach was done only in Kasisi.
- No specific vehicle for ART.
- CD 4 done in Lusaka
- Other Laboratory test (LFTs, RFTs etc) also done in Lusaka.
- Limited training in ART
- Few people accessing ART

### AFTER THE PROJECT

- ART Out reach also now in Lwimba, Chinyunyu, and Chalimbana.
- CD4 and Chemistry analyser procured
- Specific vehicle for ART available
- A number of training in ART done including at Community level
- More people now accessing ART

## General achievement

- More people are now able to access ART services
- Stigma which was very common but now it is dying done.
- Mortality has been reduced.
- Mobile ART services done regularly.
- Availability of logistics eg ARVs, HIV Test Kits through the Logistic Management system.
- Commiy members trained in

## CHALLENGES

- Staff shortage still persistent this has caused delays in opening more outreach centres.
- Transport for follow up of defaulter – need for more bicycles and motorcycles
- Staff attrition – Need for more training to new staff.

## ACKNOWLEDGEMENTS

- MOH
- PHO
- JICA
- CIRDZ
- ZAMBART
- CHAZ
- CRS
- JHPIEGO
- CDC
- HSSP
- UNICEF

### Local Partners

- World Vision
- Africare
- HCP
- CCF
- PCI
- Zambia Helpers

**THANK YOU FOR LISTENING**



## KASISI RURAL HEALTH CENTRE

Mobile site ART Presentation

Venue: Chrismar Hotel

Date: 17<sup>th</sup> March, 2009

Presenter: Henry Kapyata

## Skipping the Graveyard



### ⊙ Before 2006

- HIV/AIDS used to be a pathway to the graveyard.
- Moreover the Health Centre borders the grave yard.

### • Reasons

- Cultural/traditional beliefs
- Stigma
- Distance
- No ARVs
- Cost
- Knowledge

## Kasisi Rural Health Centre

⊙ Total Population – 11, 737

### ⊙ Boundaries

- Chainda RHC – East
- Ngwerere HP – West
- ZASTI RH – South
- Chibombo District – North

## Kasisi Rural Health Centre

### ⊙ Referral Points

- Chongwe – 50 Km
- UTH – 32 Km
- Chelstone – 18 Km
- Human Resource
  - 1 Registered Nurse
  - 2 Enrolled mid-wives
  - 1 enrolled nurse
  - 1 EHT
  - 2 CDEs

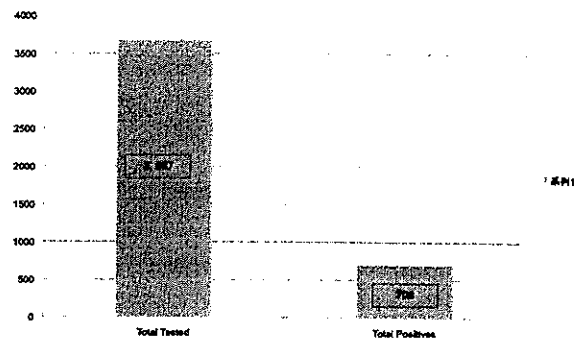
## Community Support

- ⊙ 6 Community adherence counselors
- ⊙ 2 Community counselors
- ⊙ 1 PMTCT community counselor
- ⊙ 4 Community health workers
- ⊙ 5 TBAs

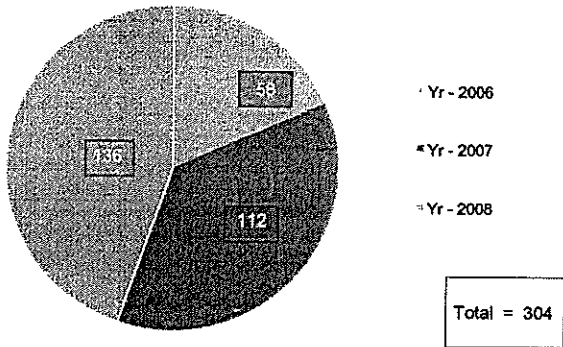
### ART Service entry points

- ⊕ VCT
- ⊕ PMTCT
- ⊕ DCT
- ⊕ PCR

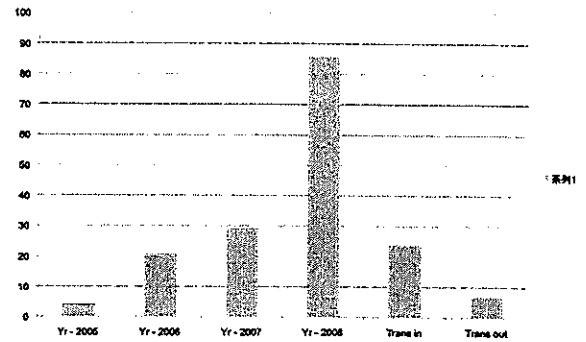
### Summary from 2004 – 2008



### Enrolments



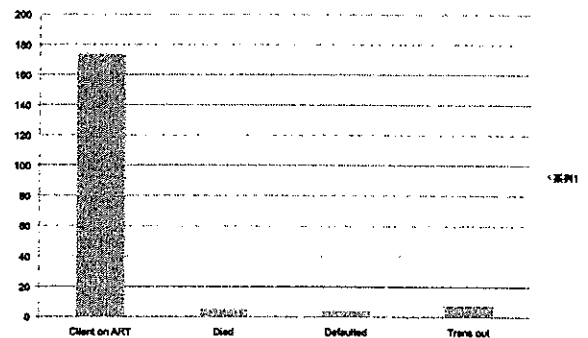
### On ART



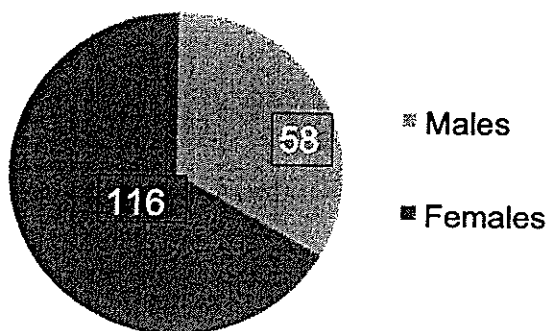
### On ART



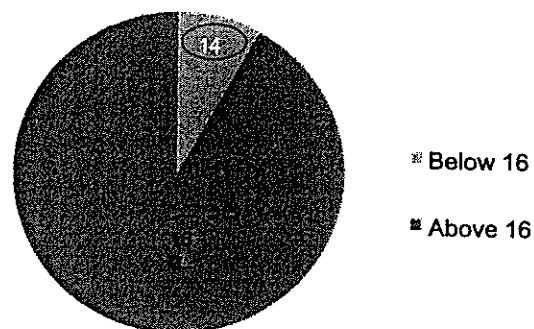
### Treatment outcome as at 31<sup>st</sup> Dec, 2008



### Gender Ratio



### Age – Ratio



### Achievements

- ⊙ VCT
- ⊙ PMTCT
- ⊙ Mobile ART
- ⊙ Knowledge

### Constraints

- ⊙ Human Resource
- ⊙ Accommodation
- ⊙ HC Infrastructure
- ⊙ Data equipment
- ⊙ Delayed lab results

### Acknowledgements

- ⊙ Chongwe DHO
- ⊙ JICA
- ⊙ CIDRZ
- ⊙ Kasisi Staff/Community

### WE'VE SKIPPED THE GRAVEYARD





## Mumbwa DHMT

JICA wrap up meeting

17<sup>TH</sup> MARCH 2009

DR. M.C. DUBE

## Introduction

- Mumbwa district 154 kms from Lusaka.
- Population of 168,000 people with HIV prevalence of 18 % (provincial) While at the beginning of project stood at 13%,
- 2 Hospital, 23 Rural health centres and 3 health posts,
- ART/VCT services commenced in 2004 at Mumbwa Hosp.
- TB cure rate of 57% in 2003,
- JICA integrated HIV Care Implementation Project at District level commenced in 2006 with needs assessment, field visits to Lusaka, Kapiri Mposhi and Kabwe followed by PDM formulation,
- Training commenced in 2006 November. Mobile ART program began in January 2007 at Lungobe RHC.

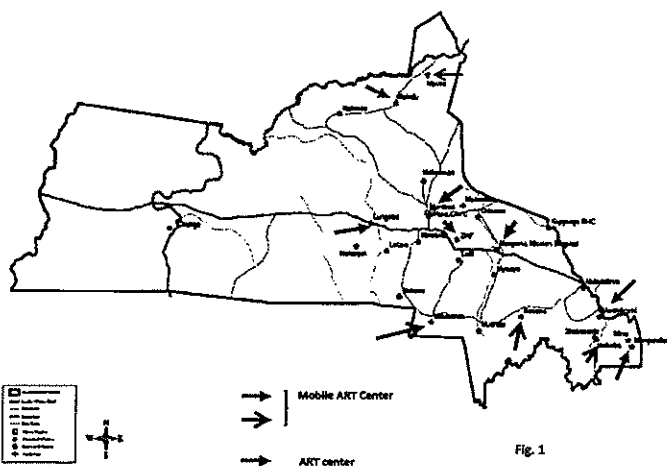
## Objectives

1. To improve access to VCT services from 1,171 (2005) to 4,500 per year by end of 2008
2. To strengthen ART services for PLWHA by providing training in ART/Ois by end of project.
3. To strengthen community awareness on ART services by end of 2008
4. To scale up ART services from 1 to 10 by end of project period.
5. To improve on the quality of TB/HIV/AIDS services by integrating TB DOTS and CTC in HIV/AIDS activities in the district by end of 2008
6. Improve DHMTs capacity in HIV/AIDS care services through HIV/AIDS protocols and M&E of all facilities in the district by end of 2008
7. To improve DHMTs networking with other stakeholders involved in care of PLWHAs through planned meetings and activities by end of 2008

## Community Partnership

- Trainings done to the community helped in task shifting with the big challenge of staff shortage in the areas of adherence counseling and psychosocial counseling.
- Involvement of DATF, NZP+ and other stakeholders assisted in mobilizing the community in ART management
- CCF and CHAZ (through Nangoma Hosp.) also assisted in improving access of VCT and ART services respectively.
- Companies such as DUNAVANT also facilitated with HIV/AIDS work place policies in improved VCT services to the farmers and their workers.
- Formation of PLWHIV/AIDS groups also helped in the area of adherence counseling and health education.

Mumbwa District Health Facilities Base Map 2007



## ART Service in Mumbwa District

	Start at	Service Date	Human Resource	ART
Mumbwa D.Hosp.	Sept/2004	Monday ~ Friday	—	1,866
Nangoma M.Hosp.	July/2006	Monday & Friday	—	875
Lungobe RuHC	Feb/2007	Every Two week Friday	C.O. 1 Ns. 1 E.H.T 1	203
Nampundwe RuHC	Feb/2007	Every Two week Wednesday	C.O. 1 Ns. 3 E.H.T 1	308
Mwenbezhi RuHC	June/2007	Every Two week Wednesday	C.O. 1 Ns. 3 E.H.T 0	316
Kaindu RuHC	July/2007	Every Two week Thursday	C.O. 1 E.H.T 1	72
Nalbanda RuHC	Aug/2008	Every Two week Thursday	C.O. 1 E.H.T 1	28
Sichobo RuHC	Dec/2008	Every Two week Wednesday	Ns. 1 E.H.T 1	22
Keezwa RuHC	Dec/2008	Every Two week Wednesday	Ns. 1 E.H.T 1	21

## Input: Training

## (2)-1. Overseas Training

Country	Title of Training	Name of Participants
Thailand	TOT on HIV/AIDS Care & ART Management	Lawrence PHIRI (Dr)
Japan	HIV/AIDS Care/Community Health	Christopher DUBE (Dr)

## (2)-2. In Country Training

Title of Training	No. of Participants	
	Mumbwa	
Psychosocial Counselling Course × 3	25	
Finger Pricking Method Course × 2	21	
Diagnostic Counselling & Testing × 2	20	
PMTCT & PMTCT lay-counselor Course	19	
ARVs and OIs Management Course	21	
Facility Based Adherence Counselling × 1	20	
Community-based Adherence Counselling × 4	51	

## inputs

## Equipment

Item	Total Price
Vehicle (TOYOTA Land Cruiser) X 1	K 163, 284, 713
Haematology Analyser (Poch 100i)	9,760 USD
Bio-Chemistry Analyser (Cobas C-111)	22,890 USD
Reagents	-
Water Distilliser	4,477 USD
Extension of ART center	11,946,000 Kw (≈ 3,413.1.2 USD)
Bio-Chemistry Analyser (Cobas C-111)	23,884 USD

## Mumbwa DHMT inputs

Expenditure Report for Mobile ART Service From DHMT  
(From Oct 2007 to Feb 2009)

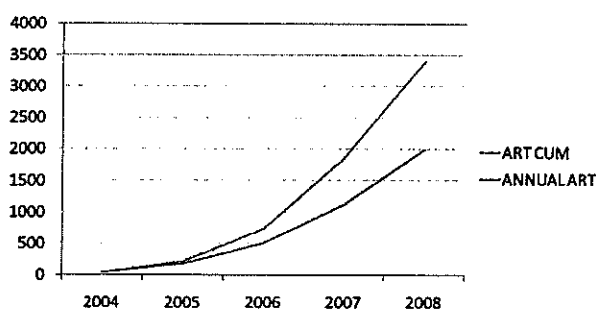
## Mumbwa DHMT

Items	Amount in Kwacha
Allowance for Team Member	K 37,625,000
Fuel	K 64,731,840
Motor Vehicle Service	K 19,927,873
<b>Total</b>	<b>K 122, 284, 713</b>

## Mumbwa DHMT

Indicator	Baseline (Q1 2006)	End of Feb 2009	Target
<b>Project Purpose</b>			
1. Cumulative number of HIV positive case detected by VCT/PMTCT	942	7,161	7,000
2. Cumulative number of ART clients	324	3,394	3,500
3. Percentage of defaulters within 6 months among ART clients	19.1%	15% (6.5%)	<10%
<b>Output 1. Access to HIV counseling and testing</b>			
1-1. Number of health facilities providing VCT service	17	23	28
1-2. Number of health facilities providing PMTCT service	12	23	28
1-3. Number of health facilities providing DCT service	0	15	28
1-4. Number of health facilities applying F-P HIV testing method	0	23	28
1-5. Annual number of HIV counselling and testing in VCT	1171	7,096	8,000
1-6. Annual number of HIV counselling and testing in PMTCT	2659	8,177	5,000
1-7. Percentage of HIV tested among TB clinic	20%	81%	>80%
1-8. Percentage of HIV tested among ANC clinic	9%	53%	>80%
<b>Output 2. Quality HIV care services</b>			
2-1. Number of health facilities providing ART services	1	10	10
2-2. Number of health facilities which provide adherence counselling	0	10	20
2-3. Percentage of patients on ART who are screened by CD4 count testing for eligibility	0%	90%	>80%
2-4. TB Treatment Success (TB Cure) rate	70%	81%	>85%
2-5. Percentage of HIV positive TB patients who undertook CD4 test	Unknown	100%	>80%
2-6. Percentage of TB patients who are eligible and started ART	Unknown	98%	>80%
<b>Outputs 3: DHMT's management capacities in HIV care services</b>			
3-1. Frequency of experience sharing meetings	—	Quarterly	Quarterly
3-2. ORs conducted and shared at central level	—	Yes	Yes

## ART SERVICES



## PMTCT SERVICES

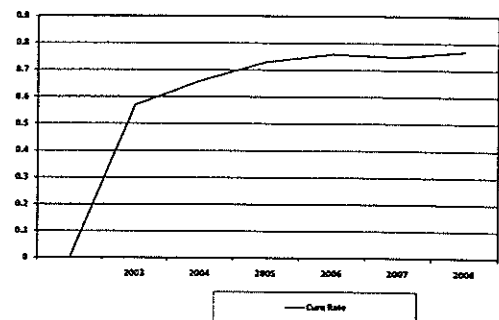
YEAR	2005	2006	2007	2008
Total tested	294	1628	4152	6177
Total HIV positive	33	288	638	573
ANC swallowed ARVs	21	108	321	340
Babies given ARVs	10	113	200	179
Babies tested for HIV	0	3	19	171
Babies tested +VE	0	1	7	17



## TB SERVICES

- Improved TB/HIV/AIDS integration with all 23 Health facilities conducting DCT.
- DCT testing rates before Mobile ART services were at 46.6% improved to 85% by end of 2008.( Mobile ART sites alone)
- Increased number of ART clients in mobile ART sites (Before= 28 (32%) to After = 85 (41.3%)
- DCT training to other health facilities also lead to improved integration of TB/HIV services. i.e. Increased number of ART clients in non-mobile ART sites (Before= 2 (27.6%) to After = 82 (37.4%) with DCT rates of 38.8% before to 77.2% end of 2008.

## TB Cure Rate



## CHALLENGES

- Inadequate Human resource
- Inadequate infrastructure in RHCs
- With the project over challenges in procuring chemistry analyser reagents.
- Inadequate number of DCT trained facilities
- PMTCT/DBS bundles
- Inadequate incentives for ART providers
- Poor Adherence at the two Hospitals especially Mumbwa Hospital.

## WAY FORWARD

- Train more staff in DCT
- MOH to assist on the chemistry analyser reagents by adopting the COBAS 111.
- Improve follow up and transfer of clients to mobile ART sites.
- Improve on PMTCT logistics management esp. DBS.
- Evolve into phase II of mobile ART provision by partial waning off of RHCs as we scale up.

## CONCLUSION

- Mumbwa DHMT thanks the Ministry of Health and JICA for having assisted in the successful completion of the project.

THANKS FOR LISTENING





## ART SERVICES AT RURAL HEALTH CENTRE LEVEL

THE MWEMBEZHI EXPERIENCE  
MR.J. KALEKWA (CO INCHARGE)

## INTRODUCTION

- Mwembeshi Lutheran RHC is a mission run health facility with a population of 11,000 people.
- The centre lies 120 Km from DHO.
- VCT services commenced under CHAZ support in 1990.
- ART services at the facility commenced on the 23<sup>rd</sup> March 2007 through mobile services provided by Mumbwa District Hospital every 2 weeks on a Wednesday.
- Two members of staff were trained in ART/OIs services.

## ART SERVICES FROM MAY 2007 TO DATE

- 254 people initiated on ART i.e. 120 male and 134 female
- 61 transfers in mostly from Lusaka i.e 20 male and 41 female.
- A cumulative total of 315 on ART register.
- 29 deaths i.e. 13 male and 16 female most of these deaths due to late enrolling for ART
- 6 Defaulters i.e 3 male and 3 female
- A total of 280 active clients

## COMMUNITY SUPPORT

- Mwembeshi has very strong community support for the ART programme.
- The support is drawn from the traditional leadership with all 32 headmen in the for front of the fight against HIV/AIDS.
- 8 community adherence supporters have been trained.
- These 8 adherence support workers have formed support groups in the 7 neighborhood units.
- The adherence supporters help follow up defaulters
- Alliance an NGO trained 8 adherence counselors who assist the JICA trained adherence counselors

Adherence Supporter giving health Education



Staff attending to ART clients



## CHALLENGES

- Inadequate space for ART clinic
- Lack of Laboratory facility especially for TB clients with UTH being the nearest
- Inadequate motorized transport for follow up of clients in the community
- Lack of incentives for the ART programme.

## WAY FORWARD

- With support from JICA and UNICEF materials for construction of ART/LAB facility currently under way
- Need for incentives in the ART programme
- Need for a motor bike to facilitate monitoring of adherence supporters/follow up of defaulters.

THANK YOU!!!



Operational Research (ART)

## Operational Research on quality and effectiveness of mobile ART service at Rural Health Centres.

Integrated HIV/AIDS Care Implementation Project at District Level Workshop  
 "Effective Community Outreach In HIV/AIDS Using Mobile ART Service in Chongwe and Mumbwa District"

## Research Objectives;

To evaluate the quality and effectiveness of mobile ART service at Rural Health Centres.

- ① Treatment outcome
- ② Benefit of Mobile ART service
- ③ Factor affecting ART adherence in rural area

## ① Treatment Outcome

### Methodology;

The analysis was undertaken based on the clients' information recorded in the "Monthly ART Register" kept at each ART site, and the clients were limited to those who have been registered at Rural Health Centres before the end of June, 2008 (2008 Q2).

Treatment outcomes evaluated at 6th month after starting treatment for descriptive purposes.

## Results;

Table 1. Characteristics of ART clients

	Chongwe	Mumbwa
No of ART Clients	247	476
Age, Mean (SD) (< 14 y.o.)	37.2 (14.6) (19 cases)	36.8 (11.2) (20 cases)
Gender		
M	97 (39.4%)	191 (40.1%)
F	148 (60.2%)	285 (59.9%)
CD4 cell count (cells/ $\mu$ l)		
> 200	26 (10.6%)	44 (9.2%)
50 – 200	127 (51.8%)	199 (41.8%)
< 50	61 (24.8%)	114 (23.9%)
Unknown	32 (13.0%)	119 (25.0%)
Regimen		
NEV+3TC+d4VAZT	161 (65.4%)	320 (67.2%)
EFV+3TC+d4VAZT	8 (3.3%)	151 (31.7%)
NEV+TDF+FTC	6 (2.4%)	
EFV+TDF+FTC	47 (19.1%)	
Others	24 (9.8%)	5 (1.1%)

## Results (Cont.);

Fig. 1 Treatment Outcome at 6<sup>th</sup> Month

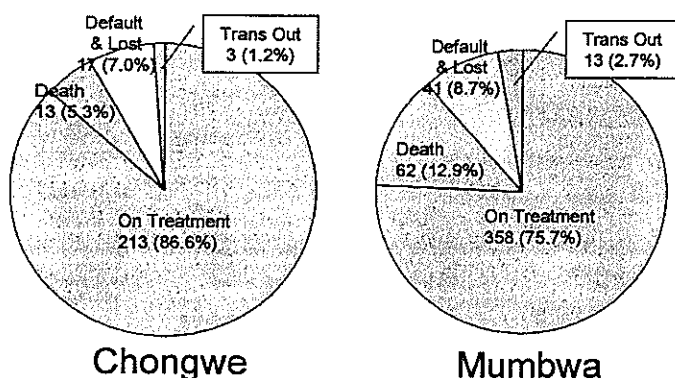
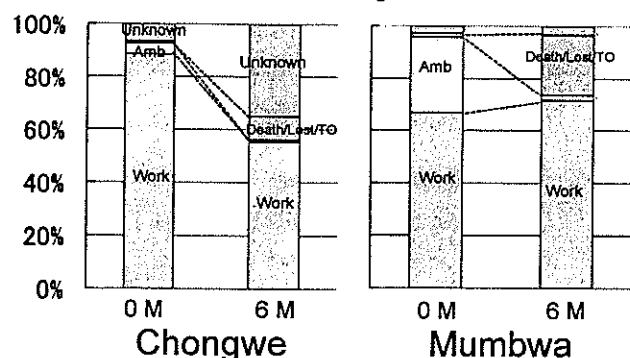


Table 2. Comparisons of treatment outcomes

District (Study Code)	Patients Started on ART (n)	Median Follow-up (Month)	Died	Lost to Follow-Up	Retained at Original Site	Percentage of Patients Retained at 6 month	Reference	Year
Chongwe	247	6	5.3%	7.0%	86.6%	86.6%	—	—
Mumbwa	476	6	12.9%	8.7%	75.7%	75.7%	—	—
(Zambia 1)	16198	6.8	7.1%	21.0%	71.5%	71.6%	Singer et al.	2006
(Malawi 1)	1308	8.3	18.6%	7.0%	73.9%	78.0%	Feredini et al.	2006
(Malawi 2)	13183	6	7.8%	7.8%	81.6%	83.5%	Lizembe et al.	2006
(Malawi 3)	141	6	27.7%	7.8%	61.7%	61.7%	Honourpour et al.	2006
(Malawi 4)	625	6.2	7.0%	33.6%	55.4%	55.4%	Honourpour et al.	2006
(Malawi 5)	1634	6.3 <sup>a</sup>	8.3%	2.4%	86.7%	88.7%	Zachariah et al.	2007
(Mozambique 1)	401	9.5	12.5%	9.3%	78.2%	—	Palombi et al.	2004
(Uganda 1)	399	3.3	16.0%	24.0%	48.0%	63.0%	Weldie et al.	2002
(Uganda 2)	105	6.0	14.3%	4.8%	81.0%	81.0%	Rigon et al.	2006
(Multi country)	16575	7.0	8.0%	7.0%	80.0%	80.3%	El-Sadr et al.	2006

## Results (Cont.);

Fig. 2 Functional Status at commencement of ART and 6 month after starting treatment



## ② Benefit of Mobile ART service - Cost analysis

### Methodology;

Questionnaire survey to evaluate the benefit of expansion of ART service was conducted in Mumbwa district with written informed consent. ART clients aged 18 or more, who came to the four rural health centres providing ART services, were offered to participate in the study. Items asked in the questionnaire included cost and time required for ART service.

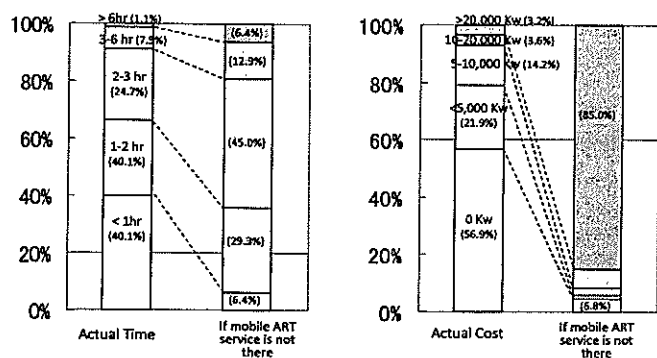
### Conclusion;

1. Decentralization of treatment closer to community is necessary for the continuity of care and treatment.
2. Quality of ART services at RuHC level can be ensured with the support from district through mobile ART services.
3. There are strong demands especially in rural community for scaling-up of ART services to RuHC level.

## Results;

Valid answers were obtained from 280 research participants.

Fig. 3 Time and Cost for transportation accessing to ART services



## Results;

Valid answers were obtained from 548 research participants.

Table 3. Characteristics of Study Participants

Average Age (years)	38.3 (9.2SD)	How do you remind themselves	
Gender		Watch	245 (47.3%)
Male	206 (39.8%)	Clock	79 (15.3%)
Female	297 (57.3%)	Mobile Phone	58 (11.2%)
Average treatment period (Months)	12.5 (10.3 SD)	Radio	85 (12.5%)
Marital status		Television	7 (1.4%)
Single/Divorce/Widowed	248 (47.9%)	The position of Sun	49 (9.5%)
Married/Remarried	251 (48.5%)	Others	13 (2.3%)
Occupation		Adherence support	
Government staff	18 (3.5%)	Nothing	99 (19.1%)
Company worker	16 (3.1%)	Your ART Buddy	84 (16.2%)
Own job	68 (13.1%)	Family's support	264 (51.0%)
Farmer	266 (51.4%)	Friend's support	9 (1.7%)
House wife	53 (10.2%)	Support group	26 (5.0%)
Others	66 (12.7%)	Health Volunteer	1 (0.2%)
Medical Staff		Medical Staff	24 (4.6%)
Others		Others	9 (1.7%)
What do you own (Multiple Answer)		Recent Adherence (Past 4 days missed dose by self-report)	
Watch	262 (50.6%)	Never Missed	458 (88.4%)
Mobile Phone	96 (18.9%)	Once or more	53 (10.2%)
Radio	254 (49.0%)		
Television	109 (21.0%)		

## ③ Factor affecting ART adherence in rural area

### Methodology;

Questionnaire survey to evaluate the factor affecting ART adherence in rural area was conducted in Mumbwa district at the same time of former survey. ART clients aged 18 or more, who came to the four rural health centres providing ART services and District Hospital, were offered to participate in the study. The questionnaire includes the issues such as means of reminding time to take ARVs at scheduled time, and their current status of adherence.

## Results (Cont.);

**Table 4. Bivariate logistic regression analyses of predictors to the low adherence**

	Once or more (n=63)	Never Missed (n=458)	Odd's Ratio (95%CI)	p value
<b>Age</b>				
More than 38 years old	13 (6.0%)	205 (94.0%)	0.401 (0.209-0.770)	0.005
38 years old and less	40 (13.7%)	253 (86.3%)	1	
<b>Gender</b>				
Male	15 (7.4%)	188 (92.6%)	0.554 (0.295-1.035)	0.061
Female	37 (12.6%)	256 (87.4%)	1	
<b>Marital Status</b>				
Single/Divorce/Widowed	30 (12.3%)	214 (87.7%)	0.691 (0.387-1.236)	0.211
Married/Remarried	22 (8.8%)	227 (91.2%)	1	
<b>Duration of ART</b>				
More than 12 Month	30 (9.8%)	276 (90.2%)	1.163 (0.655-2.065)	0.607
12 Month and less	23 (11.2%)	182 (88.8%)	1	
<b>Way of reminding the time</b>				
Watch	24 (9.8%)	220 (90.2%)	Reference	
Clock	8 (10.5%)	68 (89.5%)	1.078 (0.463-2.511)	0.861
Mobile Phone	2 (3.5%)	55 (96.5%)	0.333 (0.078-1.453)	0.144
Radio/Television	10 (14.1%)	81 (85.9%)	1.503 (0.662-3.312)	0.312
The position of Sun	8 (16.3%)	41 (83.7%)	1.789 (0.245-1.256)	0.189
<b>Adherence support provider</b>				
Nothing	15 (15.2%)	84 (84.8%)	Reference	
Your ART Buddy	12 (14.3%)	72 (85.7%)	0.933 (0.410-2.123)	0.869
Family's support	19 (7.3%)	241 (92.7%)	0.441 (0.215-0.908)	0.026
Others	7 (12.1%)	51 (87.9%)	0.653 (0.251-1.700)	0.383

## Results (Cont.);

**Table 5. Multivariate logistic regression analyses of predictors to the low adherence**

	Odd's Ratio (95%CI)	p value
<b>Age</b>		
More than 38 years old	0.331 (0.162-0.673)	0.002
38 years old and less	1	
<b>Adherence support provider</b>		
Nothing	Reference	
Your ART Buddy	0.872 (0.367-2.041)	0.757
Family's support	0.361 (0.164-0.792)	0.011
Others	0.616 (0.226-1.679)	0.343
<b>Way of reminding the time</b>		
Watch	Reference	
Clock	1.326 (0.525-3.353)	0.551
Mobile Phone	0.416 (0.093-1.858)	0.251
Radio/Television	1.499 (0.661-3.398)	0.332
The position of Sun	2.396 (0.958-5.990)	0.062

## Conclusion;

1. Less than half of the ART clients use a watch and about 10% of the clients rely on the position of the sun in our study sites. This indicates that the ART clients in the rural areas seem to face challenges in taking ARVs on time.
2. It was revealed that support from family member was important to keep optimal adherence.
3. Those people who rely on the position of the sun to know the time seems to be under the risk of suboptimal adherence in multivariate analysis, but not statistically significant.







## Assessment of improvement of TB/HIV care service where mobile ART service has been introduced

Integrated HIV and AIDS Care Implementation Project at District Level

Mr Nangana Kayama  
TB/HIV focal person, Mumbwa DHO  
Mar. 17, 2009

## Scale up of ART service in Zambia

<Difficulties & constraints in rural areas in Zambia>

- absolute shortage of medical staff
- poor access to ART centers in the rural areas
- (scattered settlements in the rural areas)
- poor transportation system
- poverty
- existence of relatively strong stigma
- lack of education

## Introduction of mobile ART service

1. Rural Health Centre (RuHC) cannot be accredited as an ART centre on its own according to the "Accreditation Guidelines" published in May, 2006. Further, RuHC cannot provide ART service on its own.
2. By introducing ART service with the help of the following mobile ART team to some RuHCs which have many ART clients in their catchment areas, the accessibility of the community to ART could be greatly improved. Such RuHCs have been selected and are called "mobile ART centres".
3. "Mobile ART Team" from the ART centre (District Hospital), which consists of Doctor/Clinical Officer, Pharmacist, Lab staff, Counselor and other staff depending on the necessity of the RuHCs, visits respective RuHC (mobile ART centre) regularly (every two weeks) to help its staff to provide ART service (mobile ART service) to the community people at RuHC (mobile ART centre).

Both Finger Pricking (F-P) method for HIV testing and Diagnostic Counseling and Testing (DCT) have been introduced at those RuHCs (mobile ART centres).

## Health facilities in Mumbwa (as of Mar., 2009)

2 hospitals: (ART Centres & TB diagnostic centres)  
Mumbwa District Hospital (DH)  
Nangoma Mission Hospital (MH)  
(cf. ZAF Mumbwa Clinic)

7 (+ 1) mobile ART centres:  
Lungobe RuHC  
Nampundwe RuHC  
Mwembezhi RuHC  
Kaindu RuHC (+ Mpusu HP)  
Nalubanda RuHC  
Sichobo RuHC (Nangoma MH)  
Keezwa RuHC (Nangoma MH)

18 non-mobile ART sites:  
13 RuHCs, 2 HPs, Mine Clinic (Private)  
Urban Clinic, Prison clinic (HP)

Mumbwa District Health Facilities Base Map 2007

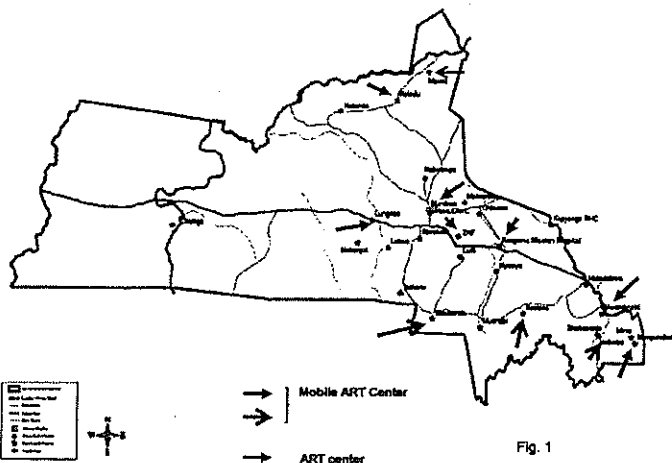


Fig. 1

## ART at the ART center

(before the introduction of mobile ART service)

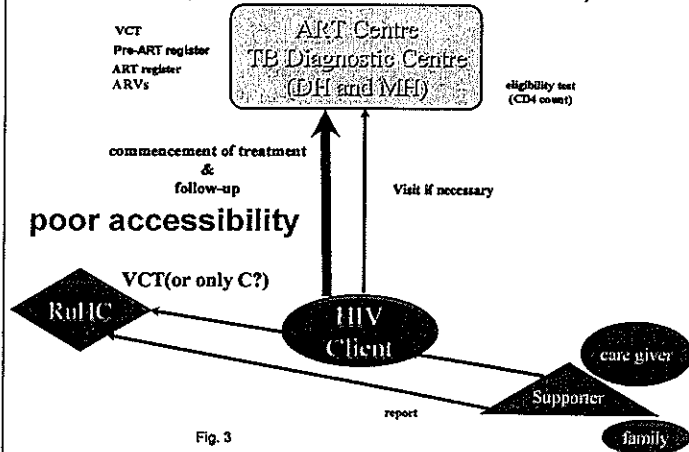
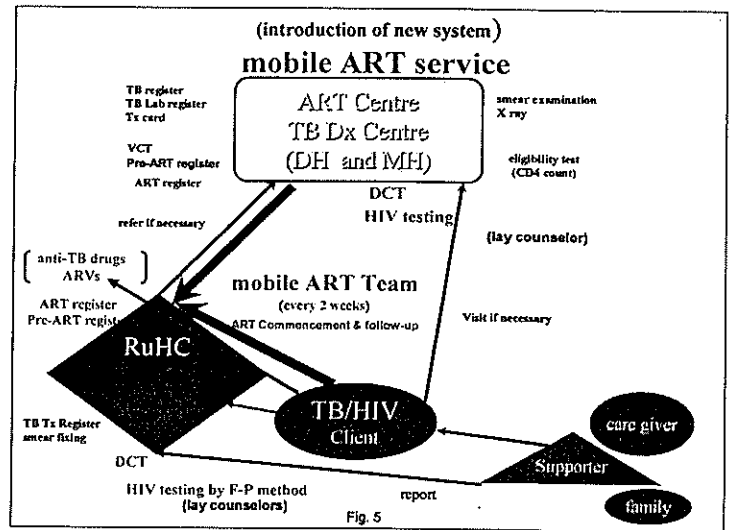
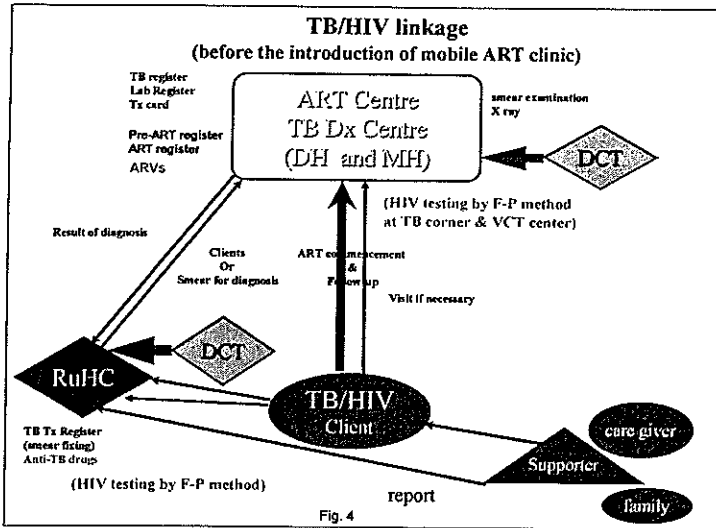


Fig. 3



**Introduction of mobile ART service**

Lungobe RuHC: Feb. 9, 2007  
 Nampundwe RuHC: Feb. 22, 2007  
 Mwembezi RuHC: May 23, 2007  
 Kaindu RuHC: Jul. 26, 2007  
 Nalubanda RuHC: Jul. 2008  
 Sichobo RuHC: Dec. 2008  
 Keezwa RuHC: Dec., 2008

New TB register book with HIV information has been introduced in July, 2006 in Mumbwa district.

So we define two periods in terms of ART service:

**Before (the introduction of mobile ART service):**  
 July 1, 2006 ~ Feb. 8, 2007

**After (the introduction of mobile ART service):**  
 Feb. 9, 2007 ~ Dec. 31, 2008

**TB/HIV at diagnostic centres in Mumbwa District (Before)** Table 1

	TB			HIV in TB pts						
	# of TB pts	type	SS	HIV test	Results	testing rate (%)	# of TB pts on ART	Tx	Treated in	
Mumbwa DH	P	142	+	41	+	45	24 (11.8%)	ART to TB: 8	Mumbwa 24	
	EP	56	-	82	-	12		TB to ART: 5		
	?	6	?	21	ND	?		?		11
	?	?	?	?	?	147		?		?
Nangoma MH	P	78	+	44	+	17	8 (9.6%)	ART to TB: 5	Nangoma 8	
	EP	14	-	35	-	4		TB to ART: 4		
	?	1	?	15	ND	?		?		4
	?	?	?	?	?	73		?		?
<b>Total</b>		<b>298</b>			<b>+/- 82/16</b>	<b>26.2%</b>	<b>33</b>			
					<b>78</b>	<b>23.8%</b>	<b>11.1%</b>			

Unknown data (N)

**TB/HIV at diagnostic centres in Mumbwa District (After)** Table 2

	TB			HIV in TB pts						
	# of TB pts	type	SS	HIV test	Results	testing rate (%)	# of TB pts on ART	Tx	Treated in	
Mumbwa DH	P	596	+	134	+	431	181 (22.9%)	ART to TB: 83	Mumbwa 178	
	EP	178	-	310	-	96		TB to ART: 52		
	?	10	?	348	NO	283		?		48
	?	?	?	?	?	?		?		?
Nangoma MH	P	215	+	118	+	112	50 (18.1%)	ART to TB: 15	Nangoma 80	
	EP	58	-	84	-	31		TB to ART: 8		
	?	4	?	75	NO	?		?		27
	?	?	?	?	?	133		?		?
<b>Total</b>		<b>1067</b>			<b>+/- 843/127</b>	<b>62.3%</b>	<b>231</b>			
					<b>670</b>	<b>37.1%</b>	<b>21.6%</b>			

Unknown data (N)

**TB/HIV at 5 mobile ART centres in Mumbwa District (Before)** Table 3

	TB			HIV in TB pts						
	# of TB pts	type	SS	HIV test	Results	testing rate (%)	# of TB pts on ART	Tx	Treated in	
Lungobe	P	16	+	?	+	4	43	ART to TB: 2	Lungobe 2	
	EP	4	-	?	-	?		TB to ART: 2		
	?	?	?	?	?	?		?		?
Nampundwe	P	23	+	12	+	10	40	ART to TB: 1	Nampundwe 8	
	EP	10	-	15	-	?		TB to ART: 1		
	?	?	?	?	?	?		?		?
	?	?	?	?	?	?		?		?
Mwembezi	P	12	+	5	+	?	68	ART to TB: 3	Mwembezi 6	
	EP	7	-	4	-	?		TB to ART: 8		
	?	?	?	?	?	?		?		?
Kaindu	P	10	+	5	+	5	42	ART to TB: 3	Kaindu 3	
	EP	2	-	?	-	?		TB to ART: 3		
	?	?	?	?	?	?		?		?
Nalubanda	P	7	+	1	+	?	37.5	ART to TB: 1	Nalubanda 1	
	EP	1	-	?	-	?		TB to ART: 2		
	?	?	?	?	?	?		?		?
<b>Total</b>		<b>88</b>			<b>+/- 31/10</b>	<b>46.6%</b>	<b>28</b>			
					<b>41</b>	<b>22.7%</b>	<b>32%</b>			

\* TB suspects were used to be sent to Lusaka for TB diagnosis at Mwembezi RuHC.

TB/HIV at 5 mobile ART centres in Mumbwa District (After)

Table 4

	TB				HIV in TB pts				Tx	Treated in		
	# of TB pts	type	SS	HIV test	Results	testing rate (%) (unknown data %)	# of TB pts on ART					
Lungobe	P	52	+	8	+	28	86	25	ART to TB	8	Lungobe	18
	EP	11	-	7	-	39			TB to ART	8		
	T	2	?	49	ND	1			?	1		
Nampundwe	P	54	+	28	+	48	91	35	ART to TB	7	Nampundwe	24
	EP	26	-	36	-	28			TB to ART	14		
	T	2	?	34	ND	4			?	14		
Mwembeshi	P	21	+	9	+	17	86	11	ART to TB	4	Mwembeshi	7
	EP	4	-	8	-	7			TB to ART	2		
	T	1	?	12	ND	4			?	5		
Kaindu	P	3	+	3	+	2	50	2	ART to TB	1	Kaindu	2
	EP	3	-	1	-	1			TB to ART	1		
	T	?	?	2	ND	3			?	?		
Makhande	P	14	+	2	+	12	62	9	ART to TB	1	Makhande	3
	EP	7	-	8	-	1			TB to ART	4		
	T	?	?	11	ND	3			?	4		
Total		206		47	106/67	85.0 %	82					
				175		(11.2 %)	(39.8 %)					

TB/HIV at 19 non-mobile ART centres in Mumbwa District (Before &amp; After)

Table 5

	TB				HIV in TB pts				Tx	
	# of TB pts	type	SS	HIV test	Results	testing rate (%)	# of TB pts on ART			
Total	P	63	+	28	+	28	27	38.8 %	ART to TB	1
	EP	19	-	36	-	10			TB to ART	12
	T	?	?	34	ND	18			?	42

Table 6

	TB				HIV in TB pts				Tx	
	# of TB pts	type	SS	HIV test	Results	testing rate (%)	# of TB pts on ART			
Total	P	144	+	66	+	124	82	77.2 %	ART to TB	22
	EP	49	-	56	-	45			TB to ART	11
	T	?	?	95	ND	7			?	43

TB/HIV summary in Mumbwa District

Table 7

		Before			After		
		TB pts	HIV testing rate (unknown data %)	# of ART clients among TB pts	TB pts	HIV testing rate (unknown data %)	# of ART clients among TB pts
diagnostic centres	Mumbwa DH	204	27.9 % (72.1 %)	24 (11.8 %)	790	66.7 % (33.3 %)	181 (22.8 %)
	Nangoma MH	94	22.3 % (77.7 %)	9 (9.6 %)	277	51.6 % (48.0 %)	50 (18.1 %)
	total	298	26.2 % (73.8 %)	33 (11.1 %)	1067	62.8 % (37.1 %)	231 (21.6 %)
mobile centres (5)	total (5)	88	46.6 % (22.7 %)	28 (32 %)	206	85.0 % (11.2 %)	82 (39.8 %)
non-mobile centres (19)	total (19)	98	38.8 % (42.9 %)	27 (27.6 %)	219	77.2 % (19.6 %)	82 (37.4 %)
Total		484		88	1492		395
				18.2 %			26.5 %

Comparison of TB/HIV indicators among mobile ART centres, non-mobile ART centres and TB diagnostic centres (DH &amp; MH) in Mumbwa District

Table 8

	5 mobile ART centres		non-mobile centres		Diagnostic Centres (DH & MH)		Total	
	Before	After	Before	After	Before	After	Before	After
$\alpha$	35.2 (31/88)	52.4 (108/206)	28.6 (28/98)	56.6 (124/219)	20.8 (62/298)	50.9 (543/1067)	25.0 (121/484)	51.9 (775/1492)
$\beta$	31.8 (28/88)	39.8 (82/206)	27.6 (27/98)	37.4 (82/219)	11.1 (33/298)	21.6 (231/1067)	18.2 (88/484)	26.5 (395/1492)
$\gamma$	90.3 (28/31)	75.9 (82/108)	96.4 (27/28)	66.1 (82/124)	53.2 (33/62)	42.5 (231/543)	72.7 (88/121)	51.0 (395/775)

$\alpha$ : % of TB clients found HIV positive among TB clients

$\beta$ : (number of ART clients)/(number of TB clients) x 100

$\gamma$ : (number of ART clients)/(number of HIV positive TB clients) x 100

## Results

- All health centres, mobile, non-mobile ART centres and TB diagnostic centres show similar changes from Before to After in all three indicators;  $\alpha$ ,  $\beta$  and  $\gamma$ .
- Average HIV testing rate among TB clients has increased from 46.6 % (41/88) to 85.0 % (175/206) in mobile ART centres which has been achieved by the introduction of both DCT and F-P method.
- Similarly, HIV testing rate among TB clients at TB diagnostic centres, i.e., both Mumbwa DH and Nangoma MH has also increased from 26.2 % (78/298) to 62.3 % (670/1067) by either drawing venous blood or F-P method. The introduction of DCT has contributed greatly to this result.
- The achievement of non-mobile ART centres is thought to be due to the improvement of TB/HIV care service at DH/MH.
- $\beta$  has increased both in mobile sites and non-mobile sites in After.
- The indicator  $\gamma$  has reduced after the introduction of mobile ART service. This is because we have been finding more HIV positive clients among TB clients who are not yet eligible for ART.
- The HIV positive rates among TB clients in "After" at mobile ART centres and TB diagnostic centres are 52.4 (108/206) % and 50.9 (543/1067)%, respectively which agrees with the national data: 40 ~ 70%.

## Discussion

- TB/HIV care service has been improved in the district as a whole in "After".
- The mobile ART centres have improved TB/HIV care service by the introduction of both DCT and F-P method with the collaboration with mobile ART service. TB/HIV clients have been benefiting from the introduction of mobile ART service.
- Obviously we can see that it is not beneficial for clients to be referred for TB diagnosis to far place such as Lusaka. The number of TB clients at Mwembeshi RuHC which has the biggest number of ART clients among 5 mobile ART centres is relatively small compared to that at other mobile ART centres such as Lungobe or Nampundwe RuHC where sputum smear slides are fixed which are sent to DH/MH for TB diagnosis.
- Considering the increasing burden of DH/MH, ART combined with TB service should be provided at RuHC level. Therefore, the scale-up of ART service by mobile ART to RuHCs is an effective and efficient way in rural areas such as Mumbwa district where clients live scattered in a vast land.



*OB Simpson*

**Progress of Activities for each Output**

Dr. James Simpsonwe, Project Manager

Progress of Activities		In-charge	2008												2007			Problems in this term	Remark	Targets and activities in the next term																																																																																																																																																																																																																																																																																													
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(Output No.1: Access to HIV counseling and testing is improved in order to detect HIV infection more and earlier)																																																																																																																																																																																																																																																																																																																	
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*Dr. James Simpungwa*

Dr. James Simpungwa, Project Manager

Progress of Activities		In-charge	2006												2007			Remark	Problems in this term	Targets and activities in the next term
			4	5	6	7	8	9	10	11	12	1	2	3						
<b>Output No.4: Quality of TB and TB/HIV services are improved)</b>																				
4-1	To conduct training/ sensitization in TB/HIV co-infection management for clinical staff	DHMT	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	Advised by JICA Experts		
4-2	To conduct follow-up of defaulters for both TB and HIV treatment	DHMT	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	Advised by JICA Experts		
4-3	To strengthen DDT strategy for both TB and HIV	DHMT	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
4-4	To upgrade sputum smear examination of laboratory capacity and quality by quality assurance	DHMT	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		● Following -Up the Workshop
<b>(Output No.5: Necessary management capacities of DHMTs to strengthen HIV and AIDS care services are enhanced)</b>																				
5-1	To ensure that national guidelines for HIV and AIDS care are available and followed by DHMTs	MOH	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
5-2	To improve communication, referral, and transportation systems among health facilities	MOH	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	Situational Survey was conducted by JICA Expert		
5-3	To support to conduct training for DHMT staff to improve necessary management skills for strengthening HIV and AIDS care services, such as performance assessment, monitoring and evaluation, District Integrated Logistic Assessment Tool, and technical support	MOH	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		Data Recording & Reporting System shall be corrected
5-4	To advice for developing HIV/ART/TB planning system	MOH	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
5-5	To conduct experience sharing meetings between pilot districts	MOH	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
<b>(Output No.6: Innovative approaches to improve the HIV/AIDS situation are identified through Operational Research)</b>																				
6-1	To conduct baseline, follow-up, and end-line surveys for OR	MOH	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
6-2	To plan and implement OR in collaboration with concerned organizations	MOH	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
6-3	To monitor and evaluate the progress and findings of OR	MOH	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		Conduct Operational Research
<b>(Output No.7: Networking with concerned organizations is strengthened at central all levels)</b>																				
7-1	To conduct Taskforce Meeting quarterly	MOH	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
7-2	To conduct periodical sharing workshop bi-annually	MOH	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		

*Dr. James Simpungwe*

Progress of Activities		In-charge	2007												2008			Targets and activities in the next term
			4	5	6	7	8	9	10	11	12	1	2	3				
<b>Output No.1: Access to HIV counselling and testing is improved in order to detect HIV infection more and earlier)</b>																		
1-1	To identify and provide training for lay counselors	DHMT	Plan	Actual														Lay Counselors Training was conducted at Chainama College. 20 persons participated from the targeted district.
1-2	To conduct exchange visits for lay counselors	DHMT	Plan	Actual														The item is necessary to be revised during the Mid Term Evaluation.
1-3	To train more professional counselors	DHMT	Plan	Actual														Depending on the needs
1-4	To conduct quarterly review meetings for counselors	DHMT	Plan	Actual														The item is necessary to be revised during the Mid Term Evaluation.
1-5	To conduct orientation courses on Counseling and Testing at community level	DHMT	Plan	Actual														The item is necessary to be revised during the Mid Term Evaluation.
1-6	To promote Recommended/ Routine Counseling and Testing in health facilities such as TB,STI and Antenatal clinic	DHMT	Plan	Actual														Diagnostic Testing and Counseling Training was conducted at Chainama College, Lusaka from Jul 30 to Aug 3.
1-7	To introduce the Finger Pricking HIV testing in health centers	DHMT	Plan	Actual														Training was done by the Project in the first year. Consumables for Finger-Pricking method were delivered to DHMTs. EQA manual was developed by the Project in May.
1-8	To ensure to refer the HIV detected to the district hospitals/referral health centers	DHMT	Plan	Actual														The recording on the pre-ART and ART register books at ART centers except Chongwe Referral Health Center has been improved according to the advice by the JICA Project.
<b>(Output No.2: District hospitals or Referral health centers are strengthened to provide appropriate care services to PLWHAs)</b>																		
2-1	To install and provide guidance for maintenance for necessary medical equipment, such as x-ray machine, CD4 Counter, and others, at district health centers/ referral hospitals	DHMT	Plan	Actual														Another room for ART center is now being constructed in Mumbwa District Hospital under the support by JICA. A UPS was donated to Mumbwa District Hospital by JICA. Two types of Analyzers, a bio-chemistry analyzer and a hemetological analyzer, will be provided to Mumbwa District Hospital by JICA.
2-2	To conduct training for staff of the district hospitals/ referral health centers on HIV/ART management, including prevention and care for opportunistic infections	DHMT	Plan	Actual														One Clinical Officer (CO) of Mwanabashi RUHC and another CO of Namposwe RUHC will be receiving the regular training course of ART/OIs management at Chainama College.
<b>(Output No.3: Standard ART services are decentralized and scaled-up)</b>																		
3-1	To conduct training for community people, such as treatment supporters, care givers, community health workers, and traditional birth attendants	DHMT	Plan	Actual														Facility based Adherence Supporter Training was conducted in June at Mumbwa Term. 20 (Classified Daily Employee) participated in it.
3-2	To conduct training for staff of health centers on HIV/ART management, including prevention and care for opportunistic infections	DHMT	Plan	Actual														This item is very similar to activity 2-2.
3-3	To conduct training for staff of the health centers on commodity management	DHMT	Plan	Actual														The item is necessary to be revised during the Mid Term Evaluation.
3-4	To conduct regular supervising visit to health centers and lay counselors by DHMTs	DHMT	Plan	Actual														The regular supervisory visits have been conducted by the members of DHMT and JICA Experts the ART Mobile Clinic's days.
3-5	To introduce ART/DOT for necessary PLWHAs	DHMT	Plan	Actual														The item is necessary to be revised during the Mid Term Evaluation.

Dr. James Simpungwe, Project Manager  
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*Dr. James Simpungwe*

Progress of Activities for each Output		In-charge	2007												2008			Problem in this term	Targets and activities in the next term
			4	5	6	7	8	9	10	11	12	1	2	3					
<b>Output No.4: Quality of TB and TB/HIV services are improved)</b>																			
4-1	To conduct training/ sensitization in TB/HIV co-infection management for clinical staff	DHMT	Plan	Actual												The item is necessary to be revised during the Mid Term Evaluation.			
4-2	To conduct follow-up of defaulters for both TB and HIV treatment	DHMT	Plan	Actual												The item is necessary to be revised during the Mid Term Evaluation.			
4-3	To strengthen DOT strategy for both TB and HIV	DHMT	Plan	Actual												The item is necessary to be revised during the Mid Term Evaluation.			
4-4	To upgrade sputum smear examination of laboratory capacity and quality by quality assurance	DHMT	Plan	Actual												The item is necessary to be revised during the Mid Term Evaluation.			
<b>Output No.5: Necessary management capacities of DHMTs to strengthen HIV and AIDS care services are enhanced)</b>																			
5-1	To ensure that national guidelines for HIV and AIDS care are available and followed by DHMTs	MOH	Plan	Actual												The item is necessary to be revised during the Mid Term Evaluation.			
5-2	To improve communication, referral, and transportation systems among health facilities	MOH	Plan	Actual												The item is necessary to be revised during the Mid Term Evaluation.			
5-3	To support to conduct training for DHMT staff to improve necessary management skills for strengthening HIV and AIDS care services, such as performance assessment, monitoring and evaluation, District Integrated Logistic Assessment Tool, and technical support	MOH	Plan	Actual	●	●	●	●	●	●	●	●	●	●	●	This has been conducted as on the job training between JICA experts and Zambian counterparts.			
5-4	To advise for developing HIV/ART/TB planning system	MOH	Plan	Actual												The item is necessary to be revised during the Mid Term Evaluation.			
5-5	To conduct experience sharing meetings between pilot districts	MOH	Plan	Actual	●	●	●	●	●	●	●	●	●	●	●	The regular quarterly meeting was conducted in May at Mumbwa District. 28 persons participated in it.			
<b>(Output No.6: Innovative approaches to improve the HIV/AIDS situation are identified through Operational Research)</b>																			
6-1	To conduct baseline, follow-up, and end-line surveys for OR	MOH	Plan	Actual	●	●	●	●	●	●	●	●	●	●	●	Data collection on TB/HIV at mobile ART centres in Mumbwa district has been conducted, and the result will be presented at the International Conference of IUATLD in Capetown.			
6-2	To plan and implement OR in collaboration with concerned organizations	MOH	Plan	Actual	●	●	●	●	●	●	●	●	●	●	●	The item is necessary to be revised during the Mid Term Evaluation.			
6-3	To monitor and evaluate the progress and findings of OR	MOH	Plan	Actual	●	●	●	●	●	●	●	●	●	●	●	The item is necessary to be revised during the Mid Term Evaluation.			
<b>(Output No.7: Networking with concerned organizations is strengthened at central all levels)</b>																			
7-1	To conduct Taskforce Meeting quarterly	MOH	Plan	Actual	●	●	●	●	●	●	●	●	●	●	●	The monthly meeting among the concerned with the Project has been conducted.			
7-2	To conduct periodical sharing workshop bi-annually	MOH	Plan	Actual												The item is necessary to be revised during the Mid Term Evaluation.			

Dr. James Simpungwe, Project Manager









**Integrated HIV and AIDS Care Implementation Project at District Level**  
*For the Health of Community People in Zambia*

**Joint Coordinating Committee**

Date                    March 20<sup>th</sup> 2007 on Tuesday  
Time                    14:30 to 16:00  
Venue                    Main Board Room, Ground Floor, Ministry of Health

**Members List to be invited to JCC**

1. Dr. Simon Miti, Permanent Secretary, Ministry of Health (Chairman)
2. Mr. Eiji Inui, Resident Representative, JICA Zambia Office
3. Mr. Davis Chimfwembe, Director, Planning and Development, MOH
4. Dr. James Simpungwe, Director, Clinical Care and Diagnostic Services, MOH
5. Dr. Victor Mukonka, Director, Public Health, MOH
6. Dr. Ben Chirwa, Director General, National AIDS Council
7. Dr. Albert Mwango, ARV Coordinator
8. Dr. Kango, Clinical Care Specialist, MOH
9. Dr. Nathan Kapata, TB Specialist, MOH
10. Ms. Fales Mwamba, Laboratory Specialist, MOH
11. Ms. Kinkese, Chief Policy Analyst Para medicals
12. Dr. Charles Msiska, Director, Chongwe DHMT
13. Mr. Charles Kaira, Planning and Development Officer, Chongwe DHMT
14. Dr. Christopher Dube, Director, Mumbwa DHMT
15. Mr. M.M. Mukololo, Planning and Development Officer, Mumbwa DHMT
16. Dr. Lawrence Phiri, Doctor, Mumbwa District Hospital
17. Mr. Taro Kikuchi, Assistant Resident Representative, JICA
18. Ms. Tomoko Sichone, TB & HIV Program Coordinator, JICA
19. Mr. Takahito Katayama, Second Secretary, Embassy of Japan
20. Dr. Tadao Hayakawa, JICA Expert
21. Dr. Ikuma Nozaki, JICA Expert
22. Dr. Yutaka Ishida, JICA Expert
23. Mr. Katsunori Shirai, JICA Expert



## Integrated HIV and AIDS Care Implementation Project at District Level

*For the Health of Community People in Zambia*

### Agenda of JCC:

Master of Ceremony Dr. Msiska or Dr. Dube

1. National Anthem

2. Opening Prayer

3. Introduction of attendees

4. Welcome Remarks Dr. James Simpungwe

5. Speech by Permanent Secretary (Project Director), MOH

Dr. Simon Miti

6. Review the progress of the Project Activities of the first year

(From April 2006 to March 2007)

Dr. James Simpungwe, Director Clinical care and Diagnostic Services, Ministry of Health

Dr. Charles Msiska, Director Chongwe DHMT

Dr. Christopher Dube, Director Mumbwa DHMT

7. Make Presentation of ART management Training in Thailand by the two participants

Dr. Lawrence Phiri (ART manager) and Mr. Charlse Kaira (Manager of Planning and Development)

8. Plan the Project Activities of the second year. (From April 2007 to March 2007)

Dr. James Simpungwe

Dr. Charles Msiska, Director Chongwe DHMT

Dr. Christopher Dube, Director Mumbwa DHMT

9. Discussion

10. Closing Remarks by Resident Representative, JICA Zambia Office

Mr. Eiji Inui

### Providing Materials

1. Result of Base Line Survey

2. Trainees List

3. Summary of Recommendation by short term experts

### Other

Tea & Coffee, Mineral water



**Integrated HIV and AIDS Care Implementation Project at District Level**  
*For the Health of the Community People in Zambia*

Members List to be invited to JCC

- |                           |  |
|---------------------------|--|
| 1. Dr. Simon Miti         | Permanent Secretary, Ministry of Health<br>(Chairman)        |
| 2. Mr. Shiro Nabeya       | Resident Representative, JICA Zambia Office<br>(Co-Chairman) |
| 3. Mr. Davis Chimfwembe   | Director, Planning and Development, MOH                      |
| 4. Dr. James Simpungwe    | Director, Clinical Care and Diagnostic<br>Services, MOH      |
| 5. Dr. Victor Mukonka     | Director, Public Health, MOH                                 |
| 6. Dr. Ben Chirwa         | Director General, National AIDS Council                      |
| 7. Dr. Albert Mwango      | ARV Coordinator, Ministry of Health                          |
| 8. Dr. Nathan Kapata      | TB Specialist, Ministry of Health                            |
| 9. Dr. Max Bweupe         | PMTCT Specialist, Ministry of Health                         |
| 10. Ms. Fales Mwamba      | Laboratory Specialist, Ministry of Health                    |
| 11. Dr. Charles Msiska    | Director, Chongwe District Health<br>Management Team (DHMT)  |
| 12. Dr. Faith Chibeza     | ARV Coordinator, Chongwe DHMT                                |
| 13. Dr. Christopher Dube  | Director, Mumbwa DHMT  |
| 14. Mr. Nangana Kayama    | TB/HIV focal person, Mumbwa DHMT                             |
| 15. Dr. Tamotsu Nakasa    | Mid-Term Evaluation Mission Team/JICA                        |
| 16. Dr. Norio Yamada      | Mid-Term Evaluation Mission Team/JICA                        |
| 17. Ms. Naoko Ueda        | Mid-Term Evaluation Mission Team/JICA                        |
| 18. Ms. Akemi Serizawa    | Mid-Term Evaluation Mission Team/JICA                        |
| 19. Mr. Taro Kikuchi      | Assistant Resident Representative, JICA                      |
| 20. Ms. Motoko Seko       | TB & HIV Program Coordinator, JICA                           |
| 21. Mr. Takahito Katayama | Second Secretary, Embassy of Japan                           |
| 22. Dr. Tadao Hayakawa    | JICA Expert  |
| 23. Dr. Ikuma Nozaki      | JICA Expert  |
| 24. Mr. Katsunori Shirai  | JICA Expert  |
| 25. Ms. Mary Banda        | Project Secretary  |

(end)



**Integrated HIV and AIDS Care Implementation Project at District Level**  
*For the Health of the Community People in Zambia*

**The 2<sup>nd</sup> Joint Coordinating Committee Meeting**

- Date December 11<sup>th</sup> 2007 on Tuesday
- Time 9:30 to 11:00
- Venue Main Board Room, Ground Floor, Ministry of Health
- Agenda of JCC Master of Ceremony Dr. Christopher Dube
1. National Anthem
  2. Opening Prayer
  3. Introduction of participants
  4. Welcome Remarks Dr. James Simpungwe
  5. Speech by the Permanent Secretary (Project Director), MOH  
Dr. Simon Miti
  6. Presentation on progress of the Project  
(From April 2006 to December 2007)  
Dr. James Simpungwe, Director Clinical care and Diagnostic  
Services, Ministry of Health
  7. Presentation on the Mid-term Evaluation  
Mid-Term Evaluation Mission Team
  8. Revision of the Project Design Matrix  
Dr. James Simpungwe, Director Clinical care and Diagnostic  
Services, Ministry of Health
  9. Signing Ceremony  
Dr. Simon Miti and Mr. Shiro Nabeya
  10. Closing Remarks by the Resident Representative, JICA Zambia Office  
Mr. Shiro Nabeya

Attached materials

1. Joint Mid-Term Evaluation Report
2. Project Design Matrix (Version 2)



# Integrated HIV and AIDS Care Implementation Project at District Level



*For the Health of the Community People in Zambia*

## The 3<sup>rd</sup> Joint Coordinating Committee Meeting

<u>Date</u>	Wednesday, 8 <sup>th</sup> October 2008
<u>Time</u>	9:30 – 11:00
<u>Venue</u>	Main Board Room, Ground Floor, Ministry of Health
<u>Master of Ceremony</u>	Dr. Christopher Dube

### Agenda of JCC

1. National Anthem
2. Opening Prayer
3. Introduction of Participants
4. Welcome Remarks by Dr. James Simpungwe
5. Speech by the Permanent Secretary (Project Director), MOH Dr. Simon Miti
6. Presentation on progress of the Project (From January 2008 to September 2008) by Dr. James Simpungwe,
7. Presentation on the Terminal Evaluation by Terminal Evaluation Mission Team
8. Signing Ceremony by Dr. Simon Miti and Mr. Shiro Nabeya
9. Closing Remarks by the Resident Representative, JICA Zambia Office  
Mr. Shiro Nabeya

Attached Materials: Joint Terminal Evaluation Report



## Integrated HIV and AIDS Care Implementation Project at District Level



*For the Health of the Community People in Zambia*

### List of Members

- |                                |   |
|--------------------------------|---|
| 1 .Dr. Simon Miti              | Permanent Secretary, Ministry of Health (Chair)   |
| 2 .Mr. Shiro Nabeya            | Resident Representative, JICA Zambia Office (Co-Chair)/<br>Leader of Terminal Evaluation Study Team |
| <b>(Ministry of Health)</b>    |   |
| 3 .Mr. Davies Chimfwembe       | Director, Planning and Development, MOH   |
| 4 .Dr. James Simpungwe         | Director, Clinical Care and Diagnostic Services, MOH  |
| 5 .Dr. Victor Mukonka          | Director, Public Health, MOH  |
| 6. Dr. Albert Mwango           | ARV Coordinator, MOH  |
| 7. Dr. Nathan Kapata           | TB Specialist, MOH  |
| 8. Dr. Max Bweupe              | PMTCT Specialist, MOH   |
| 9. Ms. Fales Mwamba            | Laboratory Specialist, MOH  |
| 10. Dr. Mabvuto KANGO          | HIV Specialist, Directorate of Public Health, MOH   |
| 11. Dr. Mutinta Phiri          | Paediatric ART Program Officer, MOH   |
| <b>(Chongwe DHMT)</b>          |   |
| 12. Dr. Charles Msiska         | Chongwe District Director of Health   |
| 13. Mr. Samba Muvuma           | TB/HIV Focal Person, Chongwe DHMT   |
| 14. Dr. Faith Chibeza          | ART Coordinator, Chongwe DHMT   |
| <b>(Mumbwa DHMT)</b>           |   |
| 15. Dr. Christopher Dube       | Mumbwa District Director of Health DHMT   |
| 16. Mr. Morris Mukololo        | Manager Planning and Development, Mumbwa DHMT   |
| 17. Mr. Nangana Kayama         | TB/HIV Focal Person, Mumbwa DHMT  |
| <b>(National AIDS Counsel)</b> |   |
| 18. Dr. Ben Chirwa             | Director General, National AIDS Council   |





# Integrated HIV and AIDS Care Implementation Project at District Level



*For the Health of the Community People in Zambia*

## (Project Experts)

- |                        |                          |
|------------------------|--------------------------|
| 19. Dr. Tadao Hayakawa | JICA Expert              |
| 20. Dr. Ikuma Nozaki   | JICA Expert              |
| 21. Mr. Kyo YOSHIDA    | JICA Expert              |
| 22. Dr. Norio YAMADA   | JICA Expert (Short Term) |

## (Terminal Evaluation Japanese Team)

- |                         |  |
|-------------------------|--|
| 23. Dr. Tamotsu Nakasa  | Terminal Evaluation Mission Term/JICA  |
| 24. Ms. Satuki Kunikane | Terminal Evaluation Mission Term/JICA  |
| 25. Ms. Akemi Serizawa  | Terminal Evaluation Mission Term/JICA  |
| 26. Mr. Ippei Matsuhisa | Assistant Resident Representative/JICA |

## (Terminal Evaluation Zambian Team)

- |                          |  |
|--------------------------|--|
| 27. Dr. Gardner Syakantu | Deputy Director, Clinical Care and Diagnostic Services,<br>MOH |
|--------------------------|--|

## (JICA Program Coordinator)

- |                     |                                  |
|---------------------|----------------------------------|
| 28. Ms. Motoko Seko | TB/HIV Program Coordinator, JICA |
|---------------------|----------------------------------|

## (Embassy of Japan)

- |                        |                                    |
|------------------------|------------------------------------|
| 29. Mr. Hitoshi Suzuki | Second Secretary, Embassy of Japan |
|------------------------|------------------------------------|

## (Project Secretary)

- |                    |                   |
|--------------------|-------------------|
| 30. Ms. Mary Banda | Project Secretary |
|--------------------|-------------------|

Period



## INPUTS: Counterpart Personnel

		March, 2009	
Position	Job Title	Counterpart Name	Assigned Period as Project Counterpart
1	Permanent Secretary, Ministry of Health	Dr. Simon Miti	From April 2006 to January 2009
2		Dr. Velepi Mtonga	From January to March 2009
3	Director, Directorate of Planning and Development, Ministry of Health	Mr. Davis Chimfwembe	From April 2006 to March 2009
4	Director, Directorate of Clinical Care and Diagnostic Services, Ministry of Health	Dr. Velepi Mtonga	From April 2006 to May 2006
5		Dr. James Simpungwe	From April 2006 to March 2009
6	ARV Coordinator, Ministry of Health	Dr. Albert Mwango	From May 2006 to March 2009
7	TB Specialist, Ministry of Health	Dr. Nathan Kapata	From May 2006 to March 2009
8	Laboratory Specialist, Ministry of Health	Ms. Fales Mwamba	From May 2006 to March 2009
9	PMTCT Specialist, Ministry of Health	Dr. Max Bweupe	From May 2006 to March 2009
10	Chongwe District Director of Health	Dr. Charles Misika	From May 2006 to March 2009
11		Others	Dr. Christopher Dube
12	Director, Provincial Health Office, Lusaka	Dr. Mary. Zulu	From May 2006 to March 2009
13	Director, Provincial Health Office, Central	Dr. Dickson Suya	From May 2006 to March 2009
14	Paediatric ART Program Officer	Dr Mutinta Nalubamba Phiri	From May 2008 to March 2009
15	Director-General, National HIV/AIDS/STI/TB Council	Dr. Ben Chirwa	From May 2006 to March 2009

## Zambian side operational expenses

## ACCUMULATED EXPENDITURE ON ART PROGRAMME FROM FEBRUARY 2007 TO DECEMBER 2008

## Operational Expenses (Allowance, Fuel, Servicing of Vehicle and Insurance)

## 1. From February to September 2007 (Source of data: Joint Mid-Term Evaluation Report, 11/Dec/2007)

Chongwe	ZMK	15,863,000 ①
Mumbwa	ZMK	39,377,000 ②

## 2. From October 2007 to August 2008 (Source of data: Joint Terminal Evaluation Report, 8/Oct/2008)

Chongwe	ZMK	50,017,800 ③
Mumbwa	ZMK	74,662,000 ④

## 3. From September to December 2008 (Source of data: Refer to the figure shown below for Mumbwa DHMT)

Chongwe	ZMK	18,188,000 ⑤(Estimation)
Mumbwa	ZMK	28,944,600 ⑥

MUMBWA DISTRICT HEALTH MANAGEMENT SCHEDULE OF ACCUMULATED EXPENDITURE ON ART PROGRAMME  
From September to December 2008

NAME OF ART CENTRE	No of VISITS	RATE	No of STAFF	TOTAL
LUNGOBE	8	50,000.00	5	2,000,000.00
NAMPUNDWE	9	50,000.00	5	2,250,000.00
MWEMBESHI	9	50,000.00	5	2,250,000.00
KAINDU	9	50,000.00	5	2,250,000.00
NALUBANDA	10	50,000.00	5	2,500,000.00
<b>Total</b>				<b>11,250,000.00</b>
<b>FUEL</b>				
LUNGOBE	8	5745	50	2,298,000.00
NAMPUNDWE	9	5745	80	4,136,400.00
MWEMBESHI	9	5745	70	3,619,350.00
KAINDU	9	5745	70	3,619,350.00
NALUBANDA	10	5745	70	4,021,500.00
<b>Total</b>				<b>17,694,600.00</b>
<b>MOTOR VEHICLE SERVICE</b>				
<b>Total</b>				<b>0.00</b>
<b>Grand Total</b>				<b>28,944,600.00</b>

Chongwe (①+③+⑤)	Total ZMK	84,068,800
Mumbwa (②+④+⑥)	Total ZMK	142,983,600
	<b>Grand Total</b>	<b>227,052,400 ZMK</b>

## Dispatch of Japanese Experts

## Long-term Experts

March, 2009

	Job Title	Name	Period
1	Project Coordinator/Community Participation	Katsunori SHIRAI (Mr)	20 Mar 2006 - 19 Mar 2008
2	Infectious Diseases Control/Health Planning	Tadao HAYAKAWA (Dr)	13 June 2006 - 13 April 2009
3	HIV/AIDS Care	Ikuma NOZAKI (Dr)	19 January 2007 - 02 April 2009
4	Project Coordinator/Monitoring	Kyo YOSHIDA (Mr)	03 March 2008 - 15 April 2009

## Short-term Experts

	Job Title	Name	Period
1	HIV/AIDS Care	Kazuhiro KAKIMOTO (Dr)	29 May -14 July 2006
2	Operational Research	Norio YAMADA (Dr)	18 November -02 December 2006
3	TB/HIV Control	Ikushi ONOZAKI (Dr)	18 February -01 March 2007
4	HIV/AIDS Management	Yutaka ISHIDA (Dr)	03 - 31 March 2007
5	Information Education Communication	Kazuaki SUMIDA (Mr)	24 September - 23 November 2007
6	PMTCT	Takanori Hirayama (Dr)	28 February -25 March 2008
7	HIV/AIDS Care	Hideki MIYAMOTO (Dr)	08 July - 02 August 2008
8	Operational Research	Norio YAMADA (Dr)	30 September - 12 October 2008

## INPUTS: Equipment

March, 2009

No.	Acquisition DD/MM/YY	Item (Type, Model)	QTY	Currency	Unit Price	Total Price	Allocation	Frequency of Use	Condition	Item of expense	Remarks
1	15/11/2005	Personal Computer (Laptop, Toshiba/Satellite A 60)	1	Kwacha	8,000,000	8,000,000	MOH Office	A	A	Carry-in	
2	22/03/2006	Vehicle (Ford EVELLEST/ 2500cc Turbo Diesel) Reg No. ABF6436	1	USD	24,000	24,000	MOH Office	A	A	Carry-in	
3	22/03/2006	Laser Printer (CANON, Laser Shot LBP5200)	1	Kwacha	5,500,000	5,500,000	MOH Office	A	A	Carry-in	
4	22/03/2006	Copy Machine (CANON, IR2020)	1	Kwacha	19,042,553	19,042,553	MOH Office	A	A	Carry-in	
5	07/07/2006	Vehicle (Ford EVELLEST/ 2500cc Turbo Diesel) Reg No. ABG6853	1	USD	26,000	26,000	MOH Office	A	A	Provision	
6	01/09/2006	Personal Computer (Laptop, Toshiba/A105-S4004)	1	USD	2,663	2,663	MOH Office	A	A	Provision	
7	01/09/2006	Data Projector (Sony VPL-ES3 with Screen)	1	USD	2,708	2,708	MOH Office	A	A	Provision	
8	12/01/2007	Desk-Top Computer (HP DX 2200 MicroTower, HP7540 CRT Monitor)	1	Kwacha	4,595,319	4,595,319	Chongwe DHMT	A	A	Provision	
9	12/01/2007	Desk-Top Computer (HP DX 2200 MicroTower, HP7540 CRT Monitor)	1	Kwacha	4,595,319	4,595,319	Mumbwa DHMT	A	A	Provision	
10	12/01/2007	UPS (MGE NOVA 600 AVR)	1	Kwacha	410,212	410,212	Chongwe DHMT	A	A	Provision	
11	12/01/2008	UPS (MGE NOVA 601 AVR)	1	Kwacha	410,212	410,212	Mumbwa DHMT	A	A	Provision	
12	29/01/2007	Vehicle (TOYOTA LandCruiser)	1	Kwacha	163,124,800	163,124,800	Chongwe DHMT	A	A	Provision	
13	29/01/2007	Vehicle (TOYOTA LandCruiser)	1	Kwacha	163,124,800	163,124,800	Mumbwa DHMT	A	A	Provision	
14	22/05/2007	CD4 counter (Becton Dickinson)	1	Rand	270,100	270,100	Chongwe DHMT	B	A	Provision	
15	21/02/2008	Heamatology Analyzer (Poch 100)	1	USD	9,760	9,760	Mumbwa DHMT	A	A	Provision	
16	21/02/2008	Bio-Chemistry Analyzer (Cobas C -111)	1	USD	22,890	22,890	Mumbwa DHMT	B	A	Provision	
17	18/03/2008	Reagents for Heamatology Analyzer (Sysmex)	1000	USD	3,087	3,087	Mumbwa DHMT	-	-	Provision	Consumables
18	18/03/2008	Reagents for Bio-Chemistry Analyzer (Roche)	2000	USD	13,413	13,413	Mumbwa DHMT	-	-	Provision	Consumables
19	22/01/2009	Bio-Chemistry Analyzer (Cobas C -111) and Reagents	1	USD	28,402	28,402	Chongwe DHMT	A	A	Provision	

Frequency of Use:

A/ Almost every day use

B/ Weekly basis use

C/ Concentrated use for certain times (In case of C, explain the reason in the remarks)

D/ 3-11 times per year (In case of D, explain the reason in the remarks)

E/ Not in use at present (In case of E, explain the reason in the remarks)

Condition :

A/ Good condition and well maintained

B/ Good condition

C/ Needs to be repaired

D/ Malfunction (Needs to be replaced)

## INPUTS: EXPENDITURE MADE BY JAPANESE SIDE

March, 2009

Item	FY-2006 (Apr 2006-Mar 2007)	FY-2007 (Apr 2007-Mar 2008)	FY-2008 (Apr 2008-March 2009)	Total
Construction	2,503,000	1,509,250	0	4,012,250
Maintenance of Equipment	17,660,200	10,085,280	18,391,166	46,136,646
Equipment and Materials	20,772,078	32,826,819	51,313,576	104,912,473
Consumables	54,862,650	141,020,708	140,442,461	336,325,819
Traveling Expense	106,603,548	80,960,030	95,054,250	282,617,828
Communication and Transportation	22,401,888	44,807,277	36,042,101	103,251,266
Material Printing	4,222,900	9,350,482	8,611,195	22,184,577
Office Rent	10,215,300	36,255,800	31,873,500	78,344,600
Training and Workshop	97,234,000	44,250,000	24,611,546	166,095,546
Allowance	58,872,580	120,779,970	137,295,140	316,947,690
Meeting Expencc	13,682,362	15,242,000	14,003,710	42,928,072
Others	17,716,363	19,972,770	18,562,399	56,251,532
Total in KWACHA	426,746,869	557,060,386	576,201,044	1,560,008,299
YEN Equivalent	14,215,684	16,521,069	15,417,700	46,154,453

## Chongwe DHMT

Project Purpose	Indicator	As of Q4 2008	Target
HIV and AIDS care services are improved and accessible at target districts	1 Cumulative number of HIV positive case detected by VCT/PMTCT	3,890	4,000
	2 Cumulative number of ART clients	1,554	2,300
	3 Percentage of defaulters within 6 months among ART clients	2%	Less than 10%
Outputs	1-1 Number of health facilities providing VCT service	24	29
	1-2 Number of health facilities providing PMTCT service	16	29
	1-3 Number of health facilities providing DCT service	28	29
	1-4 Number of health facilities applying Finger Pricking HIV testing method	24	29
	1-5 Annual number of HIV counselling and testing in VCT	7,526	3,500
	1-6 Annual number of HIV counselling and testing in PMTCT	6,428	4,000
	1-7 Percentage of HIV tested among TB clinic	80%	80%
	1-8 Percentage of HIV tested among ANC clinic	96%	80%
	2-1 Number of health facilities providing ART services	2 static	10 plus 4
	2-2 Number of health facilities which provide adherence counselling	24	20
2 Quality HIV care services are strengthened and scaled-up	2-3 Percentage of patients on ART who are screened by CD4 count testing for eligibility	100%	80%
	2-4 TB Treatment Success(TB Cure) rate	89%	85%
	2-5 Percentage of HIV positive TB patients who undertook CD4 test	100%	80%
3 DHMT's management capacities in HIV care services are enhanced.	2-6 Percentage of TB patients who are eligible and started ART	100%	80%
	3-1 Frequency of experience sharing meetings		Quarterly
	3-2 ORs conducted and shared at central level		yes
4 Lessons learned by the Project are incorporated into national guideline on mobile ART services.	4-1 Lessons learned by the Project are reflected in the national guideline on mobile ART services.		yes
	4-2 Number of monthly regular meetings		12

●: Data by the end of December 2008

\*: Data for Q4 2008 is required



## Mumbwa DHMT

Project Purpose		As of Q4 2008	Target	
HIV and AIDS care services are improved and accessible at target districts	1	Cumulative number of HIV positive case detected by VCT/PMTCT	7,000	
	2	Cumulative number of ART clients	3,500	
	3	Percentage of defaulters within 6 months among ART clients	16%	Less than 10%
Outputs	1-1	Number of health facilities providing VCT service	23	29
	1-2	Number of health facilities providing PMTCT service	23	29
	1-3	Number of health facilities providing DCT service	23	29
	1-4	Number of health facilities applying Finger Pricking HIV testing method	9	29
	1-5	Annual number of HIV counselling and testing in VCT	7,400	4,000
	1-6	Annual number of HIV counselling and testing in PMTCT	5,282	5,000
	1-7	Percentage of HIV tested among TB clinic	69%	80%
	1-8	Percentage of HIV tested among ANC clinic	62%	80%
1 Access to HIV counselling and testing is improved	2-1	Number of health facilities providing ART services	10	10
	2-2	Number of health facilities which provide adherence counselling	10	20
	2-3	Percentage of patients on ART who are screened by CD4 count testing for eligibility	100%	80%
2 Quality HIV care services are strengthened and scaled-up	2-4	TB Treatment Success(TB Cure) rate	82%	85%
	2-5	Percentage of HIV positive TB patients who undertook CD4 test	100%	80%
	2-6	Percentage of TB patients who are eligible and started ART	100%	80%
3 DHMT's management capacities in HIV care services are enhanced.	3-1	Frequency of experience sharing meetings		Quarterly
	3-2	ORs conducted and shared at central level		yes
4 Lessons learned by the Project are incorporated into national guideline on mobile ART services.	4-1	Lessons learned by the Project are reflected in the national guideline on mobile ART services.		yes
	4-2	Number of monthly regular meetings		12

●: Data by the end of December 2008

\*: Data for Q4 2008 is required

