

# **Improving ARV Medicines and Information Management in Ethiopia**

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*January 8–  
March 11, 2006*

*Technical Assistance  
Update and Trip Report*

Management Sciences for Health  
is a nonprofit organization  
strengthening health programs  
worldwide.



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Gabriel Daniel

*April 2006*



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## **About RPM Plus**

RPM Plus works in more than 20 developing and transitional countries to provide technical assistance to strengthen pharmaceutical and health commodity management systems. The program offers technical guidance and assists in strategy development and program implementation both in improving the availability of health commodities—pharmaceuticals, vaccines, supplies, and basic medical equipment—of assured quality for maternal and child health, HIV/AIDS, infectious diseases, and family planning and in promoting the appropriate use of health commodities in the public and private sectors.

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## ACRONYMS

ACT	artemisinin-based combination therapy
AIDS	acquired immunodeficiency syndrome
AMR	antimicrobial resistance
ART	antiretroviral therapy
ARVs	antiretrovirals
CDC	U.S. Centers for Disease Control and Prevention
COP	Country Operating Plan
CTO	Cognizant Technical Officer
CU	Columbia University
DACA	Drug Administration and Control Authority
DIC	Drug Information Center
DTC	Drug and Therapeutic Committee
ENAHPA	Ethiopian North American Health Professionals Association
EHNRI	Ethiopian Health and Nutrition Research Institute
EPA	Ethiopian Pharmaceutical Association
GFTAM (GF)	Global Fund for AIDS, Tuberculosis and Malaria
GOE	Government of Ethiopia
HAPCO	HIV/AIDS Prevention and Control Office
HIV	human immunodeficiency virus
INRUD	International Network for Rational Drug Use
IOM	Institute of Medicine
IT	information technology
JHU	Johns Hopkins University
JSI	John Snow Institute
MCH	maternal and child health
MDG	Millennium Development Goals
MIS	management information system
MoH	Ministry of Health
MSH	Management Sciences for Health
NGO	nongovernmental organization
OGAC	Office of the Global AIDS Coordinator
OI	opportunistic infection
PASS	Pharmacy Administration and Supply Service

PCU	Primary Care Unit
PHARMID	Pharmaceuticals and Medical Supplies Import and Wholesale Enterprise (parastatal)
PMTCT	prevention of mother-to-child transmission
PMIS	Pharmaceutical Management Information System
RHB	Regional Health Bureau
RLMA	Regional Laboratory Management Associate
RPM Plus	Rational Pharmaceutical Management
RPMA	Regional Pharmaceutical Management Associate
SOP	standard operating procedure
SCMS	Supply Chain Management System
SNNPR	Southern Nations, Nationalities and Peoples Region
STI	sexually transmitted infections
TB	tuberculosis
TOR	Terms of Reference
UNICEF	United Nations Children’s Fund
USAID	U.S. Aid for International Development
USP	United States Pharmacopeia
VCT	voluntary counseling and testing
WHO	World Health Organization

## **BACKGROUND**

Rational Pharmaceutical Management (RPM) Plus Program/Management Sciences for Health (MSH) collaborated with U.S. Agency for International Development (USAID)/Ethiopia to provide technical assistance in pharmaceutical, laboratory, and related commodities management for Ethiopia's Mother to Child HIV Prevention Initiative and the President's Emergency Plan for AIDS Relief.

RPM Plus is working with other USAID-funded partners in this program to develop national, regional, district, and health facility-level capacity for delivery and management of prevention of mother-to-child transmission (PMTCT) and antiretroviral therapy (ART) products.

Under this effort, RPM Plus will assist in ensuring access to and rational use of basic PMTCT/ART and related products through various interventions including training, development of standard operating procedures, upgrading of infrastructure and promoting improved commodities procurement, management, and inventory control systems.



## PURPOSE OF TRIP

RPM Senior Program Associate Gabriel Daniel traveled to Addis Ababa, Ethiopia to provide technical assistance in pharmaceutical, laboratory and commodities management of ARVs. Mr. Daniel participated in the design and writing of the implementation plan of the health commodities management master plan for the Ministry of Health (MoH), and worked with RPM Plus information technology (IT)/management information system (MIS) specialist in scaling up electronic MIS.

### Scope of Work

- Assist in the recruitment and orientation of new staff
- Assist the country office in follow up of ARVs management at Regional Health Bureaus (RHBS), Pharmaceuticals and Medical Supplies Import and Wholesale Enterprise (PHARMID) branches and target facilities, renovation of pharmacy structures, storage, and use of the standard operating procedures (SOPs) Pharmaceuticals and Medical Supplies Import and Wholesale Enterprise MIS forms
- Help demonstrate a comprehensive electronic pharmaceutical software (Orion) for procurement, distribution, and inventory control at national and regional levels to key partners including USAID, the U.S. Centers for Disease Control and Prevention (CDC), Pharmacy Administration and Supply Service (PASS), Drug Administration and Control Authority (DACA), and PHARMID
- Assist in the initiation of collaborative activities with the School of Pharmacy at the Addis Ababa University and the Ethiopian Pharmaceutical Association (EPA)
- Discuss with the country office and partners on potential ART complementary activities such as antimicrobial resistance (AMR), Drug and Therapeutic Committees (DTCs), Drug Information Centers (DICs), and quality control follow-up to the U.S. Pharmacopeia (USP) visit
- Assist in coordinating and planning of distributing, installing and training in computer programs for target facilities
- Discuss needed technical assistance with PASS, Ministry of Health (MoH), and HIV/AIDS Prevention and Control Office (HAPCO) on needed technical assistance
- Brief USAID on current trip as requested

## **Update, Observations, and Comments**

Key program activities highlighted in this report will address the objectives set in the country operating plan (COP) 2006. Features of this round of COP will be consolidation of prior year accomplishments, fine-tuning, scale-up, quality assurance, sustainability, and institutionalization.

The pharmaceutical and laboratory-related recommendations of the ART Consultative Team that will involve RPM Plus were taken into consideration when developing both COP 2005 and COP 2006.

Although isolated renovations are undertaken in most target facilities, these are only interim measures to kick off the program. With increased uptake and increased inventory, there is need to embark on a systematic expansion work for ARV and related medicine and equipment storage such as tuberculosis (TB) and malaria medicines, and lab reagents and kits at main pharmacy stores and hospitals and health center dispensaries. The current storage condition is deficient and can not be fixed with simple renovation. Most of the hospital drugstores are not appropriately located and not furnished with the basic materials.

## **New RPM Plus/MSH Office**

Because of the expanded role RPM Plus/MSH is playing in ARV medicines procurement and management and increased staff number, it has moved to larger offices that include training/conference room and adequate parking.

## **The ART Consultative Team**

The purpose of the consultation was to assess the national ART program and provide recommendations about how the United States should assist the Government of Ethiopia (GOE) in implementing its program. The Consultative Team, which met on August 1–10, 2005, included about 20 people with a variety of backgrounds and expertise, half of whom were consultants from outside of Ethiopia (representing the Office of the Global AIDS Coordinator [OGAC], USAID, CDC, Columbia University, Johns Hopkins University (JHU), and RPM Plus). During the 10-day consultation, the team was briefed about the current status of Ethiopia's ART program, met with major stakeholders participating in the program, especially the GOE, and visited hospitals and health centers throughout the country.

## **Site Visits**

During the trip, 24 facilities (of which 22 were hospitals) involved in ART services were visited. The purpose of the visits was to review progress in all program aspects and provide recommendations for addressing identified constraints in meeting program targets. The hospitals were divided into two cohorts—the first cohort started ART free service in March 2005 and the second cohort started free ART in September 2005. Eight hospitals were in the first cohort, and 14 were in the second that invariably demonstrated that they were not ready to begin the program.

## **COP 2006 WORKPLAN**

The objectives of COP 2006 were to follow-up and build on the prior year activities. The RPM Plus team worked on drafting and submitting the workplan for COP 2006 which included USAID comments. The major changes in COP 2006 are related to procurement of ARVs which will be undertaken by Supply Chain Management System (SCMS) instead of MSH. However, technical assistance will continue to be provided by RPM Plus. The other major change is that all second-line and pediatric ARV medicines with a small quantity of first-line medicines for safety stock will be purchased with U.S. funds while the majority of first-line medicines will be procured with GFATM funds.

The component objectives of COP 2006 are as follows—

1. Coordinate technical activity for ARVs and related commodities supplies management
2. Distribution and Management of ARVs and Related Commodities through PHARMID in collaboration with PASS, MoH, HAPCO, DACA and Regional Health Bureaus (RHBs)
3. Improve infrastructure of pharmacies and PMTCT sites, and provide necessary equipment
4. Improve quality assurance of ARVs and related commodities
5. Strengthen pharmacy human resources capacity
6. Improve medicine supply management system

The following procurement will be done through SCMS with technical assistance from RPM Plus/MSH.

- Second-line ARVs for 3,200 adults
- First-line ARVs for 5,250 children
- First-line ARVs for 8,000 adults as safety stock
- Second-line ARVs for 250 children

### **Harmonization of Procurement and Distribution of ARVs and Related Products**

The ART Consultative Team strongly recommended that—

- The two-channel distribution mechanism (one by PASS and another by RPM Plus/PHARMID) be integrated into one through an agreement among PASS, RPM Plus, PHARMID, and the RHBs. One distribution mechanism will be more efficient and accountable, and avoid facility-level management and reporting difficulties.

- The distribution system should also include opportunistic infection (OIs) medicines and voluntary counseling and testing (VCT) and PMTCT products. PASS and RHBs should be intimately involved and play an ownership role.
- Estimates of order quantities of ARVs, OI medicines, and test kits be evidence-based and take into consideration the number of persons who will be on first-line, second-line, and pediatric medicines, and projected expansion.
- As adequate and uninterrupted supplies of ARVs are procured by the Emergency Plan and the GFATM, it is important to forecast current needs and project for expansion and scale-up jointly with the parties concerned.

### **ARVs Procurement and Availability**

- There is currently adequate supply of all the approved ARVs in country to meet the national guideline treatment requirements, which is 100,000 patients by the end of 2006.
- The last procurement included all the first-line adult and pediatric formulations as well as second-line medicines included in the national guideline, except for abacavir.
- There are 11 ARV formulations for children and 13 formulations for adults. Of these, six are second-line preparations.

**Table 1. ARVs Procured for Adults and Children by the Emergency Plan in Ethiopia, 2005**

<b>ARVs Class</b>	<b>Adult Formulations</b>	<b>Pediatric Formulations</b>
NRTIs	Lamivudine (3TC) 150mg Zidovudine (ZDV) 300mg Stavudine (d4t) 30mg & 40mg *Didanosine (ddl) 100mg, 250 mg, 400mg (250 mg/400 mg not yet available) Combivir fdc (ZDV+3TC)	Lamivudine (3TC) 50 mg/ml Zidovudine (ZDV) 10 mg/ml & 100mg Stavudine (d4t) 1 mg/ml & 20mg *Didanosine (ddl) 25 mg & 2G pdr
NtRTIs	*Tenofovir (TDF) 300 mg	NA
NNRTIs	Efavirenz (EFV) 200 mg Nevirapine (NVP) 200 mg & 600mg	Efavirenz (EFV) 30m g/ml & 50mg Nevirapine (NVP) 10 mg/ml
PIs	*Indinavir (IDV) 400 mg *Lopinavir/Ritonavir (LOP/r) 166.6 mg *Nelfinavir (NFV) 250 mg	*Lopinavir/Ritonavir (LOP/r) 100 mg/ml

\* Second line ARVs  
Source: RPM Plus

The procurement with the Emergency Plan funds is executed by RPM Plus. All the products are U.S. Food and Drug Administration approved. MoH uses GFATM resources to procure ARVs

and uses UNICEF to place the orders from external suppliers. The products are cleared, warehoused, and distributed by PHARMID, the parastatal medical stores with seven modular warehouses in the regions. GFATM-procured ARVs are cleared and stored by MoH/PASS and distributed to health facilities through RHB stores. The hospitals therefore have two sources of medicines and there is limited coordination between the two systems/channels. With an official request from the MoH, all ARVs in the custody of PASS will be moved to PHARMID so that distribution will be managed by RPM Plus in collaboration with PASS in harmonized manner.



## ART UPTAKE AND ACCESS TO ARVS

- As of mid-March 2006, there were 24,400 patients on ARVs of which 975 were children. Figure 1 shows the number of persons receiving treatment on a monthly basis as at mid-February 2006. Figure 2 shows the number of persons receiving ARVs broken down by regions of the country.
- Sixty percent of adult and pediatric patients are enrolled in eight hospitals—Zewditu, ALERT, Bahrdar, Tikur Anbessa, Paulos, Adama, Mekelle, and Dessie.
- Shortage of ARVs has not been noted as a concern. ARVs are available from the Emergency Plan and PASS at all hospitals without interruption. .
- Several facilities reported a shortage or overstock of certain ARVs because of preferences of different regimens by different physicians. To tackle this problem, RPM Plus has provided regional pharmacy associates to move products between facilities to ensure that the ARVs are used before they expire.

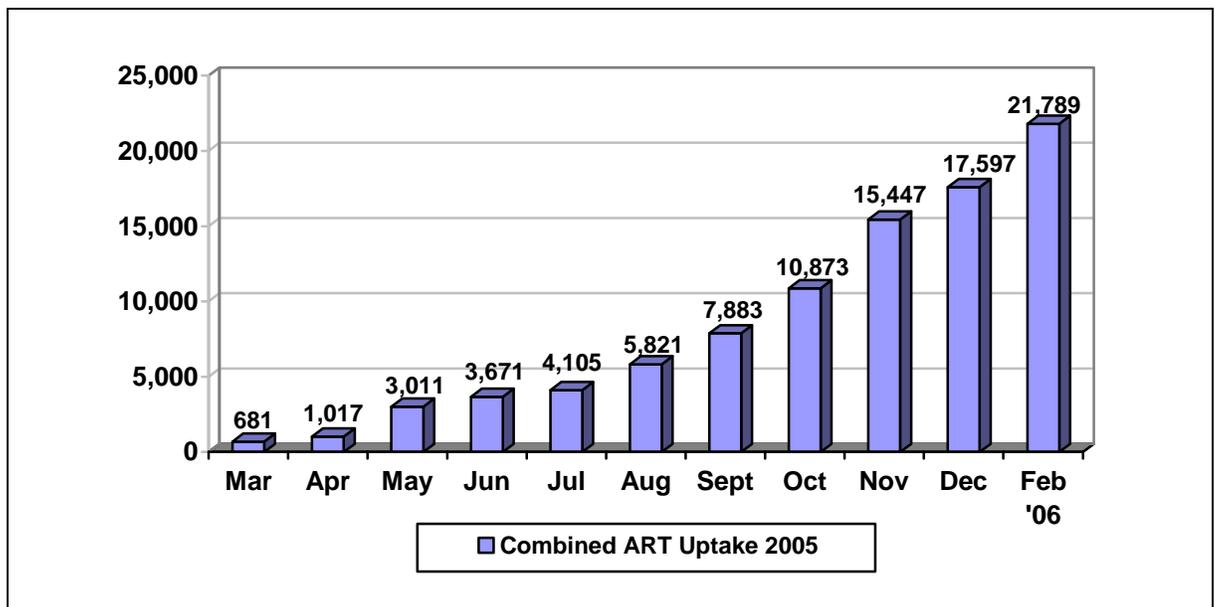


Figure 1. Number of persons on ARVs by month

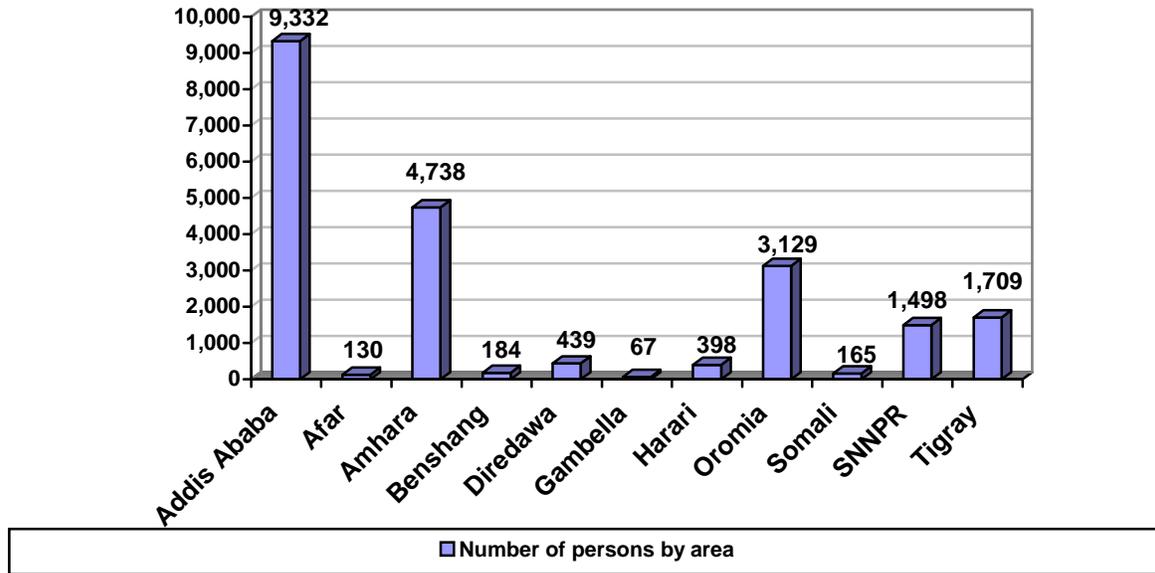


Figure 2. ARV use from Emergency Fund and GFATM sources in Ethiopia, February 2006

### OI Medicines Storage and Dispensing

OI medicines are critical for HIV/AIDS patients who should be their primary beneficiaries. HIV/AIDS patients should not compete for OI medicines with general patients. As medicines supplied by GFATM for a specified purpose, it is perfectly rational to keep OI medicines separate from general medicine stores. However, the problem has been that the OI medicines such as cotrimoxazole, amoxicillin, penicillin, etc., are put in the main out-patient pharmacy to be prescribed to the general patient population. Since there is a high demand for these medicines, they are usually out-of-stock and ART patients with OIs are often unable to fill their prescriptions. In patients taking ARTs, OIs progress faster and are more severe than in the general patient population, so there is an urgent need for ART patients to have ready access to OI medicine and hence the rationale for separating these medicines for ART patients. When OI medicines are kept in the general out-patient pharmacy, ART patients have to travel to the out-patient general pharmacy and wait in line, which becomes an extra burden.

Currently, it is reported that PASS is distributing OI medicines. There is no uniformity in the supply or use of OI medicines. There is no guideline or register to monitor their use. In some facilities, OI and ARV medicines are stored in the same area and dispensed exclusively to ART patients from the same place. Having OI medicines in the ART pharmacy will help the patient get counseling and medicines from the same place where they get their ARVs.

### ARV Medicines Dispensing and Counseling

Three different models were observed during the visit. The most commonly encountered one is where patients are counseled by the pharmacist and dispensed the ARVs right in the dispensing room. There is a lockable storage cabinet and/or shelf where medicines are kept for dispensing.

Another model is where the patients are counseled and ARVs dispensed from the booths not making a difference between patients who come for ARVs or other medicines. The third form is where all patients are all called to the pharmacy counseling room and group counseling is conducted, then medicines are dispensed. This system has worked well because the patients have similar regimens and receive similar instructions. The other advantage is that people share their experiences as the group adherence counseling is done

Patients are concerned about the large number of packs/boxes of medicines, especially pediatric syrups and multi-month supplies that they have to carry; so the patients usually come with plastic bags to carry these bulky supplies. In addition, people are removing the bottles from their original boxes and throw them around the pharmacy to avoid being identified as people with HIV/AIDS. This occurs more frequently after a TV spot for public education on HIV/AIDS showed the boxes on screen and people started associating the boxes with the patients.



**Empty boxes of ARV medicines left near an ART pharmacy**

### **Pharmacy Management Information System (MIS)**

Ethiopia's existing record keeping and inventory control system is weak. The pharmacy professionals spend a lot of time in recording prescriptions on treatment registers. The ART medicine MIS has its own critical data needs that will be extremely useful for procurement forecasting and quantification, selection of regimens, monitoring stock status, tracking expiry, tracking prescription refills and defaulting, switches due to toxicities or side effects, and adherence. The increasing number of patients is now making it impossible for the technical staff to continue completing these forms without compromising their technical responsibility of filling prescriptions, counseling patients on ARVs, and doing all their other tasks. RPM Plus in collaboration with MoH and DACA developed an ARV medicines SOP and standard forms for patient and ARV management.

Based on these facts, the ART Consultative Team recommended that—

- The recently introduced SOP and its forms and tools for ARV drug management for inventory management, treatment register, expiry monitoring, patient tracking, indicator-based monthly auditing, reporting, and other tasks be officially used in all facilities. We also recommend that monthly reports be prepared by the facilities and sent formally to the RHBs, PASS, MoH, and donor agencies.
- A data management unit at the MoH or through a partner responsible for providing technical assistance should aggregate the global data for use by the relevant offices.
- Use of computerized MIS for ARV medicines be implemented as soon as possible at each facility, and USG-funded partners should ensure such a system is initiated and monitored at each facility.
- In addition to the facility-level drug information system, national and regional level electronic medicine MIS tools be implemented to support PASS, RHBs, and PHARMID in managing procurement, pricing, tendering, storage, distribution, inventory management, and reporting.

The critical forms such as the treatment register, patient treatment sheet, bin and stock card, monthly reports are being used effectively.

### **Current Status of ARV Medicines MIS**

In collaboration with the MoH and DACA, RPM Plus developed SOPs to guide the use of different tools for tracking ARV medicines use and inventory management at facility level (and at store level where applicable). Similar effort has gone into the development of PMTCT SOP and tools for monitoring patient use and stock status.

The SOP and forms are now used at national level at all President's Emergency Plan and GFATM/MoH hospitals. The SOP is used as a training material.

The initial set of SOPs, forms, and register books are printed by RPM Plus and made available to all Emergency Plan and GFATM/MoH sites after training the staff in their use.

### **SOP Forms**

The key tools for data capture include—

- ARV medicines and patient information sheet
- Dispensing register
- Monthly activity report

These are supplemented by—

- Various summary forms
- Patient tracking chart
- Expiry date tracking chart
- Expiry and damage inventory sheet
- Stock movement/bin/stock cards
- Receiving discrepancy reporting form
- Ordering and receiving form
- Monitoring and feedback report

### **Reporting**

Facilities provide biweekly uptake and monthly comprehensive patient and stock status reports to RPM Plus using the various data forms. RPM Plus shares the information with all relevant partners.

Initially, weekly data for number of persons treated on a weekly basis is collected by calling in from or to the reporting facilities. The weekly reports are either faxed or mailed to RPM Plus. This information is aggregated and shared on a weekly basis with the partners.

Report forms include such parameters like number of patients, their sex, age, and weight; source of patients, patients lost to follow-up or deceased; types and numbers of ARVs used by regimen; and individual medicines, expiry date, and stock status.

Monthly reports are received in provided reporting format from each facility. The pharmaceutical management associates fielded by RPM Plus in regions make sure that the basic forms are completed correctly and reports sent on schedule. At RPM Plus office, electronic folders are created for each facility and on receipt of the monthly reports, the folders are updated. Each facility's folder will have the monthly report and aggregate by month. This allows access to the monthly or the cumulative totals of person receiving ARVS. This process is now being turned over to the facilities and regions so that the system is sustained by the owners of the program

### **Computerized Pharmacy MIS**

The manual individual patient sheet, monthly report and stock inventory forms are computerized. The computers will be loaded with the RPM Plus developed software for ARVs and patient management at pharmacy level and on site training will be provided by RPM Plus IT/MIS officer. The computerized system is being piloted in three hospitals (Zewditu, Paulos, and Police). The system is planned to be scaled up to the hospitals which are ready to computerize the system.

## **Computers and Printers for Hospitals**

RPM Plus is providing computers to all the supported facilities so that the facilities will use electronic forms and report using the internet where the service exists. RPM Plus has an IT/MIS staff who will install the tool on the computers and train the facility staff on how to use the system.

Pharmacy data clerks are being recruited by RPM Plus and seconded to the hospitals that have high load of patients. Pharmacy staff and data clerks will be trained in the use and care of computers. The necessary space and furniture will be provided to the facilities. To maintain inventory management at hospital main stores and regional pharmacy services, additional computers will be made available.

During this phase, computers and printers will be distributed according the following plan.

Regional Health Bureau Pharmacies	8
Hospital Pharmacies	17
RPM Plus Office and Pharmacy Associates	10
DACA/Quality Control Laboratory	2
School of Pharmacy	1
Ethiopian Pharmaceutical Association	1
PASS	1
<b>Total</b>	<b>40</b>

## **Telephone/Internet Services in Pharmacies**

Most of the hospital pharmacies do not have telephone connections. Telephone service at the pharmacy is important for getting weekly or biweekly uptake information, for ordering ARVs, and for tracking patients who miss their appointments. Internet service is needed for networking pharmacies with regional or central level databases, transferring stock and uptake information instantly, for updating technical information, and providing a source of pharmaceutical information for patients and professionals. RPM Plus will cover expenses for the installation and set-up of telephones and Internet service, and pay for a fixed monthly use until the facility makes provision for such recurrent expenses.

## **ORION@MSH Software for Pharmaceutical Stock Management**

ORION@MSH is an integrated software program developed specifically for pharmaceutical stock management. Its six interlinked modules (inventory, procurement, sales, warehouse, accounting, and logistics management) combine to support nearly all aspects of medical stores management, including the key decisions of what, when, and how much to order.

RPM Plus arranged for a two-person team (Stephen Reed and Anupam Chandra) to visit Ethiopia to demonstrate ORION@MSH to PASS and PHARMID, and discuss it with key senior staff. Both organizations expressed interest in getting the software installed and used in their respective organizations. The team felt that PHARMID already has newly developed customized

software which had several features that met the needs of PHARMID's operations. In the case of PASS, since there is no functional system it was felt that there will be a need to introduce the system. The next step is to get data from PASS to enter into the system and conduct a second visit to install and train staff in its use.



## INFRASTRUCTURE

As corroborated by the ART Consultative Team, the storage space available at many medical facilities is deficient, and may lead to ineffective or dangerous medicines when stored improperly. Laboratory reagents, test kits, and some ARVs require cold storage, but the cold storage at most facilities is inadequate. The storage facilities at the central and regional levels of the public sector are also inadequate. Most of the facilities have expired medicines, and obsolete and unusable equipment that are occupying storage space, and the disposal process is very slow. Even if the process is speeded up, a safe and efficient disposal system for the reagents and medicines, which require special handling, does not exist. The current renovation work in the pharmacies funded by the U.S. Government or GFATM is a stop-gap effort to tackle the immediate need. Unless a substantial improvement and increase is undertaken in the immediate future, the existing infrastructure can not handle the anticipated scale-up with large volume of ARVs and related products and increase in manpower.

The ART Consultative Team recommended that all ART facilities be provided with adequate space, proper conditions, furnishings, and equipment, including refrigerators for properly storing ARVs. The focus of the infrastructure should be the main pharmacy store, where ARVs and related products are stored, and the dispensing pharmacy, where mini-stock is maintained, counseling conducted, dispensing made, and records kept.

Specific steps include—

- Strengthen the capacity and improve the conditions of regional stores
- Provide space in at the 126 hospitals and 450 health centers participating in the national ART program for clinical exam rooms, VCT rooms, a laboratory, a pharmacy that includes a storage room for medicines, offices for data management staff, and waiting rooms. The space should be contiguous within each facility to facilitate patient flow and promote efficient use of staff, and large enough to accommodate the ART target for that facility in 2008.
- Standardize the design for each of the four levels of service (VCT/lab, ART clinic, pharmacy, and data management) in consultation with the engineering unit of the MOH, RHBs, and the partners, and taking into consideration the technical and financial advantage of having a contiguous space for an ART clinic, a pharmacy, and laboratories.
- Develop and implement a system to help dispose of all expired and obsolete equipment in clinic facilities.

### **Current Status: Renovation and Provision of Furnishings**

As of mid-March 2006, there were 38 health facilities (26 hospitals, 11 health centers, and 1 quality control laboratory) renovated. The renovation included creating space for confidential counseling and dispensing, improving the out-patient pharmacy, expanding and fixing up the

main hospital drugstore, providing incinerators at some locations, helping expand laboratories, and providing privacy dispensing booths for pharmacies. In addition, the facilities acquired furniture for the counseling and dispensing room, shelves, lockable storage cabinets, and filing cabinets. Booths were provided to all the first cohort of hospitals.

The storage and space situation in the newly initiated hospitals is poor, therefore, action is being taken immediately to make them ready for providing ARV services. The newly included ART facilities are being assessed so that they will be provided with the basic materials to conduct their activities effectively. RPM Plus will place orders for shelving, storage units, and furniture for the target facilities to improve storage condition, inventory control, and security of program-provided resources. About ten hospitals have already adopted the design and started constructing the ART Unit recommended by the Consultative Team (shown in Figure 3) with funds allocated to them by GFATM for renovation.

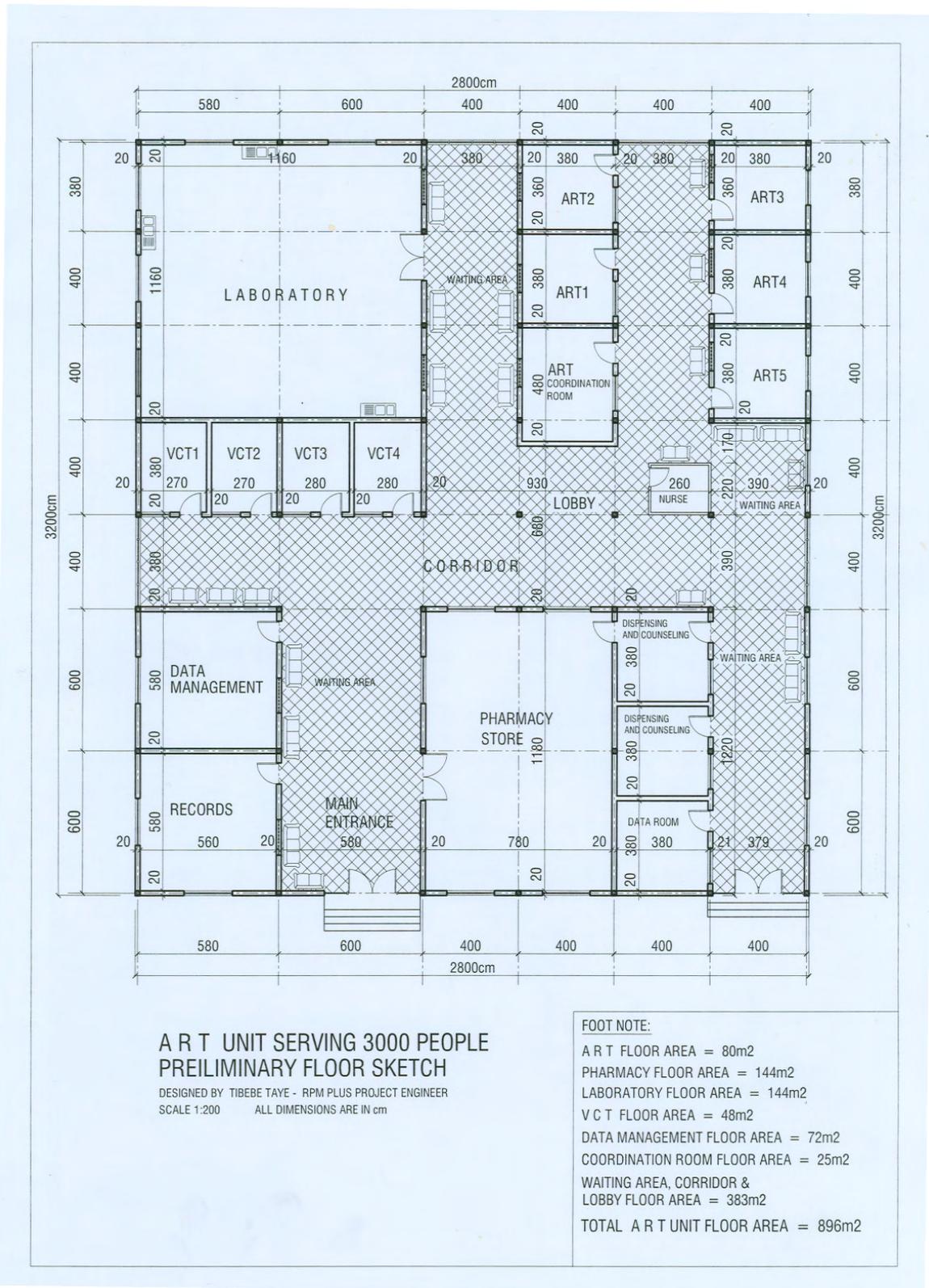


Figure 3. ART Consultative Team Design for a Comprehensive ART Unit



## HUMAN RESOURCES

There is generalized shortage of pharmacy professionals, including pharmacists, pharmacy technicians and pharmacy assistants. Several hospitals have only druggists or pharmacy technicians. The rapid expansion of the private pharmaceutical sector (manufacturing, private hospitals, and import/distribution), and their offer of attractive salary packages make employment in the public sector unattractive. There is also a high turn-over, and retention is very low, leading to diminished sustainability and institutional memory. Existing staff in facilities are already over-stretched with routine pharmacy service. The pharmacy professionals in the private sector are usually the first contact for people with various illnesses, mainly sexually transmitted infections (STIs) and respiratory tract infections. Although private pharmacy professionals are located in all communities, their role in advising and referring patients is limited, due to lack of ART training and involvement in the national ART program.

To address the human resource issues, the ART Consultative Team recommended that the number of pharmacy professionals be increased to meet the growing demand. Each facility needs have a pharmacy staff adequate for expected patient load in 2008, that is, 100-200 patients for health centers, and 500, 1,500, and 3,000 or more for hospitals. Pharmacy-related recording should be handled by support staff who can be trained as pharmacy clerks and are capable of entering data on the computer. A system of upgrading the lower echelons of pharmacy professionals in ARV management must be a priority to increase manpower in the short term.

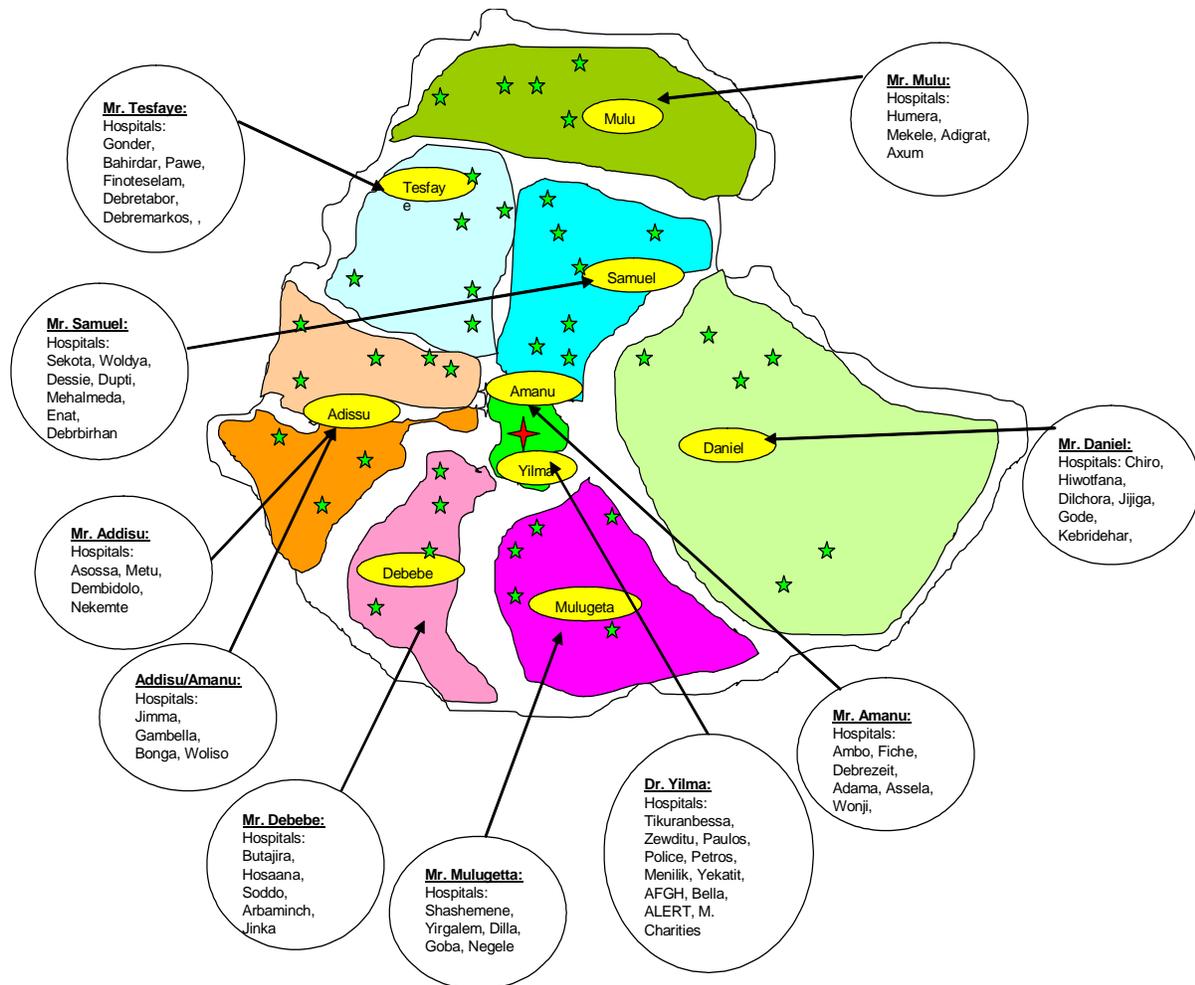
Other recommendations included that the School of Pharmacy conduct a series of courses for druggists, pharmacy technicians, and pharmacy assistants. The EPA should also provide continuing education in ART and how to counsel patients, sessions on raising public awareness, and on how to advise patients to seek further assistance from hospitals. Drug Information Centers (programs currently being piloted by Drug Administration and Control Authority [DACA]) should be strengthened, and reference materials and Internet connections for professionals be supported in all hospitals where ART is provided. The implementation of retention strategies for pharmacy professionals, such as, scholarships, improvement in working environment (e.g., providing proper furniture, telephone, and computers), and recognitions for performance (e.g., bonuses, certificates, and salary increases) be supported.

### **Current Status**

Realizing the constraints in manpower, RPM Plus employed pharmacy and other professionals to support the activities under the program. These experienced pharmacy professionals are working in the regions to ensure medicine distribution and to assist the regional health bureaus and health facilities in training, support supervision, stock status, and use monitoring and reporting. The geographic distribution of the professionals assigned in the regions is shown in Figure 4. The new staff consists of six pharmacy associates and a communication officer. All staff, new and existing, were brought together and given a three-day orientation on February 20–23, 2006, at the RPM Plus conference hall. They were also taken around to selected hospitals to observe the ART pharmacy services in action. To provide an overview of Ethiopia's HIV/AIDS status,

USAID’s Dr. Omer Ahmed, the cognizant technical officer to RPM Plus, spoke to the group on USAID and the Emergency Plan in Ethiopia.

Several facility-level pharmacy professionals have been trained in pharmaceutical supply management and MIS. To date, about 400 pharmacy professionals working in hospitals and health centers have been trained locally. RPM Plus has also trained more than 20 pharmacy professionals have benefited from training in HIV/AIDS, malaria, and TB medicine management and rational medicine use in Kenya, Uganda, South Africa, and Tanzania.



**Figure 4. Geographic Positioning of RPM Plus Pharmacy Associates to Provide Technical Assistance to Regions and Targeted Health Facilities**

### **EPA Training Workshop for Pharmacists in the Private Sector**

One of RPM Plus’s objectives in Ethiopia was to work with the Ethiopian Pharmaceutical Association (EPA) to promote awareness in ART to the membership and public. RPM Plus is

supporting the association in its efforts to increase the knowledge and skills of the membership on how to raise public awareness of and advise the public on HIV/AIDS., RPM Plus provided heavy duty printer/copier, computer, scanner, and LCD projector to help EPA with its awareness activities. The association also received a set of current set of pharmacy/AIDS related books for their library.

Mr. Gabriel gave the opening speech of the first in a series of training workshops organized by EPA for about 45 pharmacists working in private pharmacies in Nazreth on March 1, 2006. The four-day training had speakers from academia, DACA, MOH/HAPCO, and NGOs. This is the first time the pharmacists working in the private sector have been given education on HIV/AIDS care, support and treatment. They were also given an overview of work done by RPM Plus under the Emergency Plan program.



**Partial view of EPA training participants**

### **Optimizing ART: Current Status and the Way Forward**

One year after Ethiopia began its free ARV medicines program, several issues arose that needed to be discussed and consensus reached to optimize the service. RPM Plus, in collaboration with DACA and HAPCO, organized a series of workshops for physicians, pharmacists, and nurses of the treatment team. The first and second workshops were held in Nazreth on February 24–25 and March 10, 2006. One major issue was factors affecting ART prescribing behavior including the number of ART physicians and pharmacy professionals, patient load, laboratory services, availability of medicines, and the existence of a facility prescribing audit system. Other issues included physician-related factors such as current information on ARV prescribing and peer influence, and patient-related factors such as suitability of a regimen to a given patient, or patient drug preferences.

Also discussed was what is being done (or is not being done) with regard to team work—communication between pharmacy and clinic, lab and clinic, lab and pharmacy, and among nurses, prescribers, and dispensers. Other meeting topics included HMIS and the quality of ART service delivery with the ART scale-up and prescribing second-line and pediatric ARV

medicines. Four main areas (factors affecting prescribing behavior, team work and communication, quality of ART service, and ART scale-up) were selected for group work and recommendations made how to address constraints in these areas.



**Partial view of ART Optimization workshop participants**

### **Reference Books for ART professionals**

Two shipments of pharmaceutical and HIV/AIDS related reference books have been provided by RPM Plus to increase access to current information. The range of books included 150 books of *Managing Drug Supply*, 50 sets (with 9 modules per set) of pocket size ART booklets (covering topics such as HIV/AIDS disease, ARV medicines, nutrition, adherence, resistance, laboratory tests, terminology), AHFS medicine information, medicine safety, pediatric dosage, infectious disease handbook, medicines in pregnancy, essentials of supply chain, handbook of logistics and distribution, *Sanford Guide to HIV/AIDS Therapy*, etc. In collaboration with DACA, the books have been delivered to professionals working in selected ART sites. The primary beneficiaries are pharmacy professionals, Drug and Therapeutic Committees (DTCs) and Drug Information Centers of target health facilities.

## QUALITY CONTROL INITIATIVE

In response to a request from the Drug Administration and Control Authority (DACA) to assist in quality control of medicines with emphasis on ARVs, RPM Plus with funding from the Emergency Fund Ethiopia has been providing technical assistance in the area of overall medicine quality assurance.

Following a joint review of quality control work at the laboratory by USP and RPM Plus, there were non-technical challenges that needed to be addressed as preparatory for an eventual technical support from USP. It was with this in mind RPM Plus took the initiative to address these areas. A total of 18-person-months of quality control specialists has been provided in the form of secondment and consultancy to help in training, development of SOPs, and hands-on lab techniques. Currently, a manual for lab use has been developed and is under review. Reference books, computers, and printer are provided to strengthen knowledge base and internet access. Two copies of the current USP *National Formulary* have been provided by USP.

During the visit, a number of renovations funded through RPM Plus support were observed, including—

- Renovating and expanding rooms for storage of reagents and reference standards
- Improving the weighing room
- Whitewashing
- Installing safe electrical outlet systems
- Organizing the reference room
- Providing thermohygrometers
- Installing airtight doors to a microbiological analysis room
- Constructing an incinerator
- Constructing a generator house and air exhaust for flame photometer

The next steps in the capacity building is to make cold chain equipment available for reagents and sensitive standards and samples that require cold storage. An RPM Plus MIS specialist is in the process of developing a user-friendly software to computerize data on clients, drug samples being submitted for analysis, inventory, and for generating reports

To support DACA's plan of medicine quality surveillance at regional levels, RPM Plus is planning to introduce the use of the German Pharma Health Fund-Minilab<sup>®</sup> kits system at regional level for monitoring quality of ARVs and medicines for OIs. To reinforce these initiatives, RPM Plus collaborated with USP to review the quality control needs of ARVs, TB, and malaria medicines, and ensure that their analysis and control is done according to prescribed norms.

### **AMR Assessment and Formation of Working Group Initiated**

Responding to a formal request from DACA, RPM Plus staff Mohan Joshi and Maria Miralles organized an AMR containment stakeholders' meeting on March 2, 2006, at Hilton Hotel in

Addis Ababa. The meeting discussions indicated that AMR is a potential problem and there is no concerted action for containment. A total of 25 stakeholders attended the meeting, representing DACA, MoH, WHO, USAID, CDC, RPM Plus/MSH, U.S.-based universities, Ethiopian Health and Nutrition Research Institute (EHNRI), School of Pharmacy, EPA, Ethiopian Public Health Association, International Network for Rational Use of Drugs/Ethiopia, and Ethiopian Pharmaceutical and Medical Supply Manufacturer Association.

There was consensus that a working group (champion group) would be required to spearhead the AMR advocacy and containment process in Ethiopia. The participants decided to form a working group that will draw up terms of reference (TOR). Then, a larger stakeholders' meeting will be held three months later to formulate action points and form a standing group that will work on advocacy and other activities to increase awareness, promote actions to contain AMR, and promote information sharing.

The meeting concluded with the following two consensus-based recommendations—

- The interim AMR working group will come up with its own TOR within the next month (by April 2, 2006), and DACA will circulate the draft to the meeting participants for feedback/comments.
- The working group will take the lead in organizing a large stakeholders' call-to-action meeting in about three months (by June 2006). In this meeting, all of the stakeholder groups that are affected by AMR or those who can contribute to its advocacy and containment will be invited.

## **LOGISTICS MASTER PLAN**

The MoH is in the process of developing a Logistics Master Plan for pharmaceuticals. UNICEF and JSI/Deliver have been key participants in the exercise and RPM Plus has been involved in meetings and participated in the assessment phase. Several groups have been involved in the initial design and currently, a consultant is engaged in finalizing the master plan. Part of the process involved a tour by a group of MoH, RHB, PASS, and PHARMID representatives to visit a decentralized procurement and distribution system in South Africa, Cameroon, and Ghana to see experiences from within Africa.

The Master Plan proposes establishing a basket fund (contributed by government and donors) to procure and distribute all pharmaceuticals to all public facilities. The final draft recommends PHARMID as the building block for this fund. The recommendation includes setting up regional hubs and strengthening transport and warehousing systems. The plan also recommends that PASS be replaced by a new pharmaceutical structure to be the MoH body for policy and management related to medicines and related supplies. Another recommendation is that DACA be limited to regulatory duties.

RPM Plus has been requested by the Federal Minister to assist in the team for the writing of the implementation plan scheduled for April 10–25, 2006. RPM Plus has delegated Mr. Gabriel to be part of the team.

There is another Pharmaceutical Master Plan development initiative being conducted by DACA and funded by USAID and other donors. This is intended to be a more comprehensive global Master Plan that will incorporate the Logistics Master Plan. A consultancy group is being sought to undertake the task.

### **U.S. Institute of Medicine Visit**

Dr. Negussu and Mr. Gabriel of RPM Plus joined two U.S. Institute of Medicine (IOM) teams to visit two regions and shared documents and experiences in ARV medicines procurement and distribution. The six-person IOM team was in Ethiopia to evaluate the President's Emergency Plan for AIDS Relief program by visiting selected target sites and meet with partners and stakeholders. The evaluation report by IOM will be presented to U.S. Congress to provide information about the Emergency Plan's progress and assist in informing them about future funding of the program.



## **MALARIA INITIATIVE**

RPM Plus has been working to improve pharmaceutical management for malaria in African countries by identifying and addressing the causes of poor access, ineffective supply, and inappropriate use of antimalarials. RPM Plus has developed and applied assessment tools to pharmaceutical management for malaria. Significant among these interventions are ACTs.

Gladys Tetteh traveled to Addis Ababa, Ethiopia, for RPM Plus to technically assist development of Ethiopia's Five Year Strategic Plan for Malaria Prevention and Control: 2006–2010. In addition, the visit included preliminary planning with relevant stakeholders, including the MSH Ethiopia team, to support ACT policy implementation process and pharmaceutical management of malaria medicines and commodities including ACTs.



## **GATES FOUNDATION/MSH LEADERSHIP AND MANAGEMENT PROPOSAL**

MSH is working with Gates Foundation to develop, test, and demonstrate models for effective leadership and management at all levels that can be “owned” at country and regional levels. The overall goal of this program is to strengthen the leadership skills of Ministry staff, related NGOs, and faith-based organizations to help them meet selected targets of the Millennium Development Goals in health.

Lourdes De la Peza and Mary Mujomba of MSH went to Ethiopia during February to assess the need for a collaborative program on leadership and management in the health sector. The team visited various public and private sector entities who could be beneficiaries of such an intervention. The team will use its findings to design such a program for Ethiopia.



## LABORATORY COMMODITIES MANAGEMENT INITIATIVE

Currently, in all of the hospitals that have initiated ART, the laboratory supplies for HIV testing and ART monitoring (chemistry, hematology, and CD4 count) are being provided through a “push” system based on predetermined quotas. The timely availability of supplies and perishable reagents is critical to provide the required lab tests and expansion of services. Ideally, supply chain management of reagents should move to a “pull” system based on needs noted by the facility, however, most laboratories do not have adequate inventory and supply systems in place. This reagent management program should incorporate the elements of reagent selection, qualification, procurement, storage, distribution, and inventory control.

The ART Consultative Team Recommended that—

- Instituting a nationally standardized system of supply chain management
- Giving sole responsibility to a single implementing partner with proven experience in pharmaceutical supply management to provide technical assistance in this area.
- Connecting the facility-level pharmaceutical management team to the implementing partner because these are the individuals who most often order the reagents, test kits, and perishable supplies
- Linking to the Private Laboratories Consortium Unit or other laboratory working groups should be established for technical guidance when needed

### Current Status

Under COP 2006, a major RPM Plus activity is collaborating with the EHNRI to develop SOPs for supply chain management and LMIS of laboratory commodities, including equipment, laboratory reagents, and HIV test kits. Appropriate tools will be developed to track stock status and utilization, reagent quantification, procurement, storage, distribution, and inventory control of laboratory items at all levels.

Five RLMAs will be recruited and based at five regional hubs. The RLMAs will provide technical assistance to regional and hospital labs in the areas of training, quality assurance/quality control, monitoring stock status of reagents and test kits, recording, and reporting. RLMAs will serve as links between facilities, EHNRI/MoH/RHBs/CDC and the Emergency Plan/Ethiopia to ensure the uninterrupted supply of reagents and kits. Stock status and utilization reports will be produced and sent to relevant partners.

At an EHNRI meeting, these important tasks were reviewed to review and a laboratory commodities management expert is being recruited by RPM Plus to be seconded to EHNRI.

### **Briefing of Dr. John Kaplan by Partners**

At the invitation of USAID/Ethiopia, RPM Plus joined other Emergency Plan partners to brief Dr. John Kaplan (of CDC/OGAC who was reviewing the progress of ART program) on RPM Plus's work in the procurement, distribution, and management of ARV medicines and PMTCT products, including the provision of pharmaceutical MIS forms (March 6, 2006). A PowerPoint presentation prepared for the purpose was submitted.

### **Meeting with the Minister of Health**

A team of four RPM Plus senior staff (Maria Miralles, Michael Gabra, Mohan Joshi, and Gabriel Daniel) paid a courtesy visit to the MoH, Dr. Tedros Adhanom. The Minister was briefed on the different activities that RPM Plus is undertaking in Ethiopia. The Minister appreciated RPM Plus's assistance and requested its participation in writing of the implementation plan of the Logistics Master Plan.

### **Debriefing with USAID**

Melissa Jones and Omer Ahmed were debriefed on the visit of the different headquarter experts and the work undertaken to date.

## SITE VISITS

### Visit Itinerary

<b>Date</b>	<b>Health Facilities</b>	<b>Staff Involved</b>
Feb. 2	ALERT and Yekatit hospitals	Mr. Daniel and Engineer Tibebe Taye of RPM Plus
Feb. 6–10	Debremarkos, Finoteselam, Bahirdar, Gonder, Debretabor, Woldya, Dessie, and Debrebirhan hospitals; Woreta and Debremarkos health centers; and a visit to Fiche hospital enroute.	Mr. Daniel and Engineer Taye
Feb. 13	Ambo Hospital	Mr. Daniel in collaboration with the staff of Columbia University, Drs. Aida and Oluma
Feb. 28	St. Petros Hospital and Missionaries of Charities clinic	Mr. Daniel, Michael Gabra, Hailu Tadeg, and Yaregal of RPM Plus
March 1	Bishoftu Hospital	
March 8	Police, St. Paulos, Zewditu and Tikur Anbessa hospitals and National Quality Control Laboratory	Mr. Daniel with Dr. Yilma Desta of RPM Plus
March 9	Menelik and Bella hospitals	Mr. Daniel with Dr. Negussu Mekonnen

**Table 1. Health Facilities Observations, Recommendations, and Actions**

Health Facility	Observations	Recommendation/Action
1. Fiche Hospital (Oromia Region)	<p><b>General</b></p> <ul style="list-style-type: none"> <li>Is one of the hospitals that initiated ART after September 2005</li> <li>Met with the ART coordinator and other staff, as the Director and ART physician were not available</li> <li>The current ART patient uptake is 150.</li> </ul> <p><b>Staffing</b></p> <ul style="list-style-type: none"> <li>Four pharmacy professionals are trained in ARVs and MIS, and there are two additional staff who can be trained.</li> </ul> <p><b>MIS</b></p> <ul style="list-style-type: none"> <li>All standard MIS forms are provided by RPM Plus and staff are trained in the use of the tools.</li> <li>There is no pharmacy data clerk and the MIS is handled by the pharmacy professionals.</li> </ul> <p><b>Infrastructure and Storage of ARVs</b></p> <ul style="list-style-type: none"> <li>RPM Plus has not yet renovated any structure.</li> <li>The ART service is provided out of a separate block that houses TB, MCH, and VCT.</li> <li>The pharmacy occupies one room. There is no proper shelf, table, filing equipment etc.</li> <li>The main stock of ARVs is stored in the main store with other medicines..</li> <li>The main drugstore has two large rooms, one for general pharmaceuticals and supplies where ARVs, OIs, and TB medicines are stored.</li> <li>The other room used for medicines of the special pharmacy is large and inadequately used.</li> <li>The current dispensing pharmacy is inadequate for storage, data handling, and as a mini-store.</li> <li>The services are congested and the main ART register/data room is located far from the other services.</li> </ul>	<ul style="list-style-type: none"> <li>The pharmacy and records/data room (where registers, patient charts—electronic and paper—are kept) may be relocated to the front part of the block by extending the front part to create two rooms.</li> <li>The placement in the front makes the flow logical and creates more space so that there will be extra ART counseling and treatment rooms.</li> <li>RPM Plus will assist in renovation of the ARV medicines pharmacy and provide three partitions to serve as counseling-dispensing area, a mini-store, and a data room.</li> <li>The main stores can be reorganized by partitioning the special pharmacy store so that one part will be used for the special pharmacy and the other part for ARVs, OIs, TB, and malaria medicines.</li> </ul>

Health Facility	Observations	Recommendation/Action
<p>2. Debreworkos Hospital (Amhara Region)</p>	<p><b>General</b></p> <ul style="list-style-type: none"> <li>• The hospital Director provided a tour of the hospital and discussed ways of improving the pharmacy services in the hospital.</li> <li>• The hospital is one of the second cohort ART hospitals that initiated ART after September 2005.</li> <li>• ART service is being provided in existing available area and not in one block to ensure smooth flow.</li> <li>• The current ART patient uptake is 313.</li> </ul> <p><b>Staffing</b></p> <ul style="list-style-type: none"> <li>• Five pharmacy professionals are trained in ARVs and MIS.</li> <li>• There are three other professionals who can be trained.</li> </ul> <p><b>MIS</b></p> <ul style="list-style-type: none"> <li>• All pharmacy forms are in use.</li> <li>• There is no pharmacy data clerk and the MIS is handled by the pharmacy professional.</li> </ul> <p><b>Infrastructure and Storage of ARVs</b></p> <ul style="list-style-type: none"> <li>• RPM Plus has not renovated any structure. The pharmacy is old and small and crowded with forms, etc. There is no privacy and the room is poorly organized.</li> <li>• The pharmacy does not have appropriate store and dispensing area for ARVs at the dispensing pharmacy.</li> <li>• The bulk ARV supply is stored in the main pharmacy store which is located in a different block away from the dispensing pharmacy.</li> <li>• The main drugstore is a stand-alone structure with potential for expansion. It is crowded and lacks adequate shelving.</li> <li>• There are two other stores in different locations--one is reserved for ARVs and OIs and other miscellaneous supplies.</li> <li>• Having medicines in different stores does not provide for proper management and stock control.</li> </ul> <p><b>Plan</b></p> <ul style="list-style-type: none"> <li>• The Director informed us that the hospital is in the process of getting a new ART unit built. It is at the design stage. The fund for this is provided by GFATM.</li> <li>• The design is the one recommended by ART Consultant Team and was provided by RPM Plus through its RPMAs.</li> <li>• The RPM Plus engineer who drew the first sketch was able to provide advice to the city engineer on the plan.</li> </ul>	<ul style="list-style-type: none"> <li>• In the absence of any potential space in the current crowded hospital setting, the only solution for a proper ART service is to get the ART design up and running.</li> <li>• The existing space does not provide for any improvement in the structure. With that constructed the whole ART service can be accommodated.</li> <li>• The main drugstore that includes ARVs, OIs, and other related medicines can be reorganized by expanding the current main store so that all the different stores will be consolidated in one block.</li> <li>• The RPM Plus has done preliminary design for the renovation and the Director has agreed with the planned improvement.</li> <li>• The RPM Plus engineer will finalize the drawing and begin renovation work as soon as possible.</li> </ul>

Health Facility	Observations	Recommendation/Action
<p>3. Finote Selam Hospital (Amhara Region)</p>	<p><b>General:</b></p> <ul style="list-style-type: none"> <li>• The hospital Director was not available, so the tour was conducted by the pharmacist. There was discussion on ways of improving the pharmacy services in the hospital.</li> <li>• The hospital is one of the second cohort ART hospitals that initiated ART after September 2005.</li> <li>• The ART service looks organized with no external input.</li> <li>• The current ART patient uptake is 161.</li> </ul> <p><b>Staffing</b></p> <ul style="list-style-type: none"> <li>• Four pharmacy professionals are trained in ARVs and MIS.</li> </ul> <p><b>MIS</b></p> <ul style="list-style-type: none"> <li>• All pharmacy forms are in use.</li> <li>• There is no pharmacy data clerk and the MIS is handled by the pharmacy professional.</li> </ul> <p><b>Infrastructure and Storage of ARVs</b></p> <ul style="list-style-type: none"> <li>• RPM Plus has not renovated any structure.</li> <li>• The pharmacy is two rooms but lacks furniture and equipment to keep ARVs and records.</li> <li>• There is a separate room not far from the ART dispensing pharmacy to keep stock and is shelved in improvised wooden boxes.</li> <li>• The store carries ARVs and OIs provided by GFATM and PHARMID.</li> <li>• The main store is located in a different block far from the dispensing pharmacies. The store carries bulk ARVs, OIs, and TB medicines. The store is disorganized.</li> </ul> <p><b>Plan</b></p> <ul style="list-style-type: none"> <li>• The ART Consultative Team's recommended design is being used to construct a stand alone ART unit with funds obtained from GFATM.</li> </ul>	<ul style="list-style-type: none"> <li>• The pharmacy can be reorganized so that the current dispensing and counseling pharmacy can be renovated and supplied with basic furniture, shelving, and filing supplies.</li> <li>• The mini-store can be renovated so that it will have adequate shelving.</li> <li>• RPM Plus is considering expanding the main pharmacy store so that there will be a separate part with the proper condition and security to handle ARVs, OI medicines, and related products. There is adequate space in the current location to expand the store.</li> <li>• With the construction of the ART unit per the consultant team recommendation, the problem of the ART pharmacy will be resolved.</li> </ul>

Health Facility	Observations	Recommendation/Action
<p>4. Bahir Dar Hospital (Amhara Region)</p>	<p><b>General:</b></p> <ul style="list-style-type: none"> <li>• The ART unit design recommended by the ART Consultative Team’s is shared with Deputy RHB chief who said that the hospitals in the region were given 400,000–800,000 Ethiopian Birr for renovation work for ART services.</li> <li>• The hospital Director talked to us briefly.</li> <li>• The hospital is one of the first cohort ART hospitals that initiated free ART in March 2005.</li> <li>• The current ART patient uptake is 1,705.</li> </ul> <p><b>Staffing</b></p> <ul style="list-style-type: none"> <li>• Four pharmacy professionals trained in ARVs and MIS.</li> <li>• There are six other professionals that can be trained.</li> </ul> <p><b>MIS</b></p> <ul style="list-style-type: none"> <li>• The facility has adequate supplies of the standard forms from RPM Plus.</li> <li>• There is no pharmacy data clerk and the MIS is handled by the pharmacy professionals.</li> <li>• Files are not organized properly.</li> </ul> <p><b>Infrastructure and Storage of ARV Medicines:</b></p> <ul style="list-style-type: none"> <li>• RPM Plus has renovated the main dispensing pharmacy and office, and has provided furniture and two booths.</li> <li>• The current hospital ART unit is appended to the block that houses TB and MCH.</li> <li>• It has the VCT room, pharmacy, ART room and data room in the same block.</li> <li>• The ART pharmacy is a single room facility with skeletal preparation to serve as both a counseling room and a dispensing room. There is no shelf or lockable store, and ARVs are not shelved but are dispensed out of their respective boxes (the professionals feel this is a better way to do it).</li> <li>• The originally renovated pharmacy and booths became redundant because the newly constructed pharmacy block housed the special and main budget pharmacies.</li> <li>• The newly constructed structure includes two well designed and spacious storage rooms for ARVs, OIs, and other free medicines for patients.</li> <li>• The other room is dedicated as a bulk store for the special pharmacy.</li> <li>• The stores lack shelving, fans for air circulation, and outlets for electricity, and do not have pallets.</li> <li>• There are about 100 wide-body shelving panels without stands that can be used easily if the stands are made available.</li> <li>• There are two other large stores for bulk products, hospital supplies, and equipment. One of these stores has been renovated by RPM Plus.</li> </ul>	<ul style="list-style-type: none"> <li>• The ART pharmacy needs to be reorganized with the provision of shelves, filing and storage cabinets, and adequate furniture.</li> <li>• The room is inadequate to serve as a three-room ART pharmacy with space for counseling/ dispensing, mini-store and data room.</li> <li>• Without a provision for these services, the ART unit will be lacking the minimum requirement (being a referral regional hospital).</li> <li>• Unless there is another option, the construction of the PCU or ART unit is the only saving grace.</li> <li>• RPM Plus will provide electric outlets and fans for the newly built store.</li> <li>• RPM Plus will provide stands for the about 100 wide body shelf panels available at the main store.</li> <li>• RPMA can coordinate with RHB to move pallets to the hospital store.</li> <li>• The ART Consultative Team recommended that the design for ART unit is shared with the Director who wishes to use GFATM monies for construction of the comprehensive ART unit.</li> </ul>

Health Facility	Observations	Recommendation/Action
<p>5. Gonder Hospital (Amhara Region)</p>	<p><b>General</b></p> <ul style="list-style-type: none"> <li>• The hospital Director conducted the tour and discussed ways of improving the pharmacy services in the hospital.</li> <li>• The hospital is one of the first cohort ART hospitals that initiated ART in March 2005.</li> <li>• The current ART patient uptake is 749.</li> </ul> <p><b>Staffing</b></p> <ul style="list-style-type: none"> <li>• Three pharmacy professionals are trained in ARVs and MIS. There are three others that can be trained.</li> </ul> <p><b>MIS</b></p> <ul style="list-style-type: none"> <li>• All pharmacy forms are in use.</li> <li>• There is no pharmacy data clerk and the MIS is handled by the pharmacy professionals.</li> <li>• The absence of data clerk, computer and space makes the work of the pharmacist challenging.</li> </ul> <p><b>Infrastructure and Storage of ARV Medicines</b></p> <ul style="list-style-type: none"> <li>• The ART pharmacy counsels patients as a group where they can also share experiences. The space available is inadequate for such an innovative practice.</li> <li>• RPM Plus has renovated the main dispensing pharmacy and office, and has provided furniture and two booths.</li> <li>• The ART pharmacy is one room next to an ART follow-up clinic. It does not meet the three-room ART-recommended pharmacy set-up of counseling and dispensing, data rooms, and mini-store.</li> <li>• The main stock of ARVs and OIs medicines are stored in the underground storage facility that RPM Plus helped renovate. However, the space is inadequate due to the increased stock level.</li> <li>• Another store far away from the dispensing pharmacies is for hospital supplies, bulk products, and equipment and is congested.</li> <li>• The distance of the main store from the dispensing areas make the system cumbersome and insecure.</li> </ul> <p><b>Plan</b></p> <ul style="list-style-type: none"> <li>• A discussion held with the director and the dean of the college focused on the possibility of expanding the basic medicines store that handles ARVs so that there will be additional appropriate space close to the dispensing areas.</li> <li>• The officials agree in principle and will follow up with RPM Plus engineer and RPMA after consulting the hospital committee.</li> </ul>	<ul style="list-style-type: none"> <li>• RPM Plus will provide data clerk and computer.</li> <li>• The hospital has to ensure that there is adequate space to accommodate the data clerk and computer.</li> <li>• The RPM Plus engineer and regional pharmacist will follow up with the officials about the expansion proposal.</li> <li>• If the hospital makes a telephone line available for the pharmacy to follow up on patients and have an Internet connection, RPM Plus will provide support in extending the line to the pharmacy and paying for recurrent cost up to a maximum allocated budget.</li> </ul>

Health Facility	Observations	Recommendation/Action
<p>6. Debreabor Hospital (Amhara Region)</p>	<p><b>General</b></p> <ul style="list-style-type: none"> <li>• The hospital Director conducted the tour and discussed ways of improving the pharmacy services in the hospital.</li> <li>• The hospital is one of the second cohort ART hospitals that initiated ART after September 2005.</li> <li>• The ART service is being provided in an old block that has a VCT room, counseling room, a pharmacy, and doctors' room.</li> <li>• The current ART patient uptake is 188.</li> </ul> <p><b>Staffing</b></p> <ul style="list-style-type: none"> <li>• There is no pharmacist assigned solely to ART pharmacy.</li> <li>• There are two special pharmacies and two budget pharmacies run by individual pharmacy personnel due to lack of trust between each other. This is not an efficient way of using scarce human resource.</li> </ul> <p><b>MIS</b></p> <ul style="list-style-type: none"> <li>• All pharmacy forms are in use.</li> <li>• There is no pharmacy data clerk and the MIS is handled by the pharmacy professionals.</li> </ul> <p><b>Infrastructure and Storage of ARV Medicines</b></p> <ul style="list-style-type: none"> <li>• RPM Plus has not renovated any structure.</li> <li>• The current ART unit is in an old building and does not meet the standards for ART services.</li> <li>• The ART pharmacy is a one-room structure in the ART building.</li> <li>• The main store is a small, unventilated building that is poorly organized.</li> </ul> <p><b>Plan</b></p> <ul style="list-style-type: none"> <li>• The hospital has adopted the ART Consultative Team's recommended ART unit (PCU) and contracted out the work.</li> <li>• Due to a change in the plan, RPM Plus will see about providing support for the pharmacy component.</li> </ul>	<ul style="list-style-type: none"> <li>• RPM Plus will provide support to the expansion of the planned new structure to be constructed for ART unit.</li> <li>• This expansion plan will be for pharmacy counseling and dispensing, data room, and mini- and main stores.</li> <li>• The hospital has to come up with a system where efficient use of pharmacy professionals can be made.</li> </ul>

Health Facility	Observations	Recommendation/Action
<p>7. Woldya Hospital (Amhara Region)</p>	<p><b>General</b></p> <ul style="list-style-type: none"> <li>• The hospital Director conducted the tour and discussed ways of improving the pharmacy services in the hospital.</li> <li>• The hospital is one of the second cohort ART hospitals that initiated ART after September 2005.</li> <li>• The current ART patient uptake is 353.</li> </ul> <p><b>Staffing</b></p> <ul style="list-style-type: none"> <li>• Pharmacy professionals are trained in ARVs and MIS.</li> </ul> <p><b>MIS</b></p> <ul style="list-style-type: none"> <li>• All pharmacy forms are in use.</li> <li>• There is no pharmacy data clerk and the MIS is handled by pharmacy professionals.</li> </ul> <p><b>Infrastructure and Storage of ARV Medicines</b></p> <ul style="list-style-type: none"> <li>• RPM Plus has not renovated any structure.</li> <li>• ART service is being provided out of an old structure that does not adequately cater for the different components (VCT, counseling, clinic, and pharmacy).</li> <li>• The current ART pharmacy is a one-room structure with inadequate space for counseling, dispensing, storage, and data management.</li> <li>• There is a store for ARVs and OI medicines in the main hospital building a distance from the ART unit.</li> <li>• The main pharmacy is also crowded and not adequate for proper storage of ARVs and similar sensitive products.</li> </ul> <p><b>Plan</b></p> <ul style="list-style-type: none"> <li>• The hospital has adopted the ART Consultative Team’s recommended ART PCU and contracted out the work.</li> <li>• The hospital is also constructing a stand-alone main drugstore that will accommodate ARVs and OI medicines.</li> </ul>	<ul style="list-style-type: none"> <li>• The completion of the PCU and main drugstore will resolve the space problem.</li> <li>• RPM Plus will provide shelves, filing and storage cabinets, and booths and furniture.</li> </ul>

Health Facility	Observations	Recommendation/Action
<p>8. Dessie Hospital (Amhara Region)</p>	<p><b>General</b></p> <ul style="list-style-type: none"> <li>• The hospital Director conducted the tour and discussed ways of improving the pharmacy services in the hospital.</li> <li>• The hospital is one of the second cohort ART hospitals that initiated ART after September 2005.</li> <li>• The current ART patient uptake is 1,387.</li> <li>• The visiting team witnessed a situation where a dozen patients marched to the director and demanded to be provided with medications as they had completed their lab work. The complaint arose due to the fact that the ART physician told them to come back for their medication after several days and they said that they did not have a place to stay since they came from a distance. The director intervened to request the ART physician to stay longer and serve these patients. The patients were angry and accused the hospital of advertising available services but when the patients tried to access them, the services were not easily accessible.</li> </ul> <p><b>Staffing</b></p> <ul style="list-style-type: none"> <li>• Three pharmacy professionals are trained in ARVs and MIS.</li> <li>• The pharmacy is not dispensing OI medicines due to shortage of space and manpower.</li> <li>• Use of a pharmacy professional strictly for pediatric patients is considered an inefficient use of scarce manpower.</li> <li>• Extremely overworked ART physician and pharmacist</li> </ul> <p><b>MIS</b></p> <ul style="list-style-type: none"> <li>• All pharmacy forms are in use.</li> <li>• There is no pharmacy data clerk and the MIS is handled by pharmacy personnel.</li> </ul> <p><b>Infrastructure and Storage of ARV Medicines</b></p> <ul style="list-style-type: none"> <li>• RPM Plus has renovated the main dispensing pharmacy and office and provided furniture and two booths.</li> <li>• The ART service is being provided in the RPM Plus renovated pharmacy structure.</li> <li>• Three rooms have been renovated by RPM Plus to serve as ART pharmacy. However, two rooms were taken away to be used by the ART physician and to serve as data room, leaving no adequate space for the ARVs.</li> <li>• RPM Plus has undertaken major renovation work on the main store, which includes adding shelves.</li> </ul> <p><b>Plan</b></p> <ul style="list-style-type: none"> <li>• There is no plan by the hospital for building a new structure for a comprehensive ART service due to lack of funds.</li> <li>• Fund provided by GFATM is being used for renovation of other services (X-ray)</li> <li>• RPM Plus provided ART Consultative Team’s design for future use</li> <li>• Transfer the pediatric pharmacist to the ART pharmacy so that the burden in the ART pharmacy can be shared.</li> </ul>	<ul style="list-style-type: none"> <li>• The ART Consultative Team’s recommended ART design has been shared with the director to use in the event another resource is available for renovation.</li> <li>• RPM Plus will provide basic shelving, filing, and storage cabinets and furniture.</li> <li>• If there is space, a computer will be provided.</li> </ul>

Health Facility	Observations	Recommendation/Action
9. Ambo Hospital (Oromia Region)	<p><b>General</b></p> <ul style="list-style-type: none"> <li>Mr. Daniel was joined by two physicians from Columbia University, Dr. Aida and Oluma, for a hospital visit and planning.</li> <li>The hospital Director provided a tour and discussed ways of improving the pharmacy services in the hospital.</li> <li>The zonal health bureau chief was given the ART Consultative Team's ART design which is being considered for adoption.</li> <li>The hospital is one of the second cohort ART hospitals that initiated ART after September 2005.</li> <li>The current ART patient uptake is 275.</li> </ul> <p><b>Staffing</b></p> <ul style="list-style-type: none"> <li>Three pharmacy professionals are trained in ARVs and MIS.</li> <li>There are three others who can be trained.</li> </ul> <p><b>MIS</b></p> <ul style="list-style-type: none"> <li>Although all MIS forms are provided through Oromia Region, the individual patient sheet is not used. Only the register and stock card are in use. Although it was reported that the individual sheet and other forms were not provided to them, these forms were available in the store.</li> <li>There is no pharmacy data clerk and the MIS is handled by pharmacy professionals.</li> </ul> <p><b>Infrastructure and Storage of ARV Medicines</b></p> <ul style="list-style-type: none"> <li>RPM Plus has not renovated any structure.</li> <li>The ART service is being provided in a block that houses the TB unit.</li> <li>ART pharmacy service is being provided in the out-patient budget pharmacy away from the ART unit.</li> <li>A patient has to walk through the crowded ward, wait in an area that is uncomfortable, and receive counseling in an open environment to get ARVs.</li> <li>ARVs are stored in bulk in the main store which is disorganized and inappropriate for medicine storage.</li> </ul> <p><b>Plan</b></p> <ul style="list-style-type: none"> <li>The Columbia University team informed us that there is a plan to renovate the facility to have a comprehensive ART unit.</li> <li>The ART Consultative Team's recommended ART unit design was shared with the zonal health bureau chief and engineer; they expressed their interest to use the funds available from GFATM for this purpose.</li> <li>Agreement was reached to have a meeting between the RPM Plus engineer, zonal, and Colombia University engineers to sort out a workable plan.</li> </ul>	<ul style="list-style-type: none"> <li>RPM Plus will provide shelving, storage cabinets, and filing equipment.</li> <li>RPM Plus has made a preliminary plan to expand and improve the existing main store to ensure appropriate and secure storage of program provided resources.</li> <li>RPM Plus engineer will coordinate the renovation work with CU.</li> </ul>



Health Facility	Observations	Recommendation/Action
<p>10. Yekatit Hospital (Addis Ababa)</p>	<p><b>General</b></p> <ul style="list-style-type: none"> <li>The hospital Director of the hospital conducted the tour and discussed ways of improving the pharmacy services in the hospital.</li> <li>The hospital is one of the second cohort ART hospitals that initiated ART after September 2005.</li> <li>Current ART uptake is 453.</li> </ul> <p><b>MIS</b></p> <ul style="list-style-type: none"> <li>All pharmacy forms are provided by RPM Plus and are in use.</li> <li>There is a pharmacy data clerk who handles MIS.</li> </ul> <p><b>Staffing</b></p> <ul style="list-style-type: none"> <li>RPM Plus has trained staff in pharmacy MIS.</li> </ul> <p><b>Infrastructure and Storage of ARV Medicines</b></p> <ul style="list-style-type: none"> <li>The main drugstore that holds the bulk ARV and OI medicines has not been visited.</li> <li>Lockable storage and filing cabinets are provided by RPM Plus.</li> <li>The ART service is located on a second floor of the hospital.</li> <li>The pharmacy, VCT, and data room are on the second floor while the ART physicians are on the first floor.</li> <li>The two-story arrangement is a challenge for patients who have difficulty going up the stairs to collect their medicines.</li> </ul> <p><b>Plan</b></p> <ul style="list-style-type: none"> <li>In the interim, there is a plan to renovate another old block for accommodating all the components of ART services, however the plan does not adequately provide space for the ART pharmacy and VCT services</li> <li>In the long run, the hospital is intending to move the ART service to another location where all the components will be housed under one roof.</li> </ul>	<p><b>Action</b></p> <ul style="list-style-type: none"> <li>RPM Plus plans to support the extension and expansion of the available space so that the ART pharmacy and VCT will be accommodated.</li> <li>Necessary shelving will be provided.</li> <li>The engineer will draft the planned design and get approval for its implementation.</li> <li>In response to a request from the Director, the engineer will assist in a drawing for ramp for patient access to be built with hospital resources.</li> <li>The ART or Primary Care Unit design recommended by the ART Consultative Team's is shared with Director as a reference for future planning if funds become available from GFATM.</li> </ul>

Health Facility	Observations	Recommendation/Action
<p>11. Alert Hospital (Addis Ababa)</p>	<p><b>General</b></p> <ul style="list-style-type: none"> <li>• The hospital Director of the hospital conducted the tour and discussed ways of improving the pharmacy services in the hospital.</li> <li>• The hospital initiated ART over a year ago with support from ENAHPA.</li> <li>• Current ART patient uptake is 1,840.</li> <li>• The hospital is now included under the Emergency Plan and is being provided with Emergency Plan and GFATM ARVs.</li> </ul> <p><b>MIS</b></p> <ul style="list-style-type: none"> <li>• The pharmacy is not using the newly supplied forms due to the shortage of personnel.</li> <li>• There is shortage of personnel and there is no dedicated pharmacy professional to handle ART pharmacy.</li> </ul> <p><b>Staffing</b></p> <ul style="list-style-type: none"> <li>• There is shortage of pharmaceutical personnel</li> <li>• There are only three pharmacy professionals.</li> <li>• Only one is trained in ARVS and MIS</li> <li>• There is no one dedicated pharmacy personnel for ARV medicines management</li> </ul> <p><b>Infrastructure and Storage of ARV Medicines</b></p> <ul style="list-style-type: none"> <li>• There is a new temporary structure that houses two ART physician rooms, records/data room, and counseling area.</li> <li>• ART service is organized as one-stop service with VCT, ART clinic, and records/data in the same location.</li> <li>• The ART pharmacy, a small room that also doubles as a store, is next to the main budget pharmacy. It is congested and lacks adequate shelving, and is inappropriate for patient counseling.</li> <li>• There are pharmaceutical supplies in other two places, including a shipping container.</li> </ul> <p><b>Plan</b></p> <ul style="list-style-type: none"> <li>• There is plan is to extend and expand the existing main store that houses ARVs, OI, and TB medicines and consolidate all pharmaceuticals in one large store. This ensures proper storage condition, security, and store management.</li> <li>• The ART pharmacy is planned to be extended as part of the existing new temporary structure so that it will have space for counseling and dispensing, a mini-store, and pharmacy data area.</li> </ul>	<ul style="list-style-type: none"> <li>• RPM Plus is in the process of expanding and improving the main drugstore so that all pharmaceuticals are stored under one roof.</li> <li>• The engineer has drafted the new extension of the ART pharmacy adjacent to the ART unit, thereby bringing nearly all the ART services “under-one-roof.”</li> <li>• RPM Plus will provide lockable storage and filing cabinets, and shelves.</li> <li>• RPM Plus will assist in getting the provided forms to be completed as in other hospitals.</li> </ul>

Health Facility	Observations	Recommendation/Action
<p>12. St. Petros Hospital (Addis Ababa)</p>	<p><b>General</b></p> <ul style="list-style-type: none"> <li>• The hospital Director arranged for the ART physician to conduct the tour and to discuss ways of improving the pharmacy services in the hospital. The pharmacy professional joined the round.</li> <li>• The hospital is one of the second cohort ART hospitals that initiated ART after September 2005.</li> <li>• St. Petros has one of the best laboratory set-ups with adequate space, staffing, and equipment—they provide services to the Missionaries of Charity pediatric orphan unit for fee.</li> <li>• Current ART patient uptake is 257.</li> </ul> <p><b>Staffing</b></p> <ul style="list-style-type: none"> <li>• There are two trained pharmacy professionals in ARVs and MIS, and two more who can be trained.</li> </ul> <p><b>MIS</b></p> <ul style="list-style-type: none"> <li>• RPM Plus has trained staff in MIS and provided lockable storage and filing cabinets as well as table and desk for the pharmacy professionals.</li> <li>• RPM Plus provided MIS forms are in use.</li> </ul> <p><b>Infrastructure and Storage of ARV Medicines</b></p> <ul style="list-style-type: none"> <li>• The ART service is being provided in a structure that used to be the international immunization unit. The unit is now in one of the middle rooms of the ART unit.</li> <li>• The unit has one ART physician room, a VCT room, a data room, and a one-room pharmacy.</li> <li>• The set-up is satisfactory but there is not enough space for an additional physician's room and adequate space for pharmacy counseling/dispensing, data and mini-storage.</li> <li>• The facility has empty spaces around it that can be used for expansion/extension.</li> <li>• The main drugstore is on the hospital's ground floor at the very rear of the two-story building. Although ARVs are stored in here, the building is crowded and inadequate for storage.</li> <li>• There is another store adjoining the ART pharmacy used as a bulk store for the special pharmacy which is located at distance from the store.</li> <li>• The unorganized location of the pharmacy dispensaries and stores makes the work ineffective.</li> <li>• The immunization room can be moved to a new place to be renovated. This will keep all ART services on the same side.</li> <li>• In a separate discussion held with the laboratory, it was indicated that they will be willing and able to set up a mobile laboratory service for three days a week or so. A laboratory professional will work in a laboratory room provided by the mission and equipment and reagents provided by the St. Petros hospital for a monthly or annual fee.</li> </ul> <p><b>Plan</b></p> <ul style="list-style-type: none"> <li>• To optimize storage, strengthen accountability and ease of movement of products from stores to dispensaries, an agreement has been reached to consolidate all storage in one place</li> <li>• Move the special pharmacy store to the main pharmacy store by expanding the existing main store at the rear of the main hospital admin building</li> <li>• Relocate the ART pharmacy to the evacuated existing special pharmacy store. This will free up a room for the ART clinic (to serve as VCT).</li> </ul>	<ul style="list-style-type: none"> <li>• RPM Plus engineer will design/draw the plan for the expansion of the main store and extend the existing unit to relocate the immunization unit.</li> </ul>

Health Facility	Observations	Recommendation/Action
<p>13. Missionaries of Charity (Addis Ababa)</p>	<p><b>General</b></p> <ul style="list-style-type: none"> <li>• The nursing sister in charge of the “clinic” was available to take give us an overview and discuss ways of improving the pharmacy services in the hospital.</li> <li>• Current pediatric ART uptake is 142.</li> <li>• The clinic is a special facility that has been included in ART services due to its special service to positive orphans.</li> <li>• They have about 150 pediatric positive cases.</li> <li>• With special arrangement, the clinic is providing ART services and the organization has been encouraged to complete registration process to give it a legal standing. The process is said to have started.</li> <li>• In the meantime, RPM Plus was requested by the Emergency Plan to provide ARVs and assist with the necessary pharmaceutical services.</li> <li>• The clinic is not officially registered as a clinic—it is technically regarded as a satellite facility to be supported by Tikur Anbessa hospital.</li> <li>• The laboratory service is being handled by Tikur Anbessa Hospital and CD4 services provided by Private Laboratories Consortium Unit.</li> </ul> <p><b>Staffing</b></p> <ul style="list-style-type: none"> <li>• There is a physician that has recently been trained in ART provided by HAPCO/ITECH.</li> <li>• The clinic does not have its own pharmacy or laboratory personnel; therefore, RPM Plus has recruited a trained pharmacy professional to work in the clinic to handle ARVs provided by the Emergency Plan and GFATM/MOH</li> </ul> <p><b>MIS</b></p> <ul style="list-style-type: none"> <li>• RPM Plus provided MIS forms are in use.</li> <li>• Pharmacy MIS forms are provided and reports received on a weekly and monthly basis.</li> </ul> <p><b>Infrastructure and Storage of ARV Medicines</b></p> <ul style="list-style-type: none"> <li>• A room has been renovated by RPM Plus for storage of ARVs.</li> <li>• There was discussion held with St. Petros hospital regarding setting up a satellite laboratory in the Mission clinic since St. Petros hospital has the capacity to provide such a service.</li> </ul>	<ul style="list-style-type: none"> <li>• RPM Plus will continue with the professional secondment and provide shelving.</li> <li>• It is recommended that the Mission negotiate with St. Petros Hospital to establish a mobile lab in the mission, until the mission establishes its own laboratory.</li> <li>• The Mission needs to aggressively work to get the clinic registered as they have all it needs to get legal status.</li> </ul>

Health Facility	Observations	Recommendation/Action
<p>14. Menelik Hospital (Addis Ababa)</p>	<p><b>General</b></p> <ul style="list-style-type: none"> <li>• This was unplanned visit so there was no meeting with the hospital Director.</li> <li>• Current ART patient uptake is 385.</li> <li>• The hospital is one of the second cohort ART hospitals that initiated ART after September 2005.</li> </ul> <p><b>MIS</b></p> <ul style="list-style-type: none"> <li>• All standard forms are provided by RPM Plus and in use.</li> </ul> <p><b>Staffing</b></p> <ul style="list-style-type: none"> <li>• Pharmacy personnel are trained in ARVs and MIS.</li> </ul> <p><b>Infrastructure and Storage of ARV Medicines</b></p> <ul style="list-style-type: none"> <li>• The ART service is located in a hallway/corridor area. There is an adjoining VCT with a lab room.</li> <li>• The ART unit has partitioned rooms with space for two physicians, a counseling and data room.</li> <li>• The low partitions do not allow private counseling.</li> <li>• The ART pharmacy is supposedly renovated by JHU but is not functionally organized to serve the purpose.</li> <li>• The ART pharmacy is at one end of the hospital in a place difficult for patients to reach.</li> <li>• The main store was not visited since the pharmacist was not there.</li> <li>• RPM Plus has provided storage and filing cabinets and furniture for the pharmacy.</li> </ul> <p><b>Plan</b></p> <ul style="list-style-type: none"> <li>• Based on preliminary observations and prior discussions that Dr. Negussu had with the Director, the plan is to evacuate and renovate a structure that currently is being used as an additional administration block to serve as the ART unit.</li> <li>• The ART pharmacy can be extended/expanded from a newly built VCT center in front of the structure planned to be renovated.</li> <li>• This extension will ensure the availability of a counseling and dispensing area, a data room, and a mini-store to avoid frequent collection of ARVs and related products from the main pharmacy.</li> </ul>	<ul style="list-style-type: none"> <li>• RPM Plus engineer will work with JHU to design the renovation of the old block</li> <li>• RPM Plus will extend the VCT structure to house the comprehensive ART pharmacy unit.</li> </ul>

Health Facility	Observations	Recommendation/Action
15. Bella Hospital (Addis Ababa)	<p><b>General</b></p> <ul style="list-style-type: none"> <li>• The hospital Director was not available during the visit.</li> <li>• Current ART patient uptake is 345.</li> <li>• The hospital is one of the second cohort hospitals that initiated ART after September 2005.</li> </ul> <p><b>MIS</b></p> <ul style="list-style-type: none"> <li>• The standard forms and register are provided by RPM Plus and being used.</li> </ul> <p><b>Staffing</b></p> <ul style="list-style-type: none"> <li>• Training has been provided in ARVs management and MIS.</li> </ul> <p><b>Infrastructure and Storage of ARV Medicines</b></p> <ul style="list-style-type: none"> <li>• Bella hospital was one of the facilities that had benefited from renovation services under PMTCT.</li> <li>• The store has been expanded and shelves provided during the PMTCT support.</li> <li>• Currently, ARVs are dispensed from a booth provided by RPM Plus in the main pharmacy.</li> <li>• Initiating patients are counseled in a common room that serves as staff room.</li> <li>• The room is provided with storage cabinet and filing cabinet by RPM Plus.</li> <li>• The ART service is being provided in a newly CDC built structure, under the principle of “ART under one roof.”</li> <li>• The rooms are small and the structure not malleable for expansion or renovations.</li> <li>• In the new CDC-provided structure, there is a small room for ART pharmacy but it does not meet the minimum three-room configuration for optimal service.</li> </ul> <p><b>Plan</b></p> <ul style="list-style-type: none"> <li>• In consultation with ART nurses and pharmacy staff, it is proposed that the CDC-provided structure be extended so that adequate space is made available for ART pharmacy “ART-under-one-roof” approach.</li> <li>• The RPM Plus engineer will meet with the Director, discuss the proposal, and make a drawing for implementation.</li> <li>• Cracked walls will be repaired.</li> </ul>	<ul style="list-style-type: none"> <li>• RPM Plus engineer will follow up with the planned activities and design the expansion plan.</li> </ul>

Health Facility	Observations	Recommendation/Action
<p>16. Zewditu Hospital (Addis Ababa)</p>	<p><b>General</b></p> <ul style="list-style-type: none"> <li>The hospital Director was not available during the visit</li> <li>Current ART patient uptake is 2,958.</li> <li>The hospital is one of the first cohort hospitals that initiated ART in March 2005.</li> <li>It has the highest number of patients and most of them have switched from the fee-paying system.</li> </ul> <p><b>MIS</b></p> <ul style="list-style-type: none"> <li>All the forms provided by RPM Plus and are in use.</li> <li>The pharmacy data personnel provided by RPM Plus are sitting in the middle of the budget pharmacy and doing the manual register and computerized system. This will congest the working area and interfere with technical work.</li> <li>Zewditu is one of the hospitals using computer software provided by RPM Plus for stock and patient management/tracking.</li> </ul> <p><b>Staffing</b></p> <ul style="list-style-type: none"> <li>There are two persons actively involved in ARV medicines management and counseling.</li> <li>ARV medicines MIS is handled by pharmacy clerks provided by RPM Plus.</li> </ul> <p><b>Infrastructure and Storage of ARV Medicines</b></p> <ul style="list-style-type: none"> <li>The ART service is being provided from three different locations, one of them specific for children.</li> <li>One of the ART clinics provided by CDC does not have adequate space.</li> <li>The initial structure of ART is a more spacious place but does not have enough rooms to accommodate more physicians.</li> <li>The pediatric ART unit is a very small room with no adequate space for a physician and counselor.</li> <li>There is a structure for VCT that is well spaced and organized.</li> <li>The ART pharmacy is located away from these structures close to the main hospital entrance.</li> <li>The ART pharmacy counseling and dispensing room is a small room with a small space for ARV storage (converted by RPM Plus from a staircase).</li> <li>Three booths with outlook windows are provided.</li> <li>The pharmacy is also provided with shelves, cabinets and tables and chairs.</li> <li>Since there is inadequate storage space at the dispensing pharmacy, personnel must make frequent trips to collect ARVs from the main pharmacy store.</li> <li>The main drugstore, located in the basement, currently occupies two large rooms and several small rooms and ARVs are stored here.</li> <li>The two main stores are renovated by RPM Plus.</li> <li>The current load of patients and computerization of the system makes it mandatory to solve the space problem.</li> <li>Refrigerators are provided to ease the cold chain constraints.</li> <li>The two large main stores are now full and several rooms have been made available for storage of IV fluids and other supplies.</li> <li>The space is so inadequate that products are stored in a bath tub.</li> </ul>	<ul style="list-style-type: none"> <li>Based on the increasing number of patients, it is proposed to begin a second phase renovation/expansion.</li> <li>RPM Plus engineer will work on a design that will extend the CDC provided structure so that there will adequate space for ART pharmacy.</li> <li>The main pharmacy store will also be provided with shelves to handle ARVs in the proper setting.</li> <li>The problem of storage in the hospital is critical and requires a special attention from the RHB and concerned officials for resolution.</li> </ul> 

Health Facility	Observations	Recommendation/Action
<p>17. Tikur Anbessa Hospital (Addis Ababa)</p>	<p><b>General</b></p> <ul style="list-style-type: none"> <li>• Hospital pharmacy personnel provided a tour and discussed ways of improving the pharmacy services in the hospital.</li> <li>• Current ART patient uptake is 1,609.</li> <li>• The hospital is one of the first cohort ART hospitals that initiated ART in March 2005.</li> </ul> <p><b>MIS</b></p> <ul style="list-style-type: none"> <li>• RPM Plus-provided standard forms are in use.</li> </ul> <p><b>Staffing</b></p> <ul style="list-style-type: none"> <li>• All staff are trained in ARV medicine management and MIS.</li> </ul> <p><b>Infrastructure and Storage of ARV Medicines</b></p> <ul style="list-style-type: none"> <li>• The ART service is being provided in different areas.</li> <li>• The ART physicians and VCT are in the outpatient areas of the hospital.</li> <li>• The ART pharmacy is at a different location.</li> <li>• RPM Plus expanded and renovated an area so that it will have adequate space for counseling and dispensing, mini-store, and pharmacy data room.</li> <li>• An outpatient pharmacy was also created out of a spacious corridor with adequate partitions.</li> <li>• The hospital is currently using two partitioned rooms in the corridor for ART data room.</li> <li>• The place where ARVs and OI medicines are kept is extremely congested and unfit for the purpose.</li> </ul> <p><b>Plan</b></p> <ul style="list-style-type: none"> <li>• The hospital has two bigger rooms in the two floors of the basement but is not set up for storage of medicines. The plan is to renovate these stores to make them acceptable for proper storage.</li> <li>• The overall pharmacy arrangement calls for reorganizing and creating an acceptable setup befitting the hospital's role as a major teaching and referral hospital.</li> <li>• The proposed intervention includes refurbishing the main underground store and make adequate and proper space for storage and handling of ARV, OI, and TB medicines.</li> </ul>	<ul style="list-style-type: none"> <li>• RPM Plus engineer will follow up with the planned activities and design the expansion plan.</li> </ul>

Health Facility	Observations	Recommendation/Action
18. Police Hospital (Addis Ababa)	<p><b>General</b></p> <ul style="list-style-type: none"> <li>• The chief pharmacist of the hospital was available to take us around and discuss ways of improving the pharmacy services in the hospital.</li> <li>• Current ART patient uptake is 412.</li> <li>• The hospital is one of the first cohort ART hospitals that initiated ART in March 2005.</li> <li>• Police hospital has an active medicine and therapeutic committee that discusses ART matters.</li> </ul> <p><b>MIS</b></p> <ul style="list-style-type: none"> <li>• All forms provided by RPM Plus are in use.</li> <li>• Data is maintained in the office of the pharmacist.</li> </ul> <p><b>Infrastructure and Storage of ARV Medicines</b></p> <ul style="list-style-type: none"> <li>• The ART service is being provided in different areas.</li> <li>• The pharmacy has been provided by RPM Plus with booths, cabinets, and MIS forms.</li> <li>• One of the rooms has been renovated to serve as a counseling and dispensing room.</li> <li>• The main stock of ARV medicines is in the main drugstore which is adjacent to the dispensing pharmacy.</li> <li>• The whole block belongs to the pharmacy, with the ART, outpatient, and inpatient pharmacies and data room all under one roof.</li> </ul> <p><b>Plan</b></p> <ul style="list-style-type: none"> <li>• There is a plan to move the ART pharmacy next to an ART unit that is recently constructed, not far from the current pharmacy location.</li> </ul>	

Health Facility	Observations	Recommendation/Action
<p>19. Paulos Hospital (Addis Ababa)</p>	<p><b>General</b></p> <ul style="list-style-type: none"> <li>• The hospital Director conducted a tour and discussed ways of improving the pharmacy services in the hospital.</li> <li>• The hospital is one of the first cohort ART hospitals that initiated ART after September 2005.</li> <li>• Current ART patient uptake is 1,566.</li> </ul> <p><b>MIS</b></p> <ul style="list-style-type: none"> <li>• All forms provided by RPM Plus are in use and staff are trained in their use.</li> </ul> <p><b>Infrastructure and Storage of ARV Medicines</b></p> <ul style="list-style-type: none"> <li>• The ART service is being provided in a congested area of the hospital.</li> <li>• The VCT and ART clinic are all close to each other but in one of the crowded units of the hospital.</li> <li>• CDC has built a structure to house three physicians, a waiting area, VCT/lab, and a one- room pharmacy and data room, but the rooms are very small.</li> <li>• The current ART pharmacy is in the main pharmacy and ART patients get their prescriptions filled through the booths and not in the counseling area.</li> <li>• Counseling is also done in the booth. The system is good in the sense that it does not create discrimination between ART and other patients.</li> <li>• The main store has been renovated by RPM Plus and an office created for the store attendant.</li> <li>• There are still obsolete medicines and equipment that awaits disposal and the hospital is waiting for DACA to respond.</li> <li>• The store space is clogged with donations of wheel chairs, crutches, and stretchers that the hospital is ready to donate to other facilities.</li> <li>• The removal/donation has not materialized and immediate action needs to be taken to free up space for active products.</li> </ul> <p><b>Plan</b></p> <ul style="list-style-type: none"> <li>• After looking at the space planned for the ART pharmacy in the CDC structure, it is proposed that an extension to the structure be made so that there will be adequate counseling/dispensing, data processing, and storage areas.</li> </ul>	<ul style="list-style-type: none"> <li>• RPM Plus engineer will follow up with the planned activities and design the expansion plan.</li> <li>• Crutches, wheel chairs, and stretchers occupying space need to be donated or transferred to other facilities that can use them effectively.</li> </ul>

Health Facility	Observations	Recommendation/Action
20. Bishoftu Hospital (Oromia Region)	<p><b>General</b></p> <ul style="list-style-type: none"> <li>• The hospital Director of the hospital was unavailable during the visit, so the RPM team met with the ART physician, nurse, and matron.</li> <li>• Current ART patient uptake is 88.</li> <li>• The hospital is one of the second cohort ART hospitals that initiated ART after September 2005.</li> <li>• The hospital has different sources of ARVs with non-standard formulations that make harmonization of regimen.</li> <li>• The source of concern is the NGO Ratson which is making triple combinations available without ensuring continuity of the supplies.</li> </ul> <p><b>Staffing:</b></p> <ul style="list-style-type: none"> <li>• The staff are trained in ART MIS and provided with the forms and register, and are currently reporting on medicine use, patient uptake, and defaulting.</li> </ul> <p><b>Infrastructure and Storage of ARV Medicines</b></p> <ul style="list-style-type: none"> <li>• The ART service is organized in an old structure with crowded corridor as waiting area.</li> <li>• There is a room for the physician, a small VCT, a counseling room and data room.</li> <li>• The ART pharmacy is located in a room made available by the dental unit for temporary use (not visited).</li> <li>• The main store that carries ARVs is not visited.</li> </ul> <p><b>Plan</b></p> <ul style="list-style-type: none"> <li>• The hospital is planning a renovation of this structure, which may not make a major difference.</li> <li>• PMTCT is being provided from an extremely small room unfit for such a service.</li> <li>• It has been learned that the hospital has received renovation fund from the region to strengthen ART services.</li> <li>• The ART Consultative Team design has been shared with the hospital ART team so that they will discuss this as an option to construct a stand-alone ART unit to accommodate all the basic services. The team was enthusiastic about the design.</li> </ul>	<ul style="list-style-type: none"> <li>• RPM Plus engineer will follow up with the planned activities with Columbia University.</li> </ul>

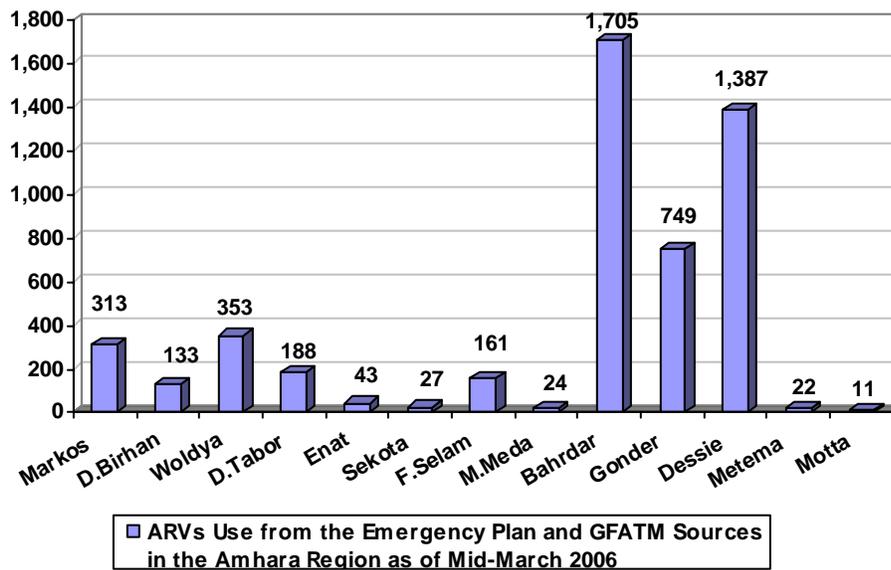
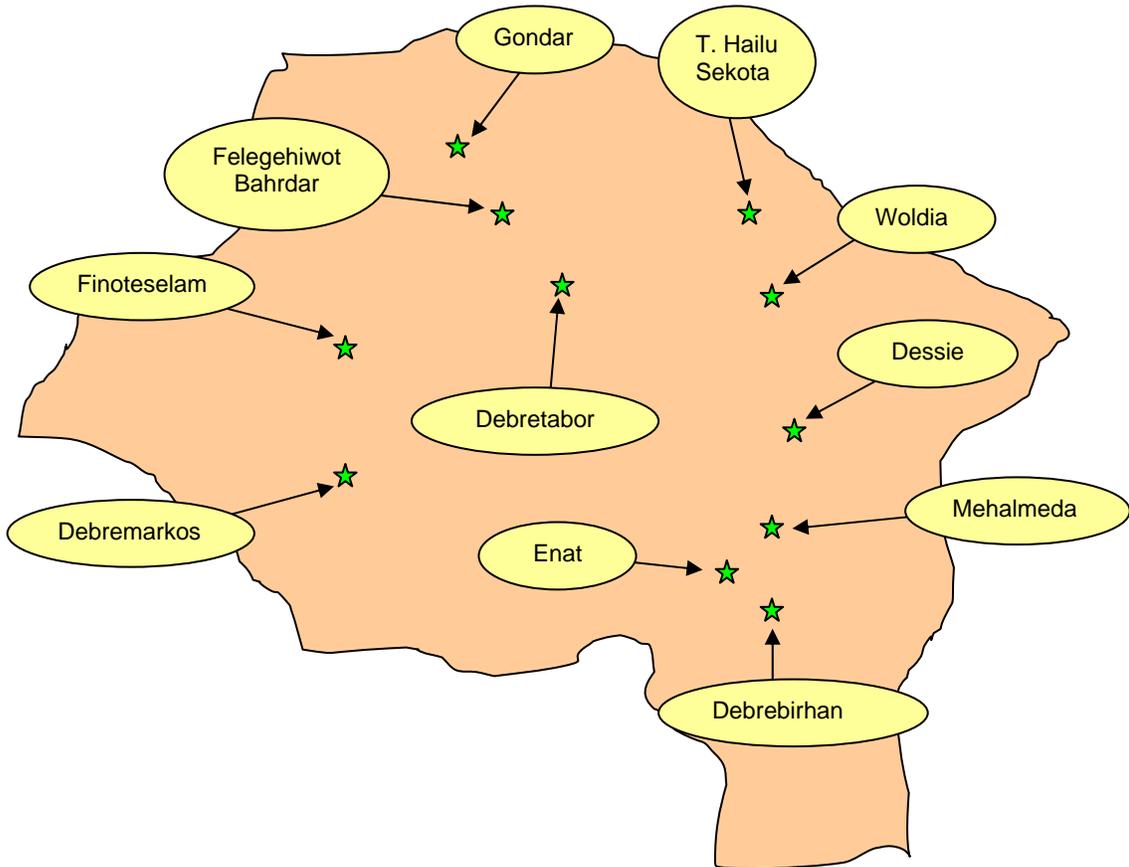
Health Facility	Observations	Recommendation/Action
21. Adama Hospital (Oromia Region)	<p><b>General</b></p> <ul style="list-style-type: none"> <li>• The hospital Director conducted a tour and discussed ways of improving the pharmacy services in the hospital.</li> <li>• The hospital is one of the first cohort ART hospitals that initiated ART in March 2005.</li> <li>• Current ART patient uptake is 1,482.</li> </ul> <p><b>Infrastructure and Storage of ARV Medicines</b></p> <ul style="list-style-type: none"> <li>• ART service is being provided in one area except for the pharmacy which is located in a different part.</li> <li>• The unit has a good data area, two clinics, and VCT nearby.</li> <li>• There is a nice waiting area.</li> <li>• Columbia University has supported the effort in creating this professional look.</li> <li>• The pharmacy was overhauled and provided with adequate space, booths, and furniture by RPM Plus to make it a model one.</li> <li>• The pharmacy, however, lacks adequate furniture and shelving, which needs to be provided by RPM Plus soon.</li> <li>• The main store has been adequately renovated and improved to appropriately handle ARVs and related products by RPM Plus.</li> </ul>	

Health Facility	Observations	Recommendation/Action
22. PHARMID (Addis Ababa)	<p><b>General</b></p> <ul style="list-style-type: none"> <li>• Mr. Daniel joined two teams that visited PHARMID, one from IOM and the other from RPM Plus, which was there to introduce Orion medicine management software.</li> <li>• The service provided by PHARMID under two contracts to handle the clearance, transport, warehousing, and distribution of ARVs has been satisfactory.</li> </ul> <p><b>MIS</b></p> <ul style="list-style-type: none"> <li>• The inventory management system that PHARMID has recently installed through a consultancy arrangement with a local IT group has been acknowledged by the Orion team to be comprehensive and functional.</li> </ul> <p><b>Storage and Distribution of ARV Medicines</b></p> <ul style="list-style-type: none"> <li>• The ARVs are boxed and stored on pallets in a different room exclusively set aside for ARVs.</li> <li>• The ARVs are either delivered direct to the hospitals or the regional PHARMID stores for requests to the catchment hospitals according to the distribution plan provided by RPM Plus.</li> <li>• Preliminary discussions were held with general manager to see the possibility of transferring ARVs from MoH/PASS for eventual distribution/delivery to hospitals through a unified system. PHARMID has indicated willingness and ability to handle this additional service.</li> </ul> <p><b>Infrastructure</b></p> <ul style="list-style-type: none"> <li>• PHARMID has recently completed the construction of one large warehouse in its central premise and hopes to make it the state-of-the-art store.</li> </ul>	

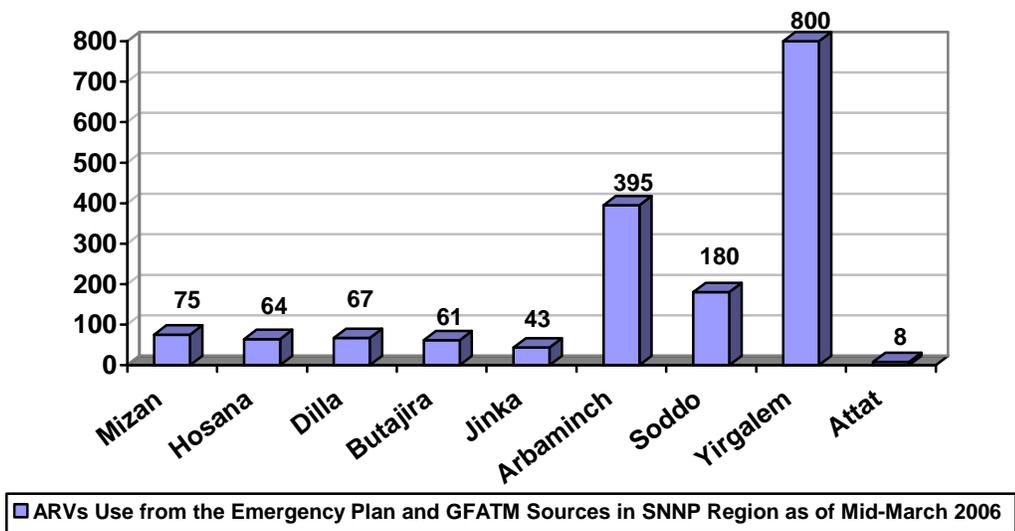
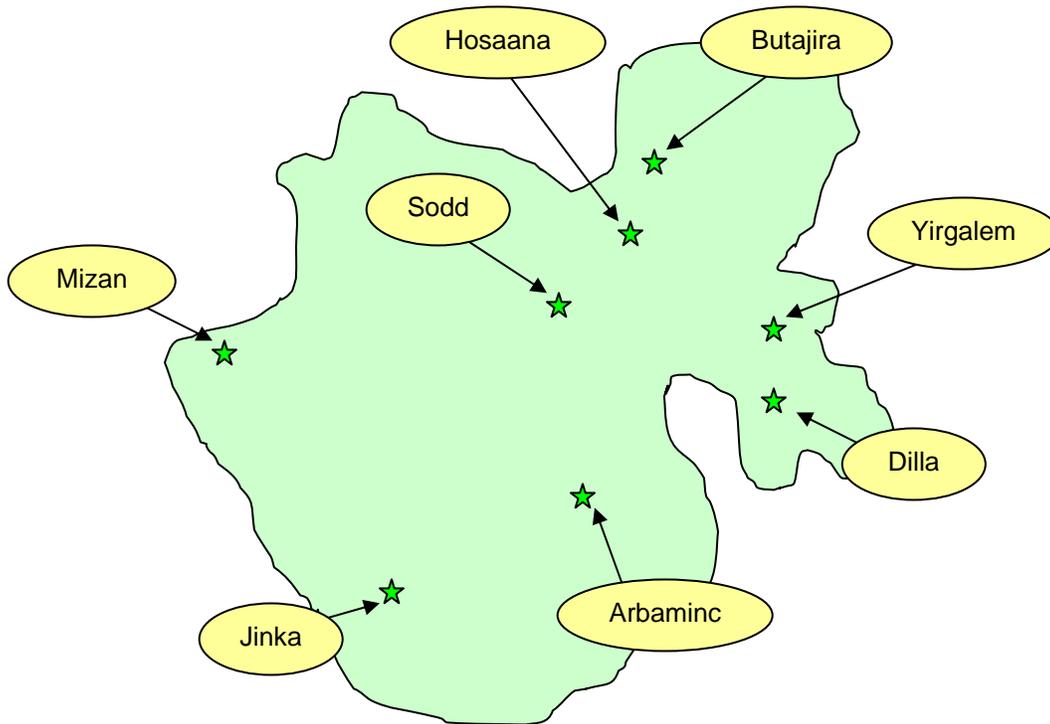


## ANNEX 1. REGIONAL MAPS AND CHARTS SHOWING FACILITY PATIENT ARV UPTAKE

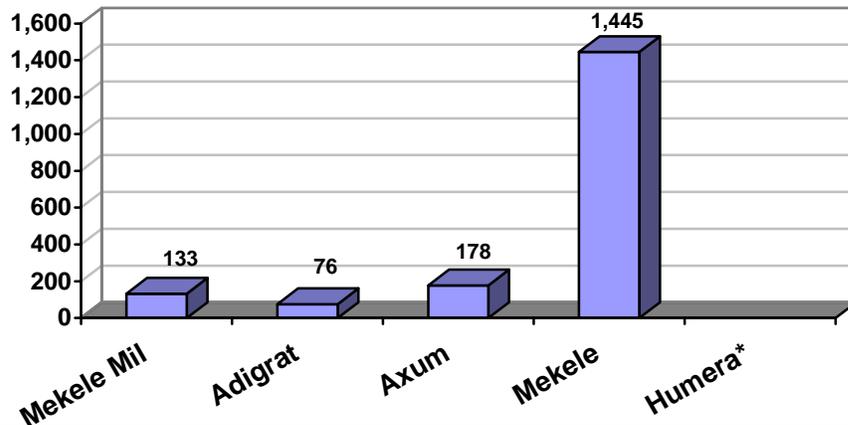
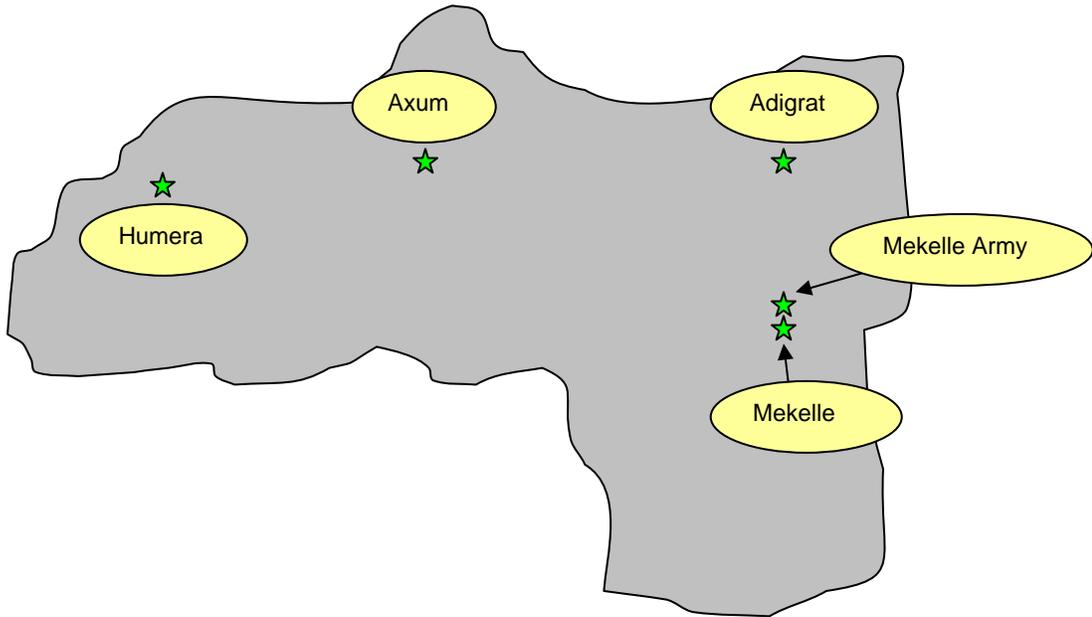
**Amhara Region ART Hospitals (MoH/GFATM and the Emergency Plan),  
December 2005—RPM Plus/Ethiopia**



**SNNP Region ART Hospitals (MoH/GFATM and the Emergency Plan),  
December 2005—RPM Plus/Ethiopia**



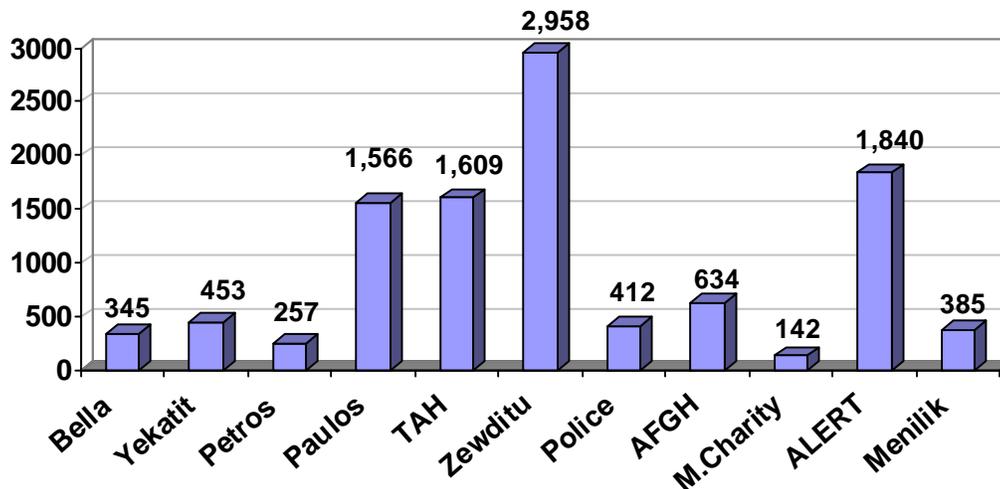
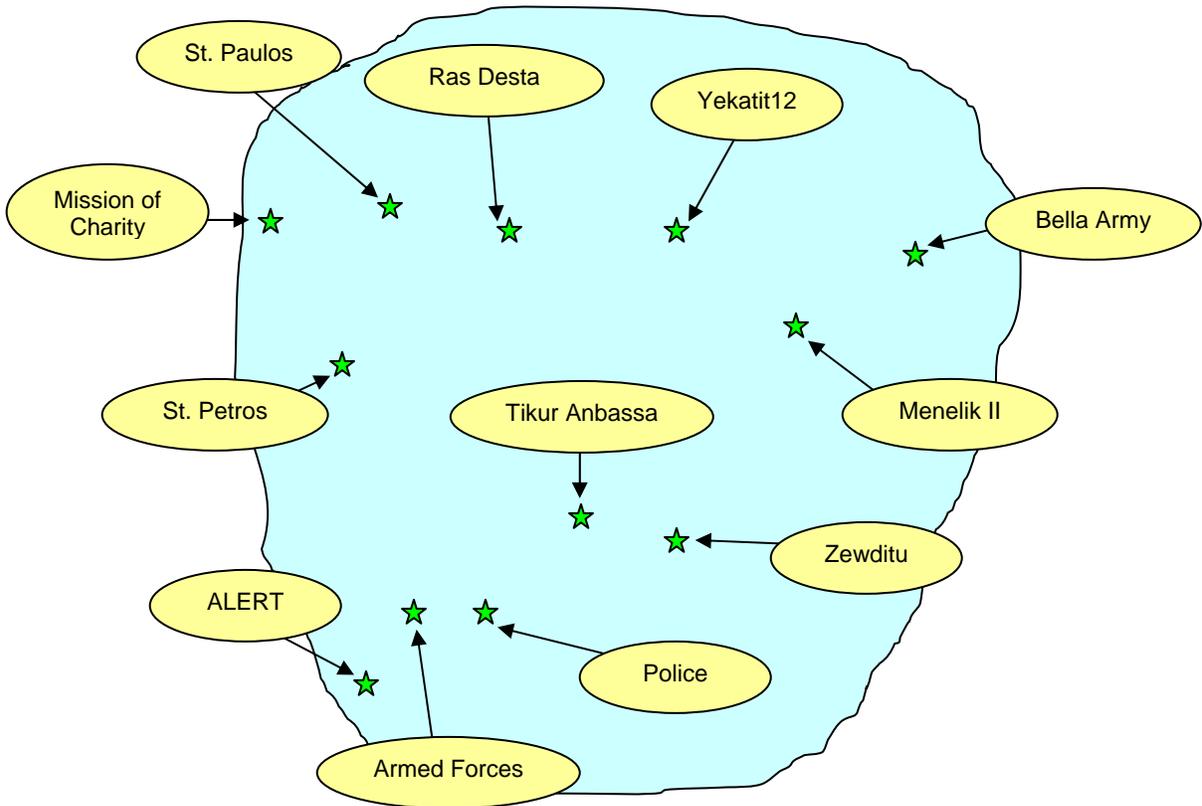
**Tigrai Region ART Hospitals (MoH/GFATM and the Emergency Plan),  
December 2005—RPM Plus/Ethiopia**



■ ARVs Use from the Emergency Plan and GFATM Sources in Tigrai Region as of Mid-March 2006

\* There was no information available for Humera.

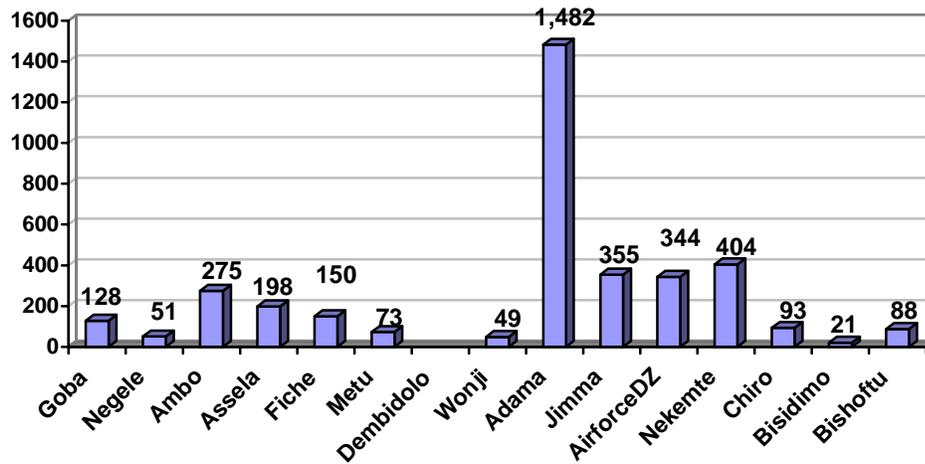
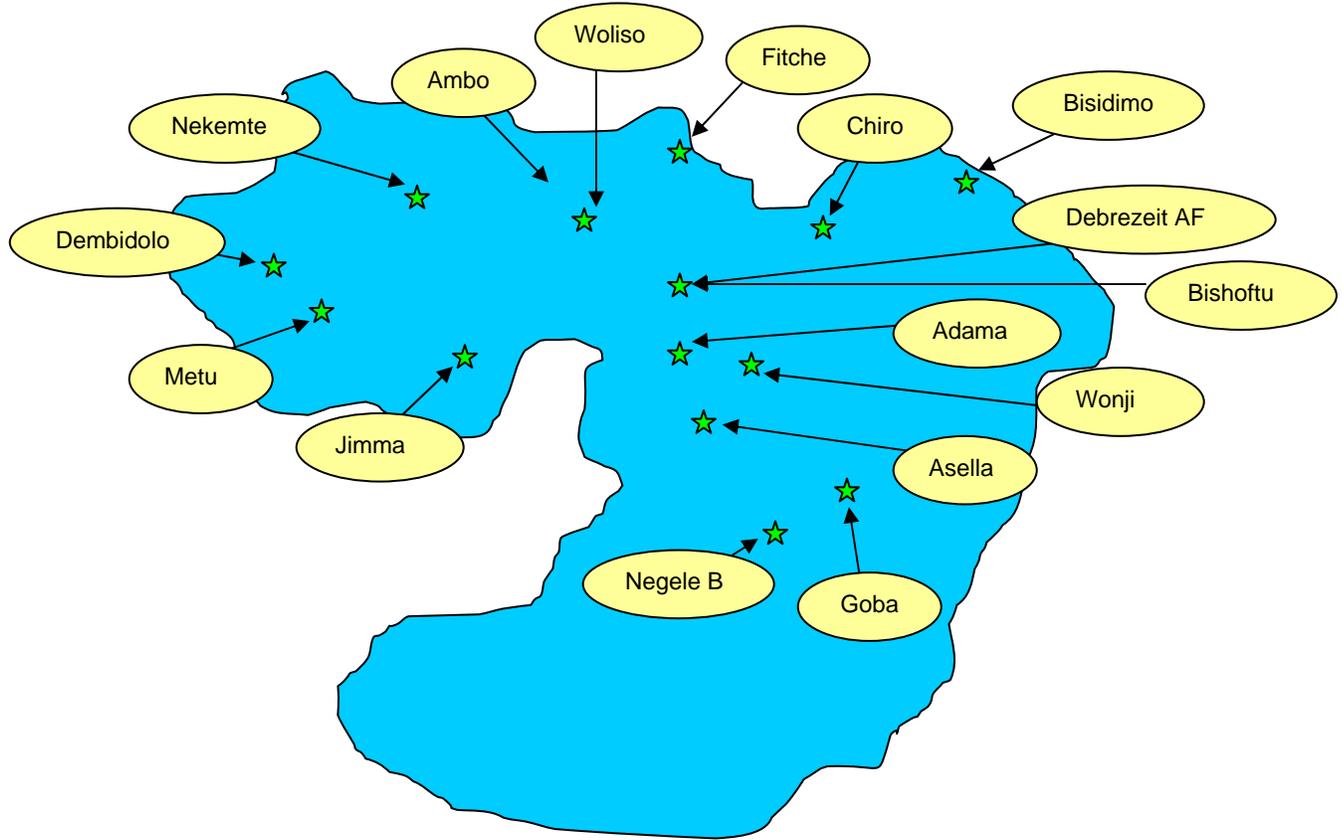
**Addis Ababa Region ART Hospitals (MoH/GFATM and the Emergency Plan), December 2005—RPM Plus/Ethiopia**



■ ARVs Use from the Emergency Plan and GFATM in Addis as of Mid-March 2006

**Oromia Region ART Hospitals (MoH/GFATM and the Emergency Plan),  
December 2005—RPM Plus/Ethiopia**

★ Addis Ababa (Federal Capital)



■ ARVs Use from the Emergency Plan and GFATM Sources in Oromia Region as of Mid-March 2006

**Afar, Benshangul, Gambella, and Somali Regions ART Hospitals (MoH/GFATM and the Emergency Plan), December 2005—RPM Plus/Ethiopia**

