Addis Ababa University
School of Graduate Studies
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An Assessment of Antiretroviral Therapy (ART) Patients Monitoring System In Addis Ababa

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List of Graphic Representations

Acronyms

AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral Therapy
ARV	Antiretroviral
DDIU	Data Demand and Information Use
FMOH	Federal Ministry of Health
HAART	Highly Active Antiretroviral Therapy
HIV	Human Immune-deficiency Virus
HMIS	Health Management Information System
HMN	Health Matrix Network
HSDP	Health Sector Development Program
MEASURE	Monitoring and Evaluation to Assess and Use Results
MOH	Ministry of Health
NAC	National Advisory Committee
OI	Opportunistic Infection
PI	Protease Inhibitor
PLWHA	People Living with HIV/AIDS
PMTCT	Prevention of Mother To Child Transmission

PPD	Planning and Program Department
RHB	Regional Health Bureaus
STD	Sexually Transmitted Disease
STI	Sexually Transmitted Infection
TB	Tuberculosis
VCT	Voluntary Counseling and Testing
WHO	World Health Organization

Abstract

The search for an HIV medicine dates back to the 1980's where advances were made using monotheraphy. Today, the HIV therapy is based on the use of a combination of drugs known as highly active antiretroviral therapy (HAART). Ethiopia adopted a policy of antiretroviral (ARV) drug supply and use in July 2003 and moved towards free ARV treatment in January 24, 2005. Since the start of the program, data was collected about patients taking the medicine. The collected data was to be used to aid decision making concerning the program and the overall HIV situation.

The objective of this study paper is to assess the Ethiopian Antiretroviral Therapy Patient Monitoring System and its function in Addis Ababa. For the study, four public, Zewditu, Menilik II, St. Peter, and Yekatit 12, and three private, Bethezatha, Zenbaba and Bethel Hospitals were selected. The primary data was collected from ART personnel, data clerks, nurses and doctors. In addition, in-depth interviews were conducted with key informants from relevant agencies.

The collected data was analyzed based on a conceptual framework, Data Demand and Information Use, which stressed the interplay of three determinants of a system. These determinates are, Behavioral, Technical and the Determinants at the System and Individual Level. The process of the antiretroviral patient data flow was also discussed to give a clearer picture of the system.

The findings of the study have shown that there is a strong sense of responsibility among employees working in the ART section. Though the sections are understaffed and overextended in their efforts, the staffs do their best in aiding patients and colleagues. Supervisors have had roles to play in the creation of a good working environment.

Whatever the effort of the staff, a number of improvements could be undertaken to advance the system. For one, the process of data flow requires standardization and could be highly improved if the use of the software under tasting was accelerated. Internet use also would have a great impact in speeding up the reporting process. The reporting forms lack relevant fields in some cases and sometimes ask redundant questions in other situations. This situation creates feelings of boredom in the already underpaid employees. Thus, elimination of these unnecessary questions will have a positive impact in the behavior of employees.

In conclusion, the study has identified a number of problems in the determinants. The majority of the identified problems revolve around personnel. However, in designing the various correcting interventions, the interaction among the determinants and effect of one determinant on another should be kept in mind.

CHAPTER ONE

1.1 Background

The human immune-deficiency virus (HIV) has created an enormous challenge worldwide. HIV attacks the CD4 cells that play a major role in maintaining the body's immune system. Several years after the initial infection with the virus, the number of CD4 cells in the victim's blood falls to below 200 per cubic millimeter, leading to infections such as tuberculosis (TB), septicemia and pneumonia, which otherwise the person would have been able to resist (PANOS, 2006).

Since recognition of the disease, HIV has infected close to 71 million people, and more than 30 million have died due to acquired immune deficiency syndrome (AIDS) (MOH, 2005). By the end of 2005, an estimated 38.6 million [33.4 million–46.0 million] people worldwide were living with HIV, some 4.1 million [3.4 million–6.2 million] became newly infected, another2.8 million [2.4 million–3.3 million] lost their lives to AIDS. Overall, the HIV incidence rate (the proportion of people who have become infected with HIV) is believed to have peaked in the late 1990s and to have stabilized subsequently, notwithstanding increasing incidence in several countries (UNAIDS, 2006).

More than 66% of the 40 million plus people living with HIV/AIDS (PLWHA) are in Sub-Saharan Africa, where AIDS is the leading cause of death (MOH 2005). In a continent where more than 18 million have died thus far and another 28 million are living with the virus (most of whom are in the prime of their lives as workers and parents), the social consequences are also dreadful. More than 12 million African children have been orphaned, life expectancy is dropping, family incomes are being decimated, and agricultural and industrial efficiency is declining because of the epidemic (UNAIDS, 2002:1).

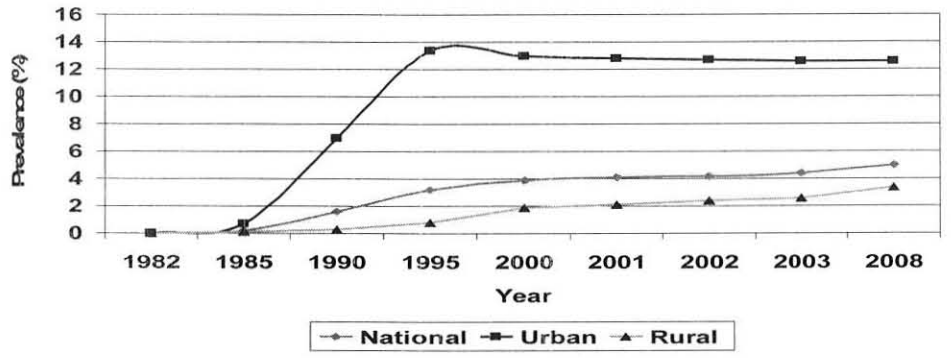
Highly Active Antiretroviral Therapy (HAART) was the breakthrough in the industrialized world, leading to the reduction of mortality and the improvement of quality of life of PLWHA. Antiretroviral (ARV) drugs also significantly lowered the rate mother to child transmission of HIV. Thus antiretroviral therapy (ART) has become an integral part of the continuum of HIV care (MOH, 2005).

Between 2001 and 2005, the number of people on antiretroviral therapy in low- and middle-income countries increased from 240 000 to approximately 1.3 million. Expanded treatment access was estimated to have averted 250 000 to 350 000 AIDS deaths between 2003 and 2005. Globally, however, antiretroviral drugs only reach one in five people who need them (UNAIDS, 2006).

Epidemiology of HIV/AIDS in Ethiopia:

Ethiopia's HIV/AIDS epidemic began in the mid-1980s. The first serum samples to contain HIV antibodies were analyzed in 1984 and the first AIDS cases were diagnosed in the capital city, Addis Ababa, in 1986 (Lester et al, 1988; Hailu et al, 1989). Two years later, in 1988, high rates of HIV prevalence were detected among long-distance truck drivers (13 per cent) and commercial sex workers (17 per cent) living along the country's main trading roads (Mehret et al, 1990a; Mehret et al, 1990b). Since then the epidemic has expanded rapidly throughout the country (Figure1).

Figure 1: Estimated and projected adult prevalence, 1982-2008. [Source: Diseas Prevention and Control Department, FMOH, June 2004]



At the end of 2005, according to UNAIDS's high scenario estimate, a total of 1.3 million adults and children were living with HIV/AIDS in Ethiopia (UNAIDS, 2006). AIDS has become the leading cause of mortality in the 15–49 age group, killing adults in the most productive phases of their lives. In 2005 alone an estimated of 130,000 adults and children died of AIDS in the country. Life expectancy in Ethiopia is falling as a result of the epidemic and is expected to drop to 50 years by 2010 from a previous estimate of 59 years. The country also has one of the largest populations of children orphaned by AIDS in sub-Saharan Africa. The high UNAIDS scenario estimate put the number of AIDS orphans in Ethiopia at 870,000 at the end of 2005.

ART in Ethiopia

With increasing access to ART and recognition of its positive impact in improving the lives of PLWHA, the Ethiopian government through the MOH endorsed a policy on supply and provision of antiretroviral drugs in 2002. The policy demonstrates the Ethiopian government's political commitment to improving access to ART for its population. The policy

stresses the government's commitment in several aspects, including mobilizing all stakeholders; allowing the tax-free importation of antiretrovirals (ARVs); lowering the price of ARVs through negotiation; encouraging international initiatives on ART in the country; and promoting research on ART (www.etharc.org).

Initially hospitals around the country were providing fee-based ART services to patients at a monthly cost ranging between 300 and 700 Birr, depending on the regimen used. In a move to make ART more accessible, the government launched the free ART initiative on 24 January 2005. This demonstrated its commitment towards the global "3 by 5" initiative that aims to have 3 million people in developing and middle income countries on treatment by end 2005.

The ART program of Ethiopia

In Ethiopia the introduction of ARV treatment dates back to 1998, when very few patients in Addis Ababa were receiving drugs from relatives living abroad or through non formal market at very high prices (MOH (c) et al, 2005).

The delivery of antiretroviral therapy in resource-poor settings, once thought impossible, has been shown to be feasible. The prices of antiretroviral drugs, which until recently put them far beyond the reach of low-income countries, have dropped sharply. New institutions such as the Global Fund to Fight AIDS, Tuberculosis and Malaria and ambitious bilateral programs, including the United States Presidential Emergency Plan for AIDS Relief, have been launched, reflecting an exceptional level of political will and unprecedented resources for the HIV/AIDS battle (WHO, 2003).

Following intensive advocacy from concerned bodies the government of Ethiopia adopted the policy of ARV drug supply and use in July 2003 and in a move to make ARV treatment more accessible launched the free ARV treatment initiative on January 24, 2005. Forty nine hospitals (all public) were selected to provide free ARV treatment; these included seventeen public hospitals that were already providing low cost ARV treatment. About twenty of these forty nine hospitals had started free ART in March/April 2005(MOH (c) et al, 2005).

In the following sections, as listed in the 2005 Ministry of Health's *Guideline for Implementation of Antiretroviral Therapy in Ethiopia*, the guiding principles, goal, access and eligibility to the ART program in Ethiopia will be briefly presented. Though this is the official guideline and will be reviewed to give background information, the guideline has not been updated to include current changes. One obvious improvement has occurred in the eligibility criteria. Today the only eligibility criterion is the clinical one.

GUIDING PRINCIPLES

Since the start of ART in 2003, Ethiopia has developed a guideline for the implementation of ART. In it, the Ethiopian ministry of health bases the ART program on the following guiding principles:

- ART, which is a comprehensive service, will be an integral part of the HIV continuum of care.
- The chronic care model will be applied to deliver ART.
- Treatment and clinical procedures will conform with national ARV treatment guidelines, which are based on international standards and best practices.

- Greater involvement of PLWHA will be encouraged.
- Equitable universal access will be strongly promoted.
- National prevention strategies will be emphasized.
- The National ART Program will strengthen the national health care system.
- Efforts will be made to ensure sustainability.
- Only one National ART Implementation Guideline will be followed.
- Public-private partnership will be encouraged and promoted.
- National and international networking will be valued and supported.

GOAL

The goal of the ART program, according to the Ministry of Health is to strengthen the health care system of the nation. The national ART program will be implemented as a safe, effective and equitable program as part of an HIV Continuum of Care.

ELIGIBILITY

Ideally, access to ART should be universal and equitable. However, the reality in Ethiopia today dictates eligibility criteria as a result of inadequate supply of free ARVs. Therefore, not all those who qualify for free ART will be able to get it initially. Since only a very limited percentage of those estimated to need ART will access the treatment initially, criteria for access to free ART, with a contingency quota plan, have been established. The framework for access to free ART will be transparent and participatory to ensure that all people will be considered for high quality services on equal basis.

At the national level, the following are the minimum access criteria, given in order of importance:

1. HIV regional prevalence and population density

2. Access priority for vulnerable groups (children, pregnant women, rape victims and health workers exposed in the line of duty)

At the facility level, access to ART should be prioritized based on:

1. Clinical initiation criteria
2. Clinician determined last resort priority
    a. The sickest with ART reversible conditions
3. Non-clinical priority
    a. The most vulnerable groups
    b. Gender equity, i.e. equal representation of women
4. Consultation with HIV/AIDS Committee at the facility level
    a. Based on best practices, it is highly recommended that facility HIV/AIDS committee serve as the ART access committee

In order to accelerate access to ART, the MOH issued a Road Map for 2005-2006. The Road Map provides clear targets for ART rollout and allows all actors to extract their individual targets to ensure timely delivery of their specific responsibilities. There has been a rapid scale-up in the number of sites providing ART; currently 93 hospitals are providing the service.

An estimated 277,757 PLWHA, including 24,201 children, required ART in 2006.[1] The national cumulative number of patients ever started on ART up to the now was reported to be over 60,000.

1.2 Statement of the problem

All programs need good statistics; the need is very acute where resources are limited and the cost of unwise allocation of funds can mean the

[1] AIDS in Ethiopia, 6th edition.

difference between life and death (HMN, 2006). This statement rings very true when the data being collected specifically targets health information.

The need for data collection and analysis often boils down to providing decision makers with relevant information so as to help them in making evidence-based decisions. Starting from the lower hierarchy to the top, effective decisions are made when they are based on actual data, and impact of the decisions made increases in significance as one goes higher in the hierarchy. At the upper levels, decisions are reflected in policies and programs formulated. According to Scott (2005), evidence-based policy-making is desirable for transparency of policy making and accountability of policy makers.

In the health sector, planning, systematic data gathering, analysis and interpretation are essential. These include monitoring clinical care, patient outcome improvement, logistical appropriateness, program cost-effectiveness and performance measures and improvement. The data gathering process must be clinically oriented, facility-based, simple, adaptable and integrated into the existing system (WHO, 2006).

In the collection of information on health and disease (as in *ART monitoring*), the magnitude and distribution of disease burden are crucial to inform policies, enable resource allocation to better address health needs, and monitor the impact of health interventions on health outcomes (Tangcharoensathien, et. al, 2006). In the one specific area of intervention, the effort to provide patients with Anti-Retroviral Treatment (ART) needs to be highly coordinated.

The necessity for a highly coordinated and efficient monitoring system becomes very severe when seen in light of the limited resources available and desperation of patients.

This study assesses the functionality of the monitoring system, its strength and pitfalls in order to indicate and suggest possible areas for improvement. This is the first study, to my knowledge, in the area of ART patient monitoring system in Ethiopia, and as such could provide good baseline information and form the basis for further studies.

1.3 Objectives

1.3.1 General objective

The general objective of this study is to assess the strength and weakness of the ART patients monitoring system in Ethiopia, and suggest solutions for improvement.

1.3.2 Specific objectives

- To describe the data flow process from generation to analysis
- To assess behavioral determinants of the system in terms of the knowledge, skills, attitudes, values, and motivation of the people who collect and use data.
- To assess technical determinants of the system in terms of data collection processes, systems, forms, and methods.

1.4 Methodology

1.4.1 Methods of data collection

The initial phase of the study involves a through review of available published and unpublished documents. Primary data/information was collected through semi-structured individual interview and site observation. Interviews were also conducted with key informants. The key informants were selected based on their unique positions in the

organizations they work in. These were personnel holding administrative position in the hospitals and professionals that have direct contact with the monitoring of data, both in Addis Ababa Health Bureau and HAPCO.

1.4.2 Sampling method

In Addis Ababa, ART has been provided by 9 public and 11 private hospitals, 21 health centers, 3 NGOs clinics and 3 Armed Forces hospitals. The hospitals, both paying and public, as of March 10, 2007, had 20, 556 patients which were currently on ART. The study focuses on hospitals and as such sampling was done on these private and public hospitals.

Though there are a total of 20 hospitals in the city, excepting the armed forces hospital, only 7 hospitals were selected for this assessment. Purposive sampling was used to select the hospitals based on the patient flow. Hospitals serving relatively small number of patients were disregarded and those with average and relatively higher number of patients were included in the study. The hospitals picked for this assessment were 4 public (i.e. Minilik II, Yekatit 12, Saint Peter, and Zewditu) and 3 private hospitals (i.e. Bethezata, Bethel and Zenbaba). These hospitals were reported to serve about 43% of patients on ART in Addis Ababa.

Indicators

The conceptual framework adopted for the study has provided a number of indicators in relation to the technical, behavioral, system and individual level determinants. This study focuses on the following major indicators:

Technical Determinants:

- Training

- Standard of forms
- Data quality.

System and Individual determinants:

- Roles and responsibilities for information use,
- Understanding of the system,
- Decision making,
- Staff adequacy,
- Working environment
- Feed back mechanism

Behavioral Determinants:

- Team work,
- importance employees attach to their work
- motivation and incentives

1.5 Limitation of the Study

The study has some limitations that deserve mentioning. First, since the study was conducted only in Addis Ababa, some of its findings may not easily be extrapolated to the other parts of the country. Second, the fact that the study is predominantly based on experts' opinion means that it may partly suffer from biases arising from subjective judgments of individual respondents. Third, though the hospitals selected serve a great proportion of the ART patients, the response from the twenty four respondents from the seven hospitals may not adequately reflect the situation in the entire system.

CHAPTER TWO

2. LITERATURE REVIEW

Health information system

> ***Health Information System**: A system that integrates data collection, processing, reporting, and use of the information necessary for improving health service effectiveness and efficiency through better management at all levels of health services (WHO, 2004).*

As stated earlier all governments need quality information and statistics about their citizens. The purpose of collection may differ based on the need the government wants to address but the ultimate goal of a national health information system is to collect, process, report and use health information and knowledge to influence policymaking, program action and research (AbouZahr and Boerma, 2005).

There are a wide range of data generation methods for health information systems. These include health facility data, administrative returns, household surveys, censuses, vital registration, national health accounts and health research (AbouZahr and Boerma, 2005). While national health information systems vary from country to country, in their broadest sense, they include all sources of health information, encompassing vital events monitoring; service statistics and surveillance; population and housing censuses; periodic surveys; national health accounts; and resource tracking (MEASURE, 2006).

The presence of a health system is not sufficient to guarantee quality data generation .A quality health system is a client-centered, integrated, responsive and cost-effective system that includes the continuum of care from health promotion and prevention. Such a system is based on a regular assessment of people's needs and wants, and monitors itself

based on a philosophy of continuous quality improvement. (Shaikh and Rabbani, 2005)

The health information system is heavily biased towards qualitative data, in terms of descriptions of health status and mortality of populations over time, analysis of causation of health problems, quantification of associations between health outcomes and risk or protective factors, and assessment of the effectiveness of public health interventions (AbouZahr and Boerma, 2005).

Through all the data generation methods and various types of national health information systems, certain prerequisites need to be in place for a health information system to function. HMN (2006) lists these five prerequisites as:

1. *Information policies*: Supportive legislative and regulatory environment.
2. *Financial resources*: Investment in data collection, analysis and utilization from domestic and international sources.
3. *Human resources*: National technical expertise and leadership, sub national expertise to ensure observation of data-quality standards and data use.
4. *Communications infrastructure*: Infrastructure and policies for the transfer of information between producers and users within and outside the health system.
5. *Coordination and leadership*: Well-established mechanisms to lead health information systems effectively and efficiently.

The collected health information is used at three different levels of society. As AbouZahr and Boerma (2005) elaborate the first use of

information occurs at the level of individuals and communities where information is needed for effective clinical management and for assessing the extent to which services are meeting the needs and demands of communities. The second, at the level of the district, health information enables health planners and managers to take decisions regarding the effective functioning of health facilities and of the health system as a whole. Finally at higher levels, health information is needed for strategic policy-making and resource allocation.

As defined by the WHO the word "system" implies a connected whole or organized process. But in practice, most country health information systems lack such cohesion, having developed in a piecemeal way, fashioned by administrative, economic, legal or donor pressures and are invariably highly complex. Resulting in fragmentation of health information systems, the dispersal and dilution of responsibility, and the competing interests of different actors from different sectors (AbouZahr and Boerma, 2005, HMN, 2006).

2.1.1 Health Management Information Systems (HMIS)

> *Health Management Information System: An information system specially designed to assist in the management and planning of health programs, as opposed to delivery of care (WHO, 2004).*

A health management information system (HMIS) is an essential tool for strengthening planning and management in the health facilities. Any conventional HMIS enables monitoring of service delivery in terms of access, coverage, expenditure, human resources, disease profiles and health outcomes (Shaikh and Rabbani, 2005).

Health management requires timely and accurate information from various sources to be able to monitor the health status of the population, the provision of services as to the coverage and utility, drugs stocks and consumption patterns, equipment status and availability, finances and personnel on a regular basis. Accurate, relevant and up-to-date information is essential to health service managers if they are to recognize weaknesses in health service provision and take actions that will improve service delivery (Bodavala, 2000).

The term health management information systems is generally used to describe the following subsystems

Various sub- components/sub-systems of Health information System

Epidemiological surveillance	Identification/notification of diseases and risk factors, Investigation, follow-up, control measures
Routine service reporting	Hospital/health center based indicators on performance of the various services
Specific program reporting	Various programs in operation in a particular country, topically include; Reproductive child health, AIDS, MALARIA, TB, LEPROSY, Integrated Child health and many other programs under different departments, names
Administrative systems	Account and financial systems Drugs management (procurement, storage and delivery) Personnel management Asset management (equipment/buildings etc) Maintenance system
Vital registration	Birth, deaths, migration etc.,

Source: Ranganayakulu Bodavala, Evaluation of Health Management Information System in India: Need for Computerized Databases in HMIS (2000)

One of the reasons that make health information management systems difficult to conduct is that measurement in health is conceptually and technically complex. It requires *statistical, public health* and *biomedical* knowledge and expertise unique to each disease or program area. As a result different health statistics vary greatly in terms of reliability and

validity of the indicators, and feasibility and accuracy of measurement instruments (HMN, 2006).

2.1.2 HMIS in Ethiopia

As in other developing countries, the HMIS in Ethiopia has its limitations. But to its credit, the final report on Evaluation of Health Sector Development Program II (HSDP) states, HMIS has shown some improvements over time, and the statistical reports based on data derived from various sources has been published and disseminated every year by the FMOH/PPD. The report also recommends the need to address issues around standardization of data collection and reporting procedures; and to shift the focus from merely compilation of information to use of data for decision-making purposes (Federal Ministry of Health and Regional Health Bureaux, 2006).

According to the recommendations and targets set by HSDP II, the Federal Ministry of Health (FMOH) has revised and reduced the number of reporting formats from 25 to 12. Efforts are also being made to establish networking between FMOH and Regional Health Bureaus (RHBs). A national HMIS advisory committee (NAC) has been established with representation from different stakeholders (MOH b, 2005).

> *Most of the regions have adopted reporting systems on major health indicators and health sector activities based on formats developed jointly by the FMOH and the regions. In Tigray, focal persons for HMIS have been assigned at regional, woreda and health facility levels. Networking through email has been implemented in 30 Woredas of this region. SNNPR RHB has also adopted a generic reporting system, produced guideline, trained staff at all levels and instituted a computerized data system. Other regions have hired data collection staff* (MOH b, 2005).

Though the above-mentioned cases present improvements, obstacles remain. The Ministry of Health (MOH b, 2005)) lists the challenges as; lack of coordinated effort and leadership, lack of strategy and policy, shortage of skilled human resource and lack of guideline. The timeliness and completeness of HMIS reporting remains poor, and such delays contribute to the failure (at all levels) to use data as the basis for informed decision-making in planning and management. In addition, parallel reporting mechanisms persist with programmatic and donor-supported initiatives resulting in multiple reporting formats and an increased administrative workload.

In relation to ART, the HMIS must support the monitoring of program implementation, the documentation of patient care and outcomes, as well as logistical capacity and performance. In order to have a unified national ART program, tools, systems and reports must be standardized. MOH, as the responsible body, must lay down mechanisms to eliminate uncoordinated individual operations. Regions, likewise, must assure that reporting materials, tools and systems follow national standards in support of the national HMIS system (MOH, 2005).

2.2 *Antiretroviral Therapy*

Anti-Retroviral Therapy (ART) is the administration of at least three different medications known as Anti-Retroviral drugs (ARV) in order to suppress the replication of the human immunodeficiency virus (HIV). ART is not a cure. It must be taken for life and is costly. ART is delivered as part of a comprehensive care, which includes Voluntary Counseling and Testing (VCT), the diagnosis and treatment of Sexually Transmitted Diseases (STDs), Tuberculosis (TB), Opportunistic Infections (OI), and the

prevention of mother to child transmission (PMTCT) as well as the treatment of pregnant women (www.etharc.org).

The search for an HIV medicine spans decades. In the years from 1987-1990, the first advances using monotherapy, with the drug brand named Zidovudine, were made (Volberding, 1990, Fischl 1990, cited in Hoffmann and Mulcahy, 2006). Zidovudine was first tested on humans in 1985, and introduced as a treatment in March 1987 with great expectations. Initially, at least, it did not seem to be very effective. The same was true for the drug class of nucleoside analogs, Zalcitabine, Didanosine and Stavudine, introduced between 1991 and 1994 (Hoffmann and Mulcahy, 2006).

In September 1995, the preliminary results of the European-Australian DELTA Study and the American ACTG 175 Study attracted attention (Delta 1995, Hammer 1996, cited in Hoffmann and Mulcahy, 2006). It became apparent that combination therapy with two nucleoside analogs was more effective than mono-therapy. Both studies demonstrated that it was potentially of great importance to immediately start treatment with two nucleoside analogs, as opposed to using the drugs sequentially (Hoffmann and Mulcahy, 2006).

In the fall of 1995, the licensing studies for three protease inhibitors (PIs), a second type of drug class, Ritonavir, Saquinavir and Indinavir, were pursued with a great amount of effort. Betwe en December 1995 and March 1996, all three PIs, first Saquinavir, followed by Ritonavir and Indinavir were approved for the treatment of HIV. The potential of the new drugs was slowly becoming apparent and in June 1996 at the World AIDS Conference in Vancouver, the strangely unscientific expression of highly active antiretroviral therapy (HAART) began to spread (Hoffmann and Mulcahy, 2006).

With the new knowledge of the incredibly high turnover of the virus and the relentless daily destruction of CD4+ T-cells, there was no longer any consideration of a latent phase and no life without antiretroviral therapy. In many centers almost every patient was treated with HAART. Within only three years, from 1994- 1997, the proportion of untreated patients in Europe decreased from 37 % to barely 9 %, whilst the proportion of HAART patients rose from 2 % to 64 % (Kirk 1998, cited in Hoffmann and Mulcahy, 2006). By June 1996, the first non-nucleoside reverse transcriptase inhibitor, a third drug class, nevirapine, was licensed and introduced. Also another PI, Nelfinavir, entered the market(Hoffmann and Mulcahy, 2006).

Even for the highly researched HAART, there were side effects. These side effects were termed as Lipodystrophy. The actual cause of Lipodystrophy remained completely unclear (Hoffmann and Mulcahy, 2006).

Recent studies have come to the conclusion that HIV remains detectable in latent infected cells, even after long-term suppression. The estimation of years that it would take to eradicate the HIV virus from a patient's system has gone up from a mere three years to seventy three years. To date, nobody knows how long these latent infected cells survive, and whether even a small number of them would be sufficient for the infection to flare up again as soon as treatment is interrupted (Hoffmann and Mulcahy, 2006).

2.2.1 ART Monitoring

> *Monitoring of a program or intervention involves the collection of routine data that measure progress toward achieving program objectives. It is used to track changes in program performance over time. Its purpose is to permit stakeholders to make informed decisions regarding the effectiveness of programs and the efficient use of resources (Frankel and Anastasia, 2007).*

The Ethiopian Ministry of Health believes that all stake holders need to be informed on the latest development concerning ART. According to the ministry, a well developed information management and Communication plan becomes a crucial component of the ART program because:

- A very complex treatment program is being scaled up very rapidly
- Treatment is to be taken for life and high rate of adherence is expected, allowing no room for supply interruption
- The program requires specific skills and resources in a resource limited setting

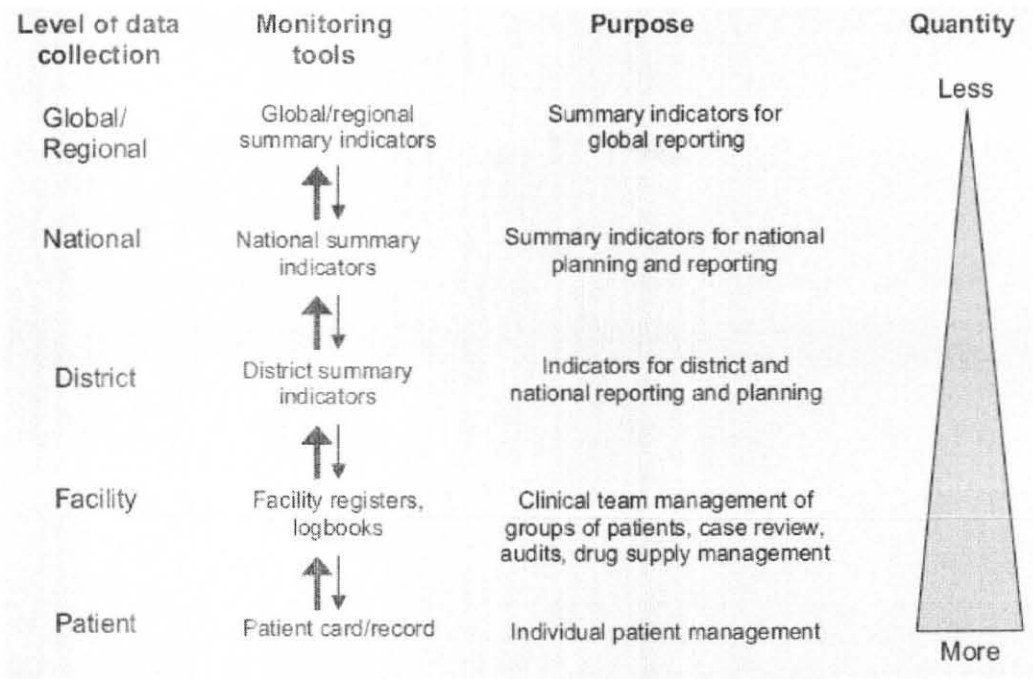
Establishing good chronic HIV care including ART requires forming and preparing a clinical team to provide continuity of HIV care. A key element of continuity of care is keeping a record which summarizes this care and allows each health worker or counselor to understand what has happened before in terms of the patient's HIV clinical stage, a summary of the patient's ART over time, weight and functional status and so on (WHO, 2006). Therefore, an ART program requires the highest degree of coordination and integration to succeed in a health care delivery system with very little or no experience. Strong information management and communication will serve as a backbone for this program (MOH, 2005).

The ability of countries to provide and sustain effective long-term HIV care with ART and prevention is critical. This requires an effective patient monitoring system integrated with care, prevention and treatment at the health facility. Monitoring the program by measuring key indicators and immediately feeding these back to improve program activities are essential to success (WHO, 2006).

HIV care information is generally important for tracking patients in HIV care, both prior to enrolment in ART and while receiving ART. In many countries, patients receiving HIV care are treated as acute and episodic cases. Following patients through HIV care before starting ART allows providers to monitor and manage symptoms, make referrals to psychosocial, nutritional and community support, and provide a direct link into treatment when the patient will benefit most from ART (WHO, 2006).

> *The quantity and detail of data needed is generally greater at lower levels of the system, where decisions on the care of individuals are made, than at higher levels where broader policy-making takes place. Too often, lower level managers are required to report vast quantities of data to higher levels but rarely receive any feedback. At the same time, the information overload at higher levels is such that the data are in practice seldom used effectively (AbouZahr and Boerma, 2005).*

Figure 2: HIV/ART monitoring at different levels of the health care system



Source: WHO Patient Monitoring Guidelines for HIV Care and Antiretroviral Therapy (ART) (2006)

In the Ethiopian ART monitoring system, the process of data management involves five steps. First physicians, nurses and pharmacists do the clinical documentation. Then the data is entered by a data clerk. The next step involves data managers who aggregate and then analyze the data. At the final stage reporting is done by the program coordinator (MOH, 2005).

2.2.1.1 Objectives of ART Monitoring System

The WHO "Patient Monitoring Guidelines for HIV Care and Antiretroviral Therapy" (2006) lists the specific objectives as:

1. Providing and facilitating national stakeholder consensus on a standardized minimum set of data elements to be included in patient monitoring tools;

2. Helping to establish a functioning patient monitoring system to enable the rapid scale-up of effective chronic HIV care, ART and prevention;

3. Providing considerations for HIV care and ART information systems design;

4. Introducing the practice of a simple cohort analysis for HIV patients on ART;

5. Mapping the standardized minimum set of data elements to the core ART program indicators and other internationally agreed upon indicators; and

6. Contributing to successful program monitoring, global reporting and planning through the measurement of indicators at the district, national and international levels.

2.2.1.2 Essential minimum standard HIV care and ART patient monitoring data

An important distinction must be made from the outset between what data to collect and how to collect them. The WHO (2006) guideline gives essential minimum standard HIV care and ART patient monitoring data broken down into four categories as:

- Demographic information
- HIV care and family status

- ART summary and;
- Patient encounters information

2.2.1.2.1 Demographic information

Demographic information is collected once at enrolment and updated with changes. Basic identifying data including name, sex, date of birth, age, marital status, address, telephone number and other contact information are generally self-explanatory. It is important that this information be as complete as possible and that there is a consistent way to record each item, particularly the date of birth.

2.2.1.2.2 HIV care and family status

HIV care history is collected at baseline for all patients enrolled in HIV care whether or not they have started ART and is updated as information changes. The information is generally related to how and why the patient entered into HIV care, and to details of the current facility providing care. This includes the date the patient tested HIV-positive (and subtype where available and needed), as well as the HIV status (if known) of immediate family members or partners.

Other essential HIV care information includes identifying the patients' entry point into care that is where they were referred from (PMTCT, TB, STI, etc.), any treatment history including PMTCT participation and the health unit and district of the facility where they are currently receiving HIV care. Additionally, the name of the medical officer or doctor at the first-level facility or clinical team overseeing the patient should be noted. Contact information for the patient's treatment supporter should also be collected. Finally, any drug allergies should be recorded in a visible place on the patient's chart either in a designated section on the patient card

or near the top so that this information is easily identifiable by the clinical team.

2.2.1.2.3. ART Summary

The ART summary data are collected as information becomes available or relevant. They include the baseline clinical status of patients when they start ART; regimen changes and other status changes thereafter; and interruptions with stop or lost and restart dates and reasons. The data cover the most important aspects of a patient's treatment history and are critical for patients to receive continuous care particularly when transferred to a new facility.

If a patient is not treatment-naive prior to starting ART at the health facility, it is important to determine, in as much detail as possible, past ARV drug regimens and the durations, including for PMTCT. In addition, it is important to collect the date the patient is medically eligible to start ART and why.

2.2.1.2.4 Patient Encounters Information

Patient encounter information is collected and updated every time a patient visits a health facility. In addition to the encounter date, information concerning the patient's clinical and follow-up status (stop, restart, lost, drop, transfer in/out or dead) should be collected. These include Functional status, WHO clinical stage, TB status, possible side-effects (including drug allergies), new symptoms, diagnoses or Opportunistic Infections, Laboratory results and Specifics on ARV drugs, prophylaxis and other medications. Finally, it is important to assess and record patient adherence to both treatment and prophylaxis at each encounter using a method or methods that have been agreed upon nationally. If non-adherence is reported, the reason(s) should also be noted.

2.2.1.3 Recording methods

Apart from the different kinds of forms, which will be presented later, to collect the set of data needed for ART monitoring, Ethiopia uses the following three methods (WHO, 2006).

2.2.1.3.1 ARV Clinic Patient Record

Ethiopia has adapted the standard WHO forms to distribute nationally. The forms have fields to be filled out concerning the patient's marital status, level of education, religion, husband / wife and dependent children at home, patient address, patient referral and care giver/emergency contact information.

While the registers and aggregated data forms are almost identical for reporting reasons, the country has opted to include a set of clinical intake forms. The clinical form has the advantage of taking a clinician through the intake process, ensuring coverage of the major parts of a patient's clinical history and provides a comprehensive overview of the patient, including social and economic circumstances. All forms come with written instructions on how to fill out the form which is a response to the high turnover among health workers at facilities.

2.2.1.3.2 HIV care/ART follow-up form

This form is used to collect information on the patient's functional status, TB status, WHO staging, side effects, drugs prescribed and information about opportunistic infections. The follow-up form in Ethiopia is similar to the generic patient card encounter page. However, due to the lack of a patient summary page, it also incorporates information from clinical intake forms to facilitate data transfer to the pre-ART register. In addition, the codes are more descriptive and provide users with a quick assessment of adherence.

2.2.1.3.3 Cohort analysis form

The term "Cohort" should not be confused with the typical meaning of "Cohort Studies". In patient monitoring of ART, a cohort is an ART start-up group consists of all patients starting ART in the same month. Cohort analysis compares baseline characteristics of patients who started on ART with their status at 6 and 12 months, then yearly.

While the Ethiopian version of the Cohort analysis form is almost an exact copy of the WHO form, it has added mean CD4 percentages for children and replaced the months and years with those from the Ethiopian calendar. In addition to the regular A3 size presentation of the form, Ethiopia has created poster-size laminated cohort forms to be filled out and displayed at facilities to show progress of patients on treatment.

All in all Ethiopia uses a total of seven forms. These are

1. Patient Registration Form
2. Past Medical/Treatment History Form
3. General Condition/Physical Exam Form
4. Clinical Review Form
5. Social Assessment Form
6. Art Adherence Counseling Form, and
7. Art Assessment And Plan Forms

CHAPTER THREE

3 CONCEPTUAL FRAMEWORK

3.1 Background

In recent years, the international community has focused increasingly on monitoring and evaluation as the areas where statistics should be used in support of policymaking (Scott, 2005). In this statement the concepts of data for policy making and monitoring and evaluation are shown to be interlinked.

While monitoring is defines as *"the routine, daily assessment of ongoing activities and progress"* (UNAIDS, 2002), it has a number of advantages. It helps to ensure the effective and efficient use of resources, objectively assess the impact of the project or program and help make informed decisions regarding program operations and service delivery based on objective evidence (Frankel and Gage, 2007).

The generation of data on any monitoring program is not an end by itself. As such the performance of a health information system should be measured by not only on the basis of the quality of data produced but on evidence of the continued use of these data for improving health system performance and health status (HMN, 2006).

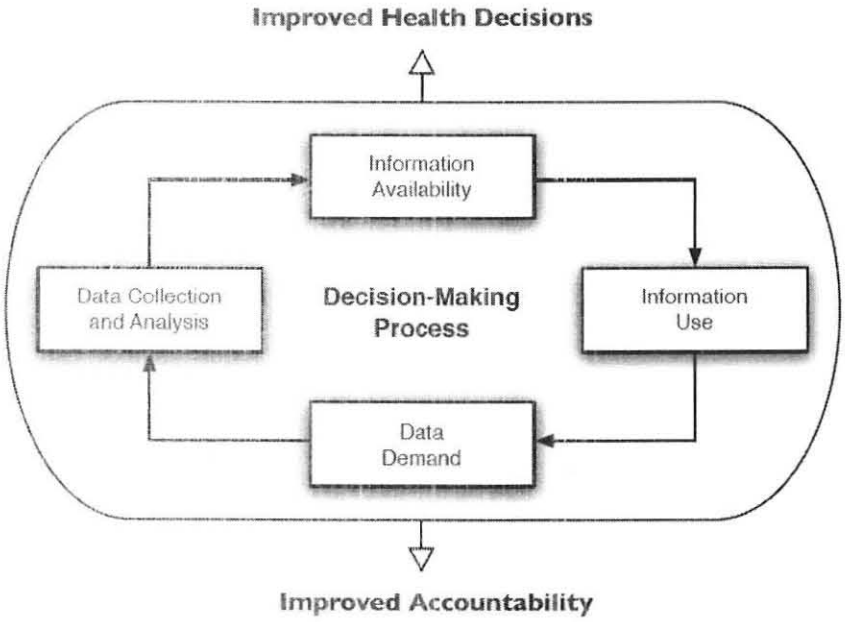
3.2 Conceptual Framework for Data Demand and Information Use

The conceptual framework for data demand and information use (DDIU) is developed by the organization named Monitoring and Evaluation to Assess and Use Results (MEASURE). Building on previous studies, its guiding premise is *"health data and information lack value unless they*

are used to inform decisions. As such, interventions that increase local demand for information and promote/facilitate its use (Data Demand and Information Use or 'DDIU' interventions) are critical to improving the effectiveness and sustainability of the health system (MEASURE 2006)."

In the subsequent sections, adapted from *Data Demand and Information Use in the Health Sector: Conceptual Framework by MEASURE/Evaluation* (2006) the basic ideas of the DDIU framework will be outlined.

Figure 3: DDIU as a cycle



The figure presents a framework for DDIU as a cycle that connects demand to use through the intermediate steps of data collection and analysis. Thus, ensuring the availability of health information.

In this framework a clear and consistent link exists between the use of health information and the commitment to improving the quality of data upon which it is based. On the human resource side the more positive experiences a decision maker has in using information to support a

decision, the stronger will be the commitment to improving the quality and timeliness of data collection systems.

3.2.1 Operational definitions

3.2.1.1 Data use

A definition of use must include the two key elements of the process: those who make decisions and the decisions they make.

A decision is a *choice* between two or more courses of action. For the purposes of DDIU, the definition of use includes awareness of decisions and choices. The decision maker must be explicitly aware of the decision he/she is about to make as well as at least two possible behaviors or courses of action to choose between

Two other aspects of use are also important:

1. Raw data are seldom useful for decision making and usually must be transformed into information that is usable and that relates to the issue being addressed. And

2. Data collection/generation, its transformation into information, and its use in decision making may be done by the same person. However, they are more likely to be done by different people that have varying levels of understanding about each other's work (Yinger, 2003 cited in MEASURE, 2006).

3.2.1.2 Data Demand

Demand is a concept distinct from use and it reflects, at least in part, a measure of the value that the stakeholders and decision makers place on the information, independent of their use of that information. For the

purposes of defining demand, stakeholders actively and openly request information.

Data demand requires both of the following criteria:

1. The stakeholders and decision makers specify what kind of information they want to inform a decision; *and*
2. The stakeholders and decision makers proactively seek out that information

3.2.2 Underlying principles

Seven additional principles that underlie the DDIU approach are listed below

1. *Decisions are choices made in support of a goal.* Where choices must be seen in the context of the goals of those making or wishing to influence the decision. While A *goal* is a desired outcome.

2. *All decisions are made on the basis of some information. Some* information is always used by decision makers in reaching their decisions. The actual information that is used may and will differ between decision makers. The issue is whether they are aware of all the available information and are using it.

3. *Stakeholders will want different types of information depending on the goal they are intending to achieve.* This postulate underlines the fact that as goals differ so will the information that will be required to reach the supporting decisions for the goals.

4. *There can be multiple (and possibly contradictory) goals.* Decision makers can have multiple goals, and that a decision taken to achieve one goal may have implications for another.

5. *Decisions can be made by a single individual or by a group.* Even if a single individual makes a decision, he or she may take stock of the views of others.

6. *Individuals will have different goals or different interpretations of the same goal even if they are involved in the same decisions. Consequently they may use different information to achieve the goal.* The different stakeholders involved in a decision may not have the same goals or objectives.

7. *Stakeholders often differ in their views about the importance of what information is needed to make the decision.* How and what information feeds into a decision depends on how the decision maker sees the decision linked to the goal. Two stakeholders who view the linkages differently will use different information or interpret the same information differently.

3.2.3 Determinants of DDIU

According to the framework, there are three determinant factors which limit or promote data demand and information use. These are:

1. Technical Determinants
2. System and Individual Level Determinants, and
3. Behavioral Determinants

Technical determinants

A system without a sound technical design, well-trained people, and clear norms and standards cannot produce the information needed for making decisions. Consequently, the path to improving the use of health information focuses mainly on introducing or upgrading technical skills,

changing the design of the data system, or updating the technology used to improve the availability and quality of data

Technical rigor is clearly needed in information systems; these essential elements and skills are at the core of an effective and efficient health information system. Nevertheless, technical interventions alone cannot translate into use of data on the ground. There should also be motivation of personnel to use the system in generating information and utilizing it. For data to be used consistently, the entire health system must place a high value on health information and be structured in a way that allows evidence-based decision making.

Determinants at the system and individual levels

The wider environment in which health system decisions are made includes the institutions and stakeholders that influence data users, as well as the data collectors and users. Structural constraints, such as poor roads, lack of telecommunications capacity, and insufficient quantities of appropriate human resources, present obstacles to timely and complete reporting of information.

The internal organization and culture of the health system also matters. A health system structured around vertical disease control programs, for instance, is often at odds with an integrated district-level health information system. Organizational factors, such as lack of clarity about roles and responsibilities for information use; failure to actively promote the value of evidence-based decision making, lack of norms or standards with respect to data quality; and ambiguity surrounding the flow of information throughout the system, have a direct influence on the use of data.

Many of the above mentioned organizational factors are not addressed by interventions that have been designed to strengthen data and information systems. However, without an organizational context that supports and values data collection and use, it is nearly impossible to make the links among health data, health information, and health action.

Behavioral Determinants

Behavioral influences on data demand and use often involve intangible concepts such as motivation, attitudes, and the values that people hold related to health information, job performance, responsibilities, and hierarchy. Influencing many of these behavioral factors will require interventions that go beyond simple training that improves knowledge and skills in understanding data and using information. Behavioral factors give crucial insight into the way in which health workers, managers and policymakers either use information or fail to do so.

CHAPTER FOUR

4 Data Presentation and Analysis

4.1 Characteristics of Respondents

Seven hospitals from Addis Ababa have participated in the study. Overall, 24 respondents, including Medical Doctors, Nurses, data clerks and others, were interviewed from the hospitals. The majority of the respondents were females (66.7%) with most (about 60%) aged 25 or higher.

The majority of the respondents (70.8%) are diploma holders, 8.3% high school graduates, 4.2% attained a Bachelor's degrees and 16.7% medical degree. The majority of respondents are Nurses (54.2%), followed by Data Clerks (29.2%) and Medical Doctors (16.7%).

The duration of service of the respondents is highly dispersed. This dispersion can be observed in the respondent who is employed for four months to the one respondent who has been working in the field for 22 years. The majority of the sample, 54.2%, can be categorized under the group which has an experience of more than a year but less than five.

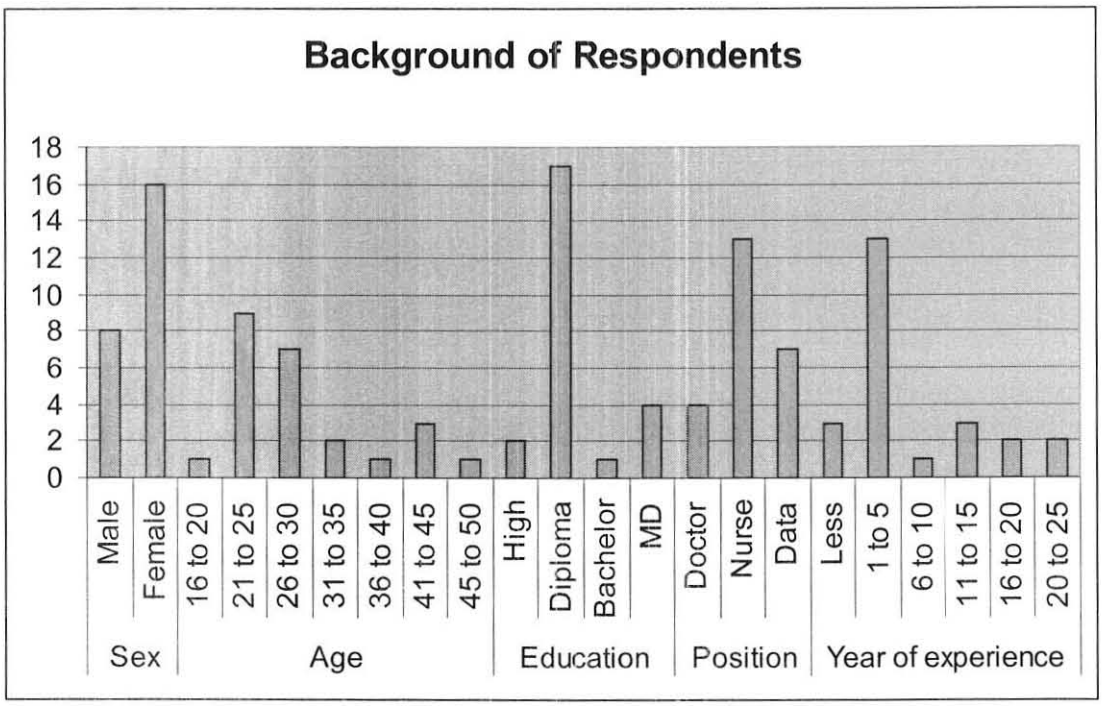


Chart 1: Background

In the proceeding sections, the three determinants of a system, presented in the conceptual framework, will be analyzed in relation to the data collected. Though some variables might be considered to overlap between two or more categories, for the sake of analysis, the classification provided by the conceptual framework will be followed.

4.2 Data Flow

When a person comes to a hospital he/she is first registered at the Card Room. He/She is then issued a personal card. Patient registration (form A) and social Assessment (form E) are filled out by a data clerk or a nurse depending on who is available. Then at the councillors forms B and F are filled out. After this patients see Doctors. The doctor then fills out forms C, D, and G.

Patients do not usually start the ART medication on the first day. Because of this the information of a patient is usually transferred from

his/her personal card to the pre ART register. The personal card is then marked to indicate that the data is copied to the register. On the day the patient starts ART he/she is transferred to the ART patient register. In cases when the patient should start ART on the first visit, he/she goes straight from the doctor to the pharmacy. It should be mentioned that, patients' information is copied in the pre ART register twice, once when the patient is issued the card (after forms A and E are filled) and once when he/she starts the ART medication to indicate the beginning of the regimen.

Each patient that starts ART at a hospital is given a unique ART number. Patients transferring to a new health facility are expected to bring their unique ART number from the facility they initiated ART for the first time.

Every month the data clerks aggregate the data on the ART and pre ART registers and report to the Addis Ababa health Bureau. This reporting, though sometimes delays occur, is expected to reach the bureau in the first seven days of the month. The data reaches the Health Bureau in three types of ways. In the first way data clerks bring in the report themselves. In the second, the data managers of the health bureau go around collecting the report. In the third and last type, the report is sent through the archive section of the hospital and received through the archive section of the health bureau.

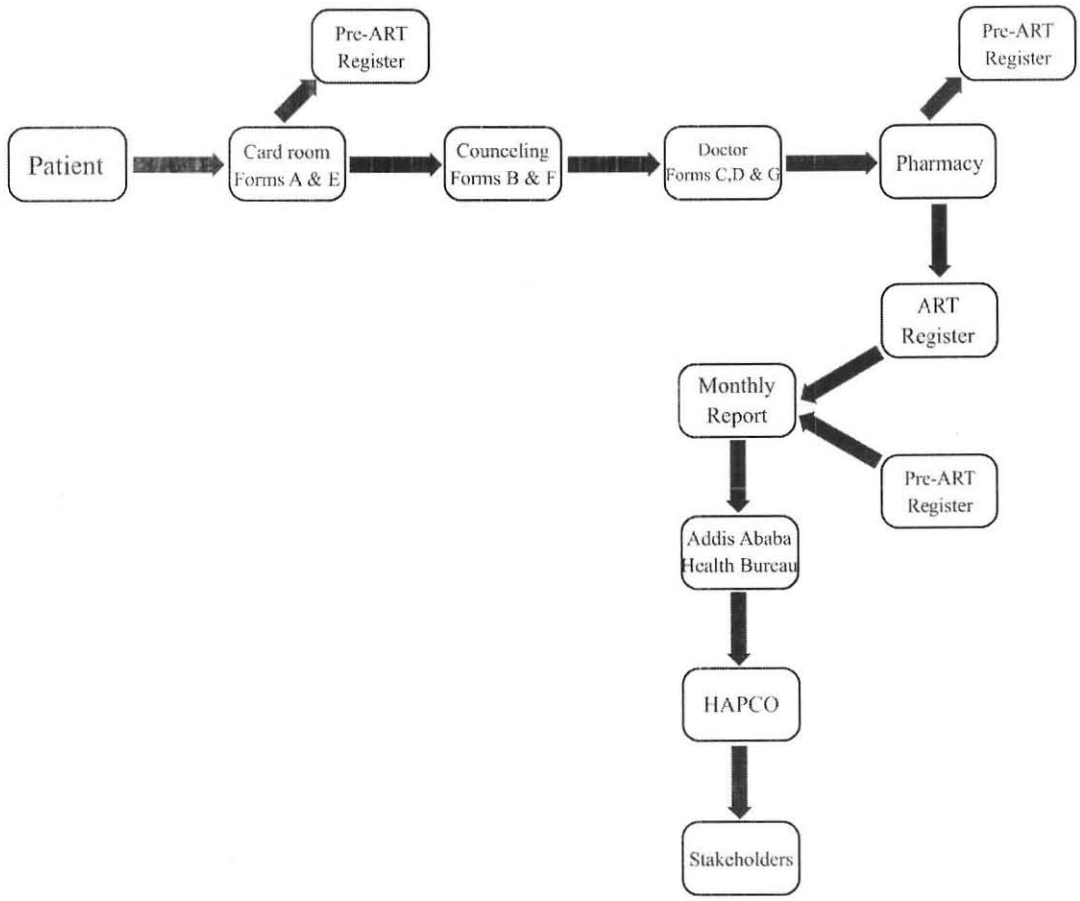
Of the three methods, the institutional exchange takes too much time. One key informant stated that the archive section is slower in sending the report to the health bureau. Also, once the report is received in the archives office, due to too much work load, the office delays the delivery of the report to the data managers. The key informant had also stated that the report is sometimes delayed because the doctors or the

responsible body that has to verify and sign the report holds-up the process.

Once the report reaches the Addis Ababa health bureau, data managers aggregate the separate facility reports and then it is sent to the HIV/AIDS Prevention and Control Office. Based on the monthly report there is a weekly meeting that discusses what has been done and what shortages have been observed. These discussions may revolve around on how many people started ART, on the number of new sites and what shortages were encountered. In cases where problems are identified, decisions are made and the focal person for that region or facility is told of it. In addition, every two weeks a meeting is held with the health minister concerning the data.

The monthly reports are also sent to forty eight agencies and institutions as soon as the reports from the whole of the country are received. These institutions range from UN agencies to the armed Forces hospital. Not only this, the reports are posted on the Ethiopian Aids Resource Center website so any interested person can access them.

Figure 4: DATA FLOW CHART



4.3 Technical Determinants

Training

The training of personnel is one of the major determinants for smooth functioning of a system. All respondents reported that they had received training on how to fill out the forms while only 62.5% have had trainings in the last six months. Even then, most of the trainings were for those that had not received training about the ART patient forms when they started their job.

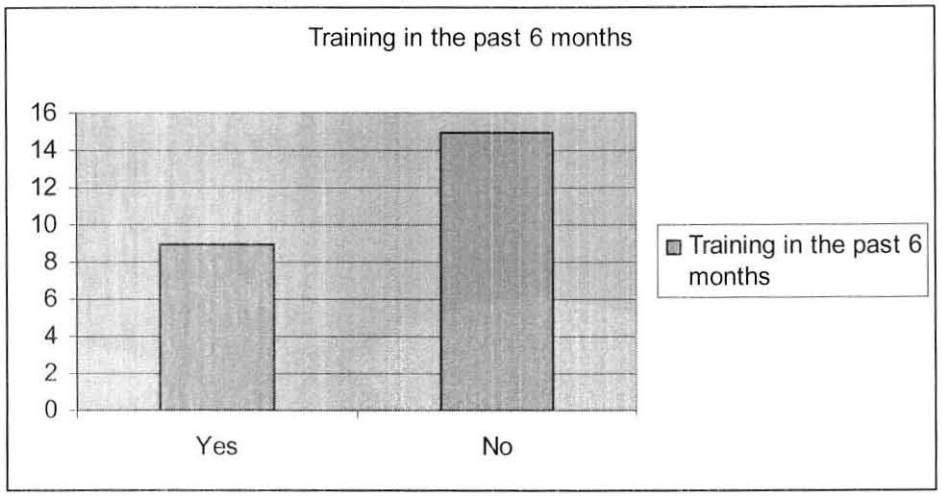


Chart 2: Recent Trainings

Filling ART Forms

The ART patient monitoring system is based on standard forms that are manually filled. All blank fields in the forms have a clear label and minimize the problem of unreadable hand writings. The data clerks fill out the "Patient Registration Form" and the patient identification section in the remaining forms. The nurse fills out the "Past Medical/ Treatment History Form", the "Social Assessment Form" and the "ART Adherence Counseling Form". The "Clinical Review" is filled out by the resident physician. The "General Condition/Physical Exam" form can either be filled out by a nurse or a physician. In reality, the doctors and nurses sometimes fill out the patient identification section and the patient registration form because the work burden on the data clerks is too much.

The majority, 79.2%, of respondents have agreed that the forms are user friendly. Also, 58.3% of the responses indicate that the forms in use are necessary and useful. Concerning the questions in the forms, 62.5% of the respondents are of the opinion that there are unnecessary fields to be

filled out. These fields, in their opinion, are redundant and ask for information that is not currently put to use.

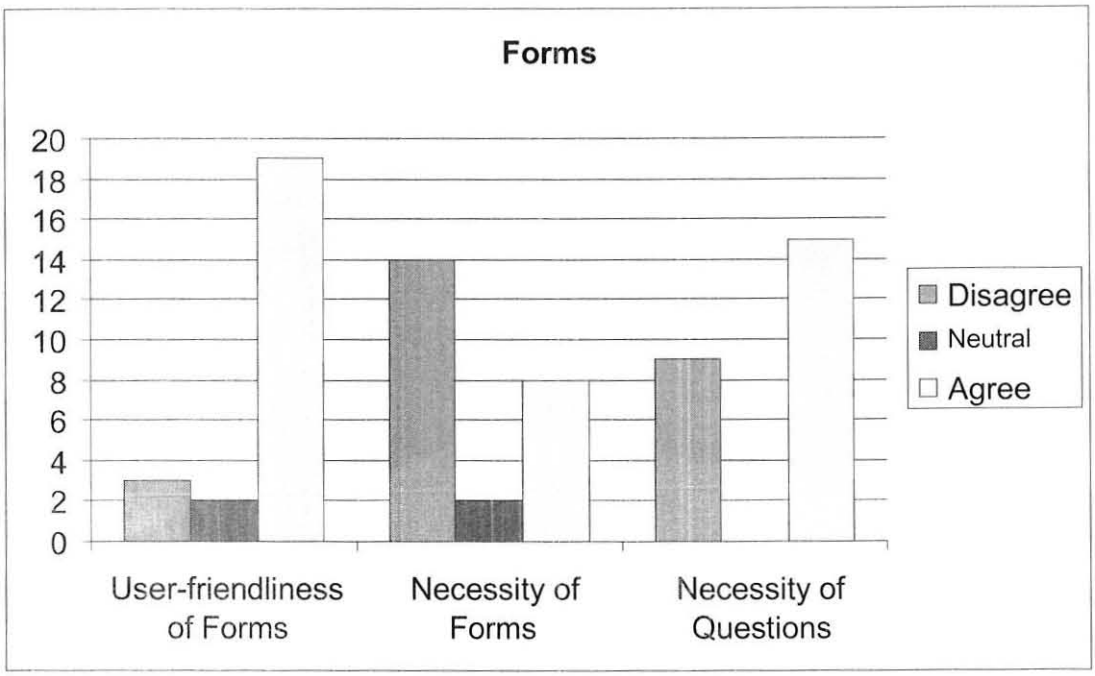


Chart 3: Forms

As 62.5% of the respondents agreed, the forms set a clear and understandable standard as to what the quality of data should be. Though this might be the general opinion, the system lacks a way to check the accuracy of the collected data. From the collected responses and personal observation, it has become clear that accuracy verification falls under the discretion of data clerks. Even though the Addis Ababa Health Bureau has supervision schedules it is lacking in its implementation. John Hopkins University staffs are more involved in checking accuracy as they sometimes and randomly check and help update the ART registers and forms.

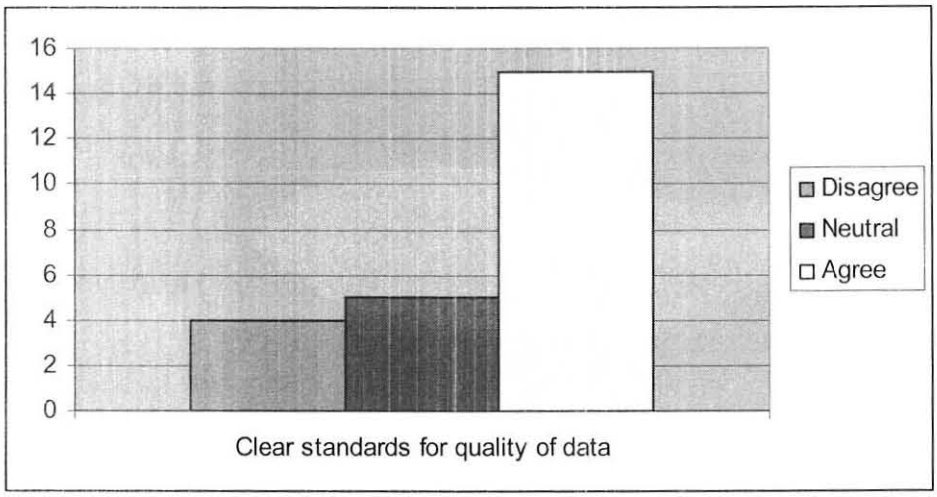


Chart 4: Data Quality Standards

4.4 Determinants at the System and Individual Level

The following section discusses the findings of the survey on organizational factors and structural constraints that determine the ART patient monitoring system.

The ART patient monitoring system requires the collection of data by a number of people on the same area. These people fill out specific fields and leave the rest to their relevant colleagues. In order for the system to function as it is meant to, a clear understand of roles and responsibilities for information use must be present. In this regard, 70% of the respondents agree that there is clarity about roles and responsibility for information use compared to 25% who disagreed.

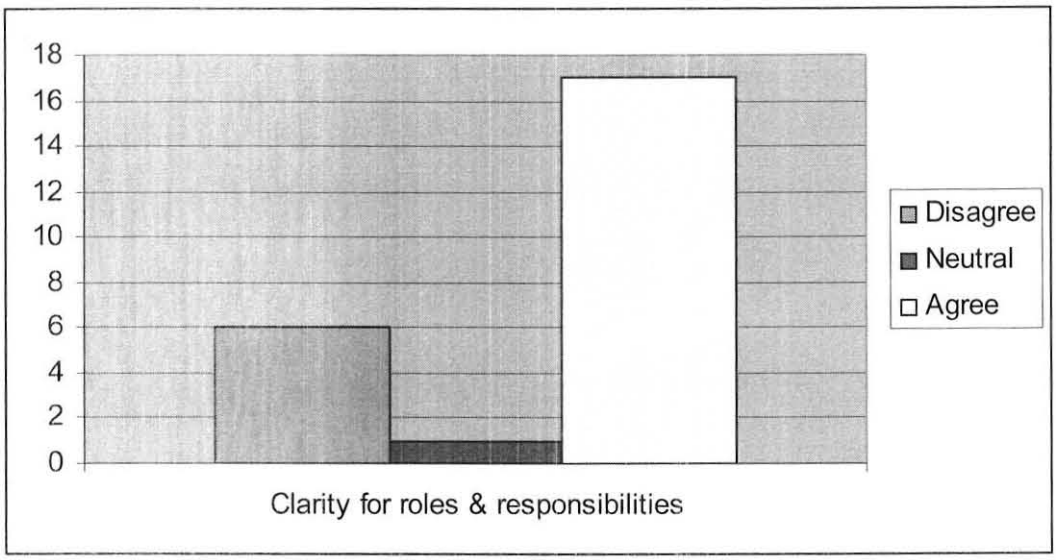


Chart 5: Clarity of Roles and Responsibilities

The flow of data, from generation to analysis, requires the involvement of various individuals which might or might know what stages the data has passed and will pass through. The previous responses indicate that people know what data they have to collect and what to do with it. Then a question arises as to what extent their knowledge of the system extends. This also brings into question about the clarity of information flow throughout the system. Among the respondents, 70.8% agree that there is clarity while 16.7% disagree and 12.5% remained neutral.

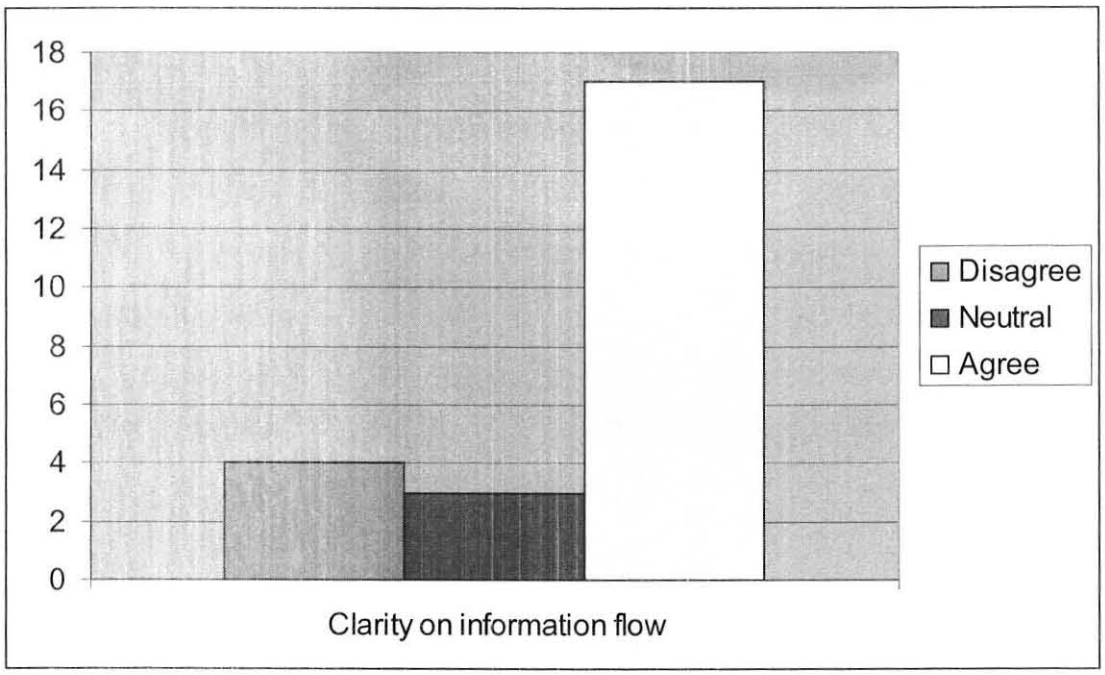


Chart 6: Clarity of Information Flow

Ability to promote the value of evidence-based decision making has a major influence on the use of data. From the facilities where data is generated to the level where policies are formulated, the staff has to understand that the data they collect will be used as evidence in decision making.

In the hospitals, where the survey was conducted, respondents were asked questions on what they think decisions were based on. The following table summarizes their responses.

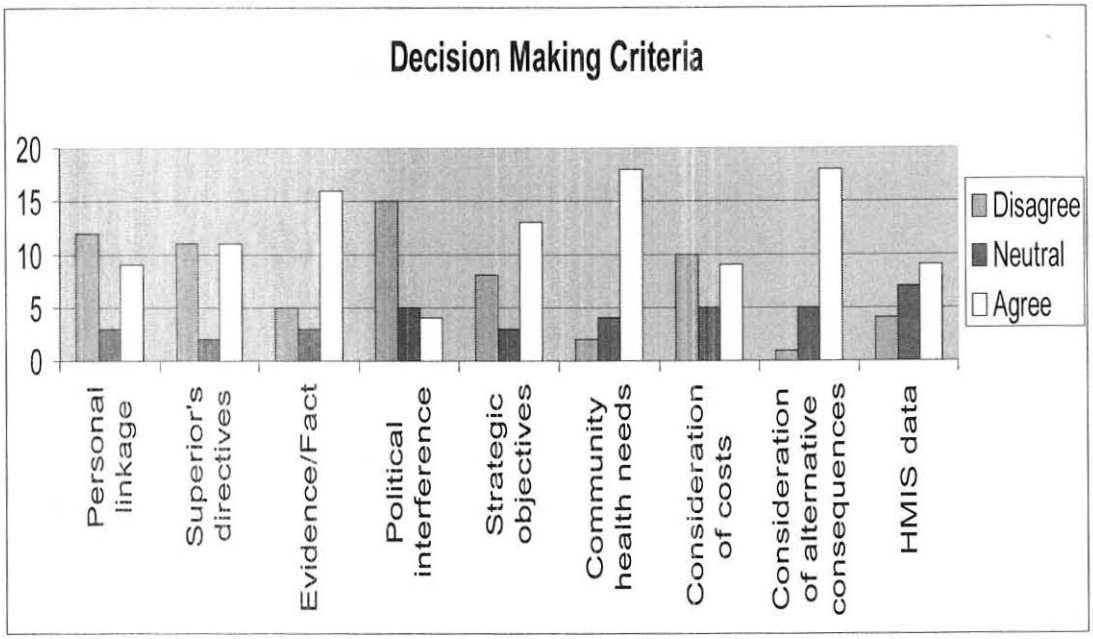


Chart 7: Decision Making Criteria

According to 75% of the respondents, the health facility decisions are based on considering all alternatives and their consequences as well as community health needs. Also 66.7% of the respondents believe that evidences and facts are used in the decision making process.

Asked if decisions are based on the consideration of cost, 41.7% have said they were not considered while 37.5% have said they were. This fact would have been contradictory to the resource poor settings of the hospitals were it not for the assistance and funds provided by John Hopkins Hospital and other partners. Because of this support, the ART section of the hospitals can work in relative financial security. In fact, in the studied hospitals, difficulties are observed in the communication and responsibility fulfillment of the hospital to the ART section than the aid organizations' commitment.

Respondents who agree that decisions in health facilities are based on personal liking are 37 % whereas 50% disagree and the remaining 13%

have no opinion concerning the matter. With reference to strategic objectives, 54.2% believe that they are the basis of decision making and 33.3% believe they are not. It also seems that, as 62.5% of the respondents answered, political interference has a limited role in the decision making process of the facilities.

After the above mentioned specific situations were raised, respondents were asked if they believe, in general, if decisions in the facility were made based on evidences. A surprising percentage, 75%, said they were. This gives indication that supervisors and decision makers in the facilities are informed about the advantages of evidence based decision making and are, at least, seeking to put it to work.

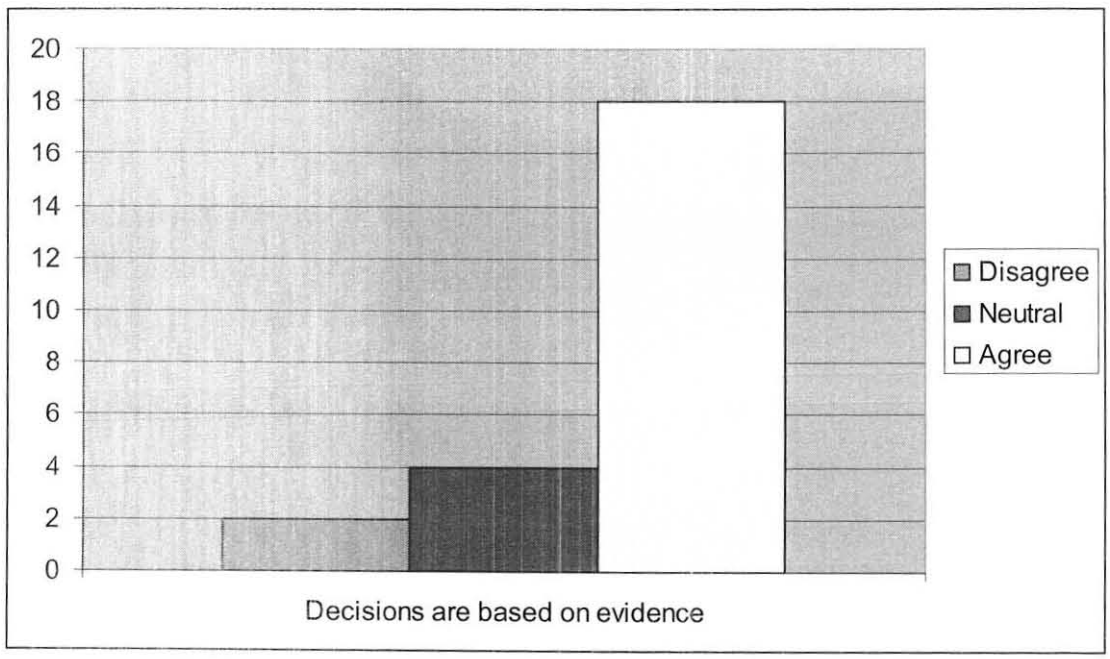


Chart 8: Evidence as the Basis of Decision Making

As mentioned before, the ART patient monitoring system makes it necessary to involve a number of people in different levels. This workforce should be adequate and trained. Concerning the training, as presented earlier, all respondents working with ART patients were

trained but only 62.5% have had trainings in the past six months. Because of the experience they have now, 87% of the respondents believe that they need training in data collection analysis and display. Then the remaining question will be, whatever the level of training is, if the ART sections have adequate number of staff. This question was put forward to the respondents and 50% have said that they do not have adequate number of staff compared to 45% who believe they have enough.

In one observed government hospital, because of shortage of physicians, doctor substitutes another, for as short as two days, and can be gone on the third. One of the problems mentioned in an in-depth interview was a high turnover rate of employees, especially in government run hospitals. The cause of the problem, according to some respondents was the significantly higher salaries offered by private and non governmental agencies.

In relation to the communication capabilities 56.5% of the respondents believe that the capabilities are not adequate. The number of telephone lines is limited and the use and presence of fax machines in the reporting system of ART monitoring system is non existent.

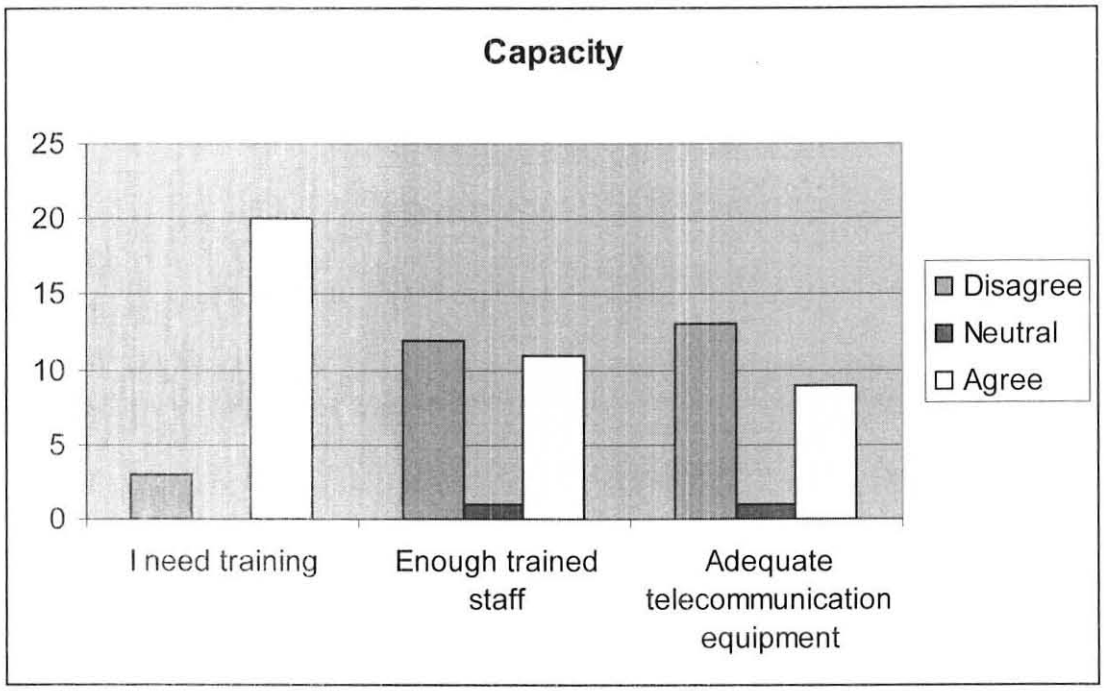


Chart 9: Technical Capacity

The government run hospitals do not have an internet connection while most private ones have a connection which they can use together with other staff members. The government hospitals have their own internet accounts but are unable to use it, because the telephone lines necessary to connect to the internet are not provided for them. The problem lies, according to the respondents, in the bureaucracy and deprived financial condition of the hospitals.

The following table summarizes the review the responding staff did concerning their supervisors. The raised questions had ranged form the supervisors' willingness to listen to staff opinions to their effort in getting feedback from the community.

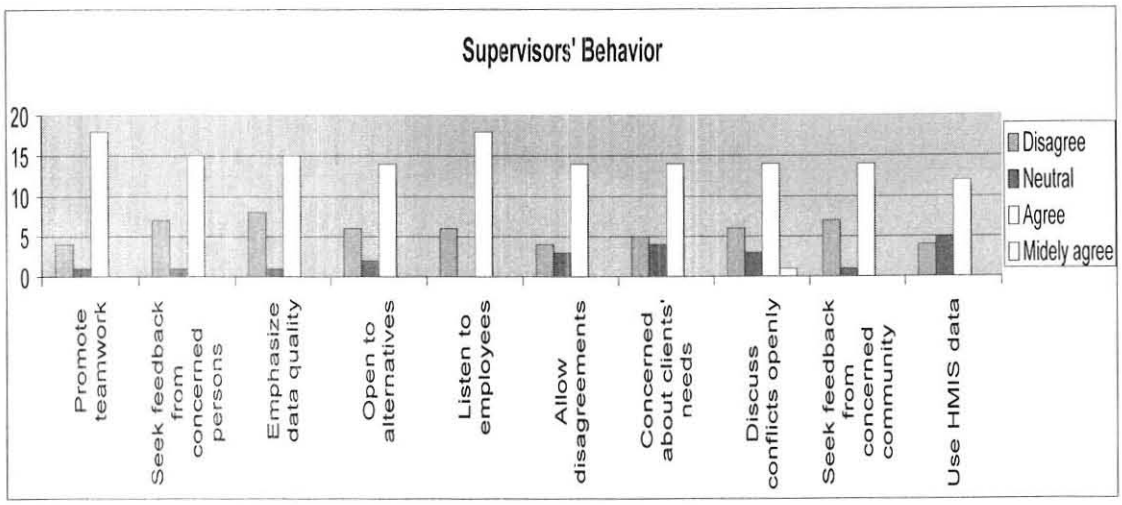


Chart 10: Supervisors' Behavior

According to the figures shown above, the majority of respondents have given their supervisors a good evaluation. Supervisors, at least in the eyes of 78.3% of the respondents, promote team work. This ability, in a system where staff shortage is a common occurrence, is a useful tool. The team work environment in the studied hospitals has been observed in coworkers filling out forms and handling patients out of their job responsibility, just to help their swamped colleagues.

Supervisors are also thought to have a good approach to their employees. Of the total respondents ,63.6% believe that their supervisors are open to alternative views and 75%, again from the total respondents, have said they are willing to listen to employee concerns and ideas. According to the respondents, though their supervisors are willing to listen and help, in frequent cases their problems are not solved. The problem laying with the setting of the whole hospital which holds back the persons in charge.

As 66.7% of the answers showed, to resolve problems, supervisors allow the open discussion of conflicts. In addition, 62.5% have said that they (supervisors) allow disagreements to occur before reaching a decision.

These two points enable coworkers to air out their grievances openly and work together in resolving them. But, as mentioned before, though agreements might be reached with supervisors, resolution of problems might not necessarily follow.

The involvement of supervisors in the data collection process varies from one facility to another. In relation to data quality, 62.5% have said there is emphasis on quality. Concerning supervision, respondents have stated that supervisors are only involved in rare cases and only when errors are reported.

The ART patient monitoring system does not have a proper feedback collection system for each facility. To assess what supervisors' attitude was towards gathering opinions from concerned people and patients' questions were put forward. The answers, 65.2 % of them, show that supervisors, in fact, request for feedback from concerned people. 63.64% of the responses have also indicated that opinions are informally collected from patients.

4.5 Behavioral Determinants

The elusive concepts of motivation, attitudes, and the values that people hold related to health information, job performance, responsibilities, and hierarchy can be termed as the behavioral determinants of data demand and information use. In the following section, an attempt will be made to address issues of behavioral determinants.

In the previous section it was found out that the respondents believe that their supervisors have promoted team work. This team work is confirmed as 91.3% of respondents have said that staff members help each other in handling and assisting patients. In additional review of their colleagues,

95.7% of the respondents trust that the staff performs its duties honestly and 90.9% of the replies showed the staffs' commitment to their patients. In time management, 77.3% believe their co workers are punctual. These mentioned points not only create a healthy working environment but also help in the smooth functioning of the system.

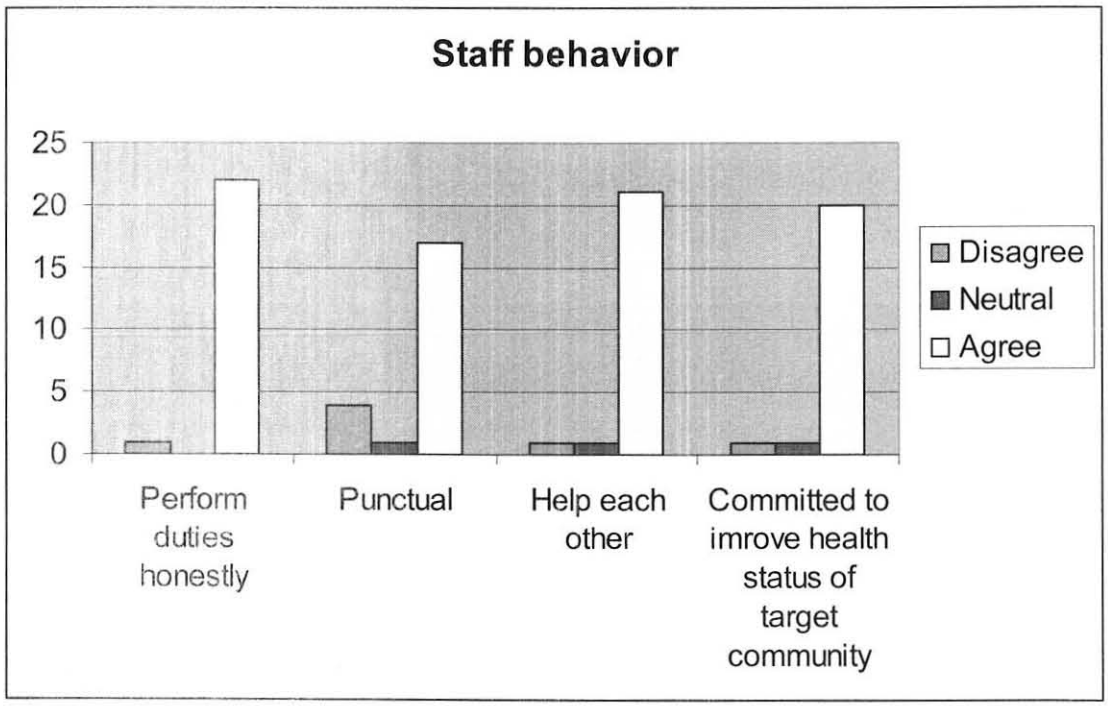


Chart 11: Staff Behavior

If the system is to succeed, involved personnel have to understand what they are doing is important. To gauge this understanding respondents were asked if the staff believes that data collection is important. Eighty percent of the received replies indicate that they do believe it is important. The staff is also told that, according to 90.5% of the answers, what they are doing has a direct impact on improving the health status of the target population.

The data collected indicates that 66.7% of the respondents believe that when the staff are lacking in their performance, they are made

accountable. On the other hand, concerning rewards and incentives, 45.5% of the questioned staff consider them as non existent compared to 36.5% who believed they were. Though supervision and reprimanding poor performers is important, having incentives would boost the motivation of the staff.

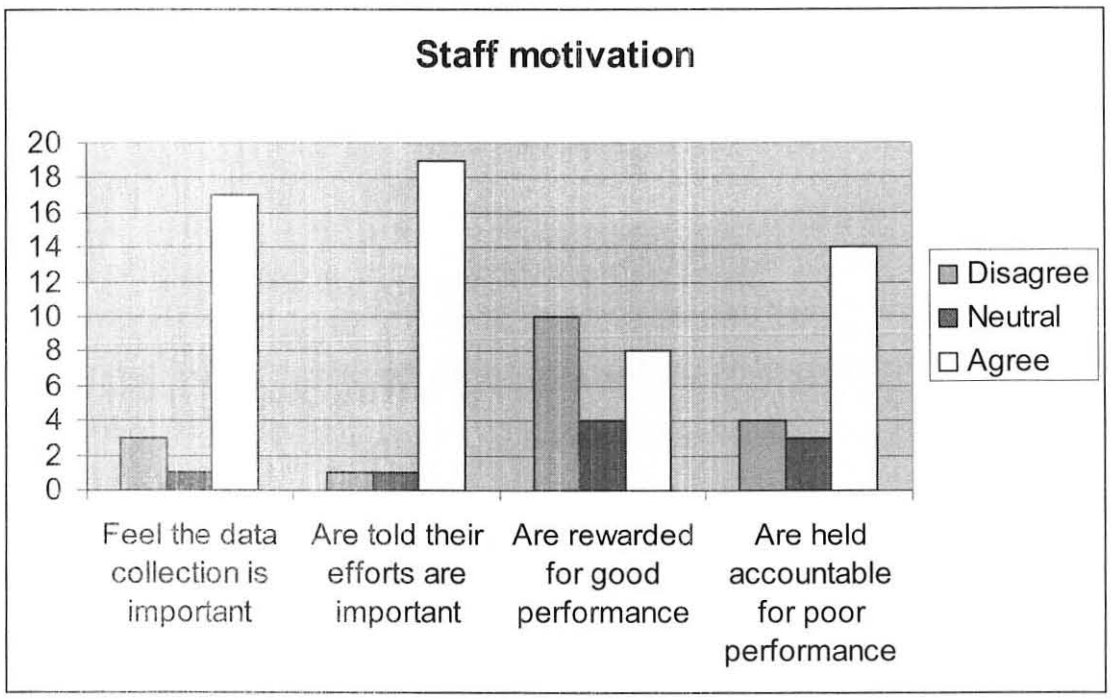


Chart 12: Self Motivation

The basis of promotion also has an influence in the motivation of workers. If employees believe promotion is based on merit, they are likely to be motivated to work harder. In the data collected, 45.5% of the respondents believe they are promoted based on merit while 36.4% disagreed. These relatively close values indicate that there is a weak belief in the fairness of promotions.

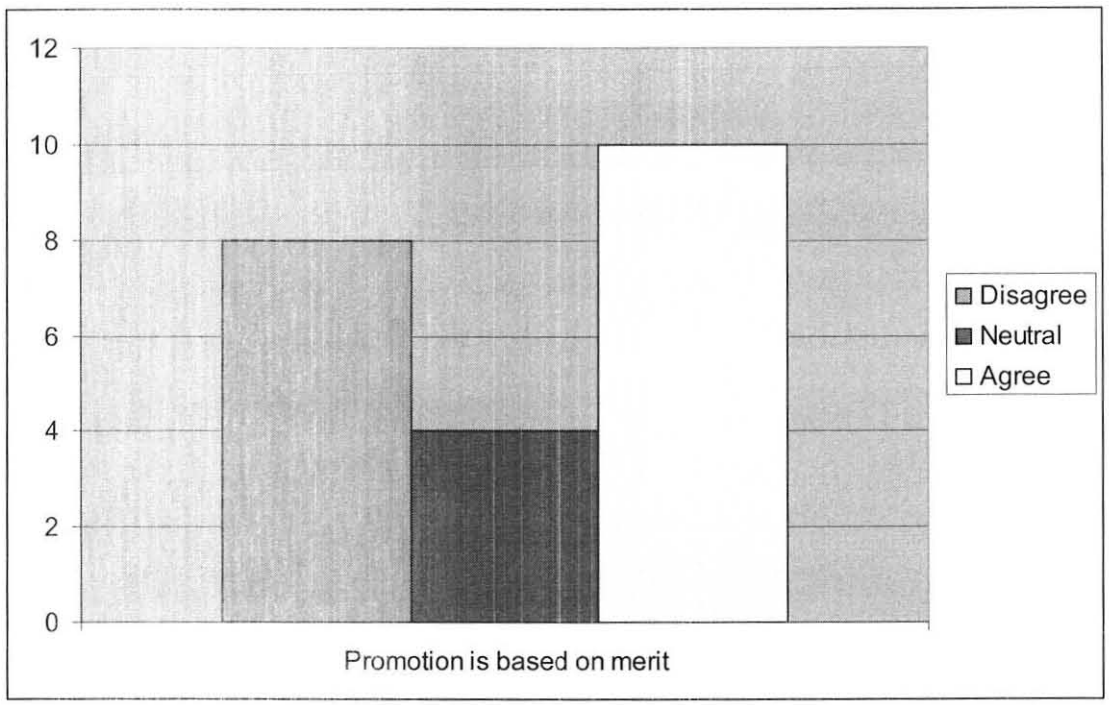


Chart 13: Merit as Basis of Promotion

As mentioned earlier the ART sections experience a high turnover rate of staff. The reason for this, as mentioned by key informants, is the low salary, compared to private hospitals and NGOs, of staff. For data clerks the difference in salary exists even between the government hospitals. This variety occurs because the hiring organization might not necessarily be the hospital they work in. For example, the data clerks for Zewditu, Minilik II and Yekatit 12 hospitals are hired with the support of the Global Fund. John Hopkins has also hired data clerks for Ras Desta, Gandhi and additional data clerk for Yekatit 12 hospitals. Thus, though all data clerks have the same responsibility, their salaries might vary affecting their attitude and motivation towards their job.

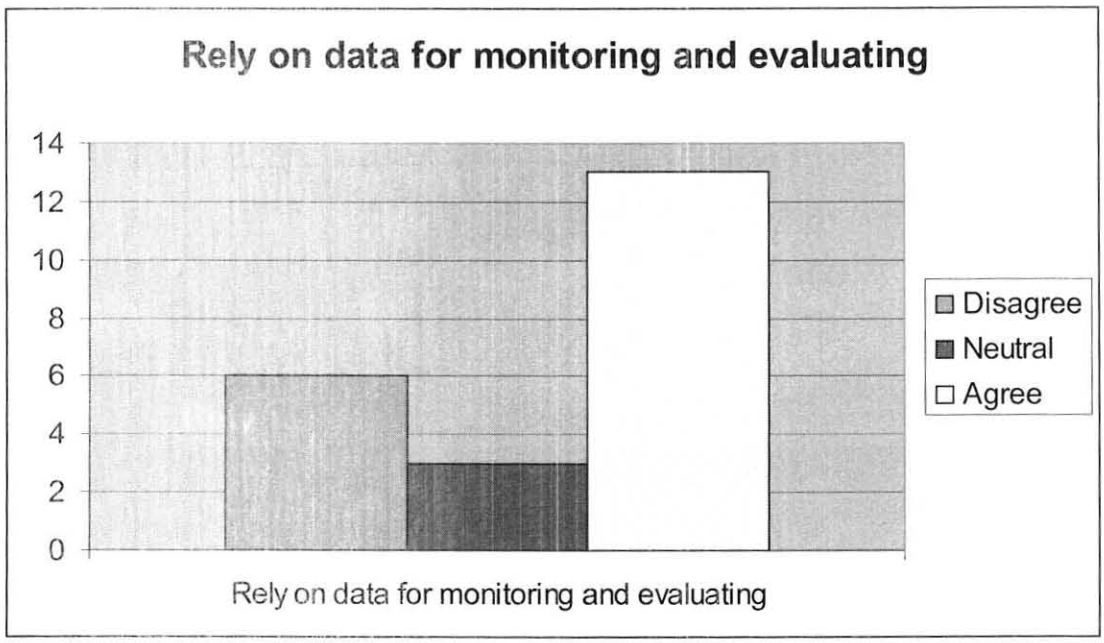


Chart 14 Dependence on Data for Monitoring and Evaluation

Facilities are provided with the necessary forms and registers and they report using these standard forms. In the observed hospitals the display of their target and achievement is limited. In fact it's only one hospital, among the studied, which had graphical display and even then it was a year old.

Once reporting is done facilities do not receive a regular feedback on their reports. According to the data clerks, feedback occurs only in the event of error and discrepancy.

Collecting data for the sake of collecting is pointless. The collected data, among other things, should be used to identify gaps and shortages in the services rendered. This identification starts from the facility level. When the ART staffs were asked if they can gather data to find causes of problems, 77.3% said they can while 9.1% remained neutral. Once identification is made, 59.1% of the respondents said that they can select proper interventions to resolve the problems. In reviewing results of the

intervention, 69.6% have said that they can evaluate if the desired outcomes are reached.

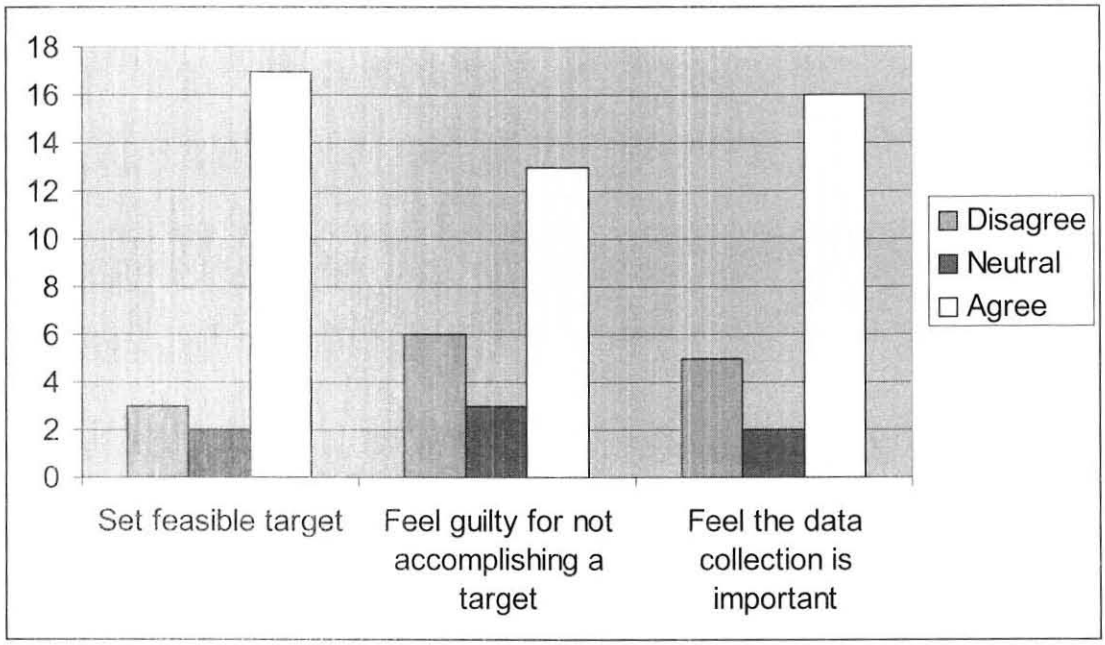


Chart 15 Target Setting

In previous discussions it was found out that there is a good team work environment in the ART sections. In the area of decision making, respondents were asked if they were allowed to make decisions on minor things. Fifty six percent said they were and 26.1% said they were not. The majority figure indicates that the staff can sometimes work outside the bureaucracy to speed up the service. The figure can also be taken as an indication to the level of trust that exists between the staff and supervisors.

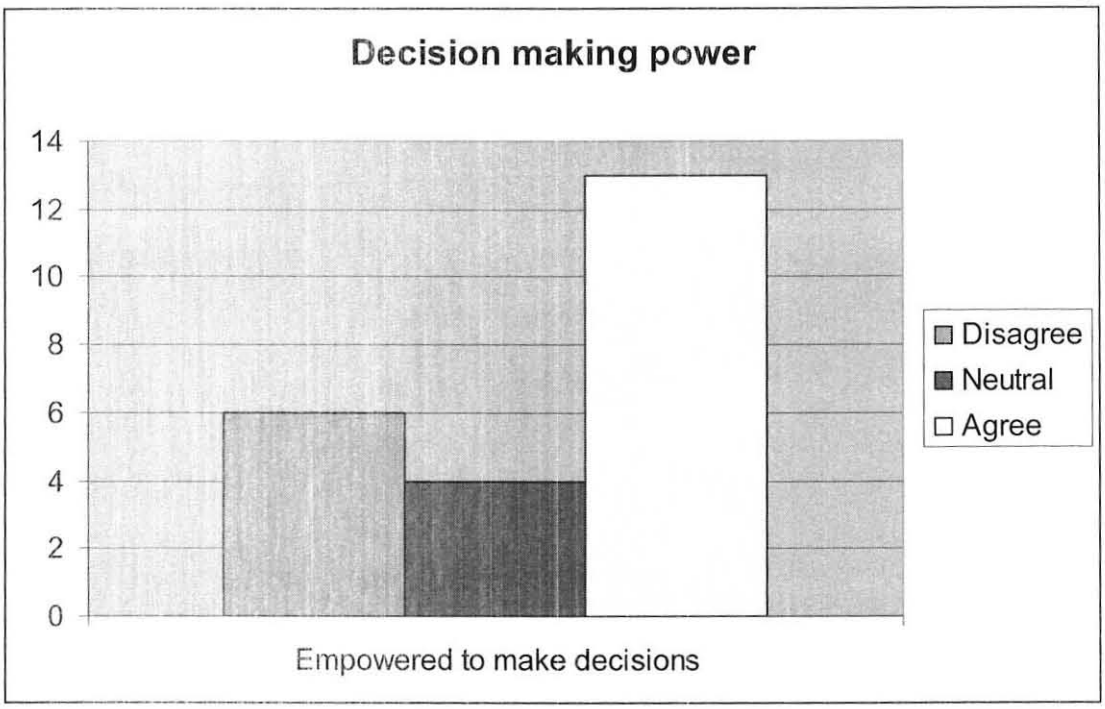


Chart 16 Decision Making Power

After reviewing their colleagues, the staff were then asked to provide answers to questions that evaluated their attitude to data collection. To start with, they were asked if they feel that data collection was forced on them. More than seventy percent said they did not feel it was an additional burden. Another 78.3%, of the total respondents, also believe that data collection is a meaningful work. Though meaningful, 57.1% of the respondents find data collection to be boring.

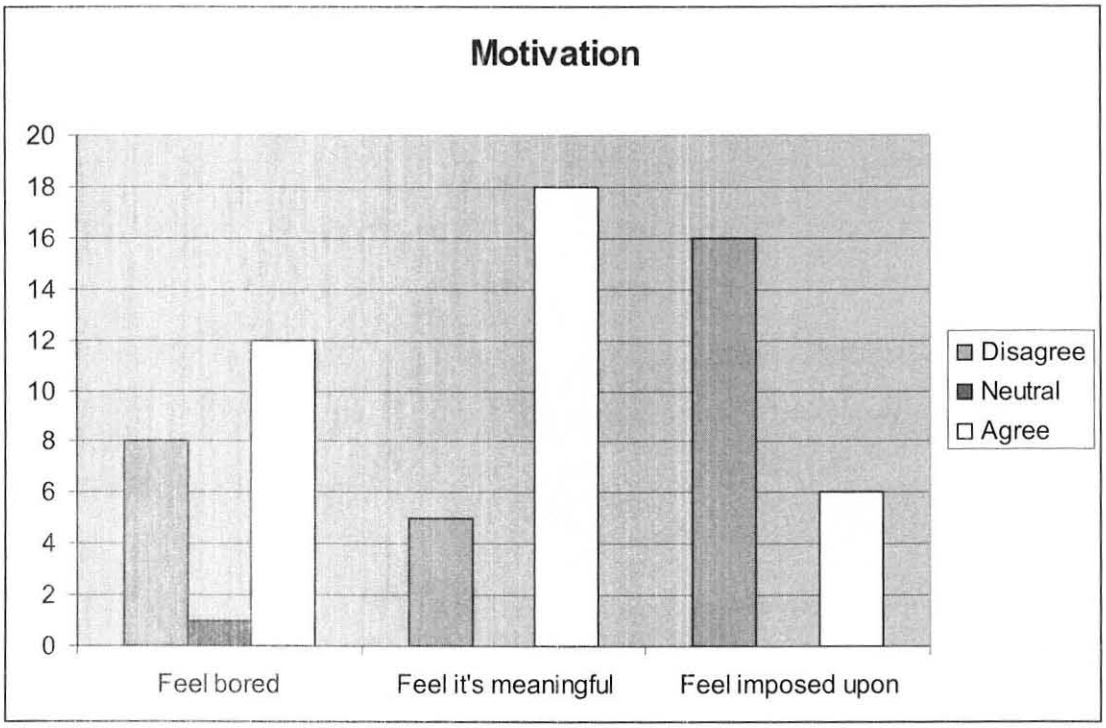


Chart 17 Motivation

Information collection is, according to 69.6% of the respondents, appreciated by colleagues and supervisors. On the use of data, 47.6% have said that collecting data that is not used for decision making discourages them while 42.9% have said that it does not.

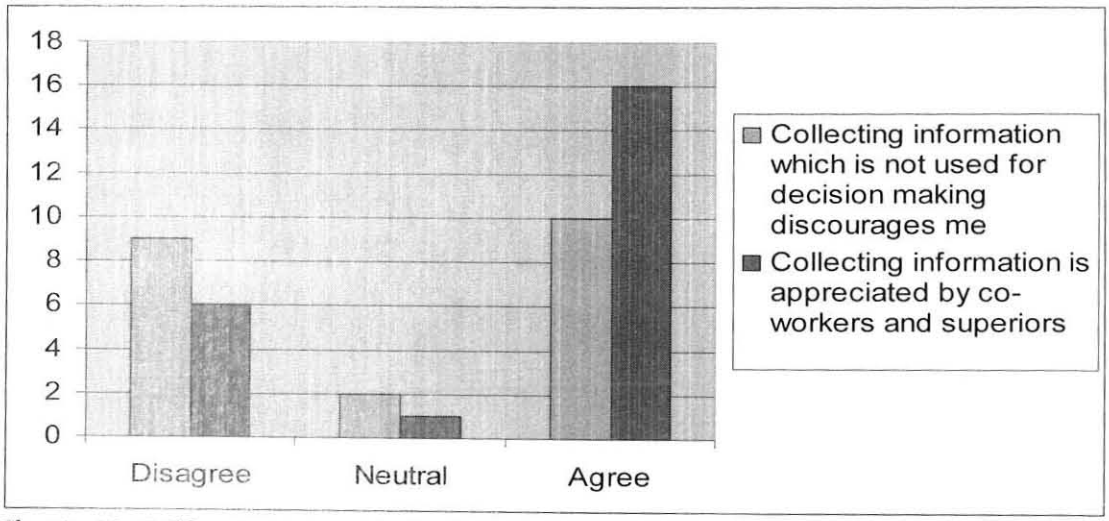


Chart 18 Colleagues Attitude to Data Collection and Data Use

Overall, respondents were asked to rate their level of satisfaction on the job and have given the following responses.

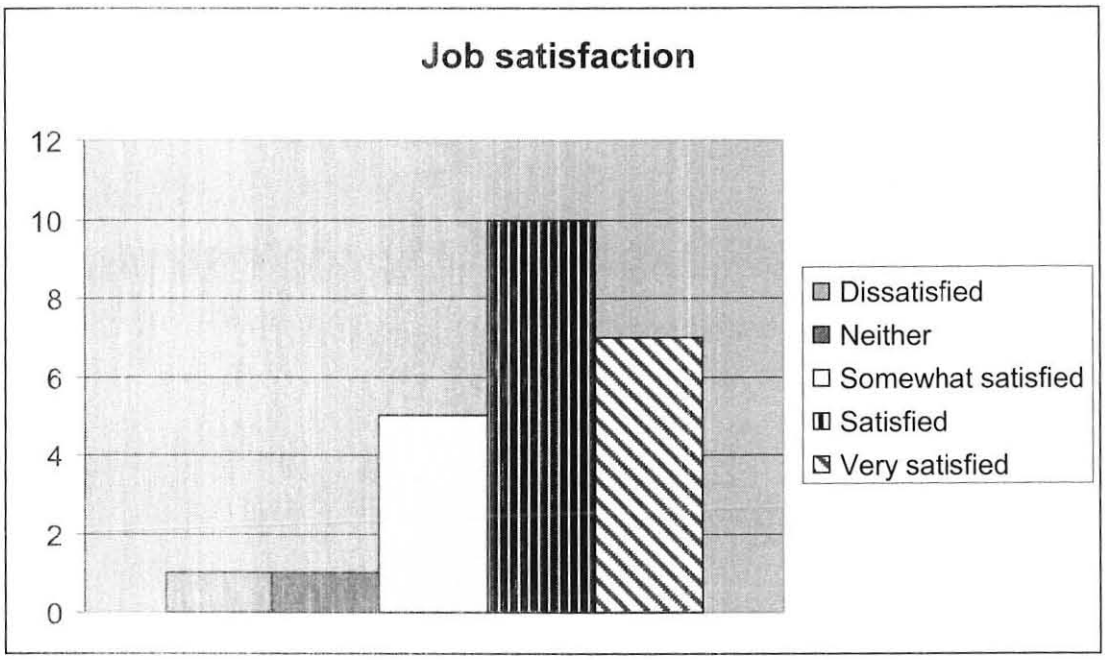


Chart 19: Job Satisfaction

One apparent reason for low level on job satisfaction was, as mentioned earlier, low salaries. Even those who have stated they are satisfied with their job had said that their satisfaction comes from the contentment of helping patients than from administrative or monetary gains.

CHAPTER FIVE

5. Summary, Conclusion and Recommendation

5.1 Summary

In the previous discussions it was found out that the ART patient monitoring system was based on inadequate personnel. These personnel were seen to cover more than their share of responsibilities because of the staff shortage. The staff are only trained in the basics of the system and had no further trainings. It is also in the belief of the respondents that they need additional trainings in data collection, analysis and display of data.

As the system is paper based, emphasis was given to the types of forms and the fields that were found in them. The collected data has indicated that the respondents believe in the importance of the forms but are unsure about the questions. They believe that some of the questions in the forms are unnecessary and redundant.

Employees know what the quality of the data should be and what body is responsible for each aspect of the data. The measures put in the system to verify the accuracy of data are not put to use. Most supervisors are only concerned with the completion of the reports and the Addis Ababa Health Bureau is unable to check each facilities effort. In this regard Johns Hopkins Hospital staff are more involved.

The reporting system is solely done manually. The data clerks manually tally the information from the registers and transfer it to the monthly reporting forms. Once the monthly reporting forms are completed they reach the Addis Ababa Health bureau either through the archive section,

dropped off by the data clerks or collected by the data managers of the health bureau from each facility. There are efforts to electronize the data collection and reporting system but are in the testing stage. In addition, internet availability is limited, even though internet accounts are ready for the facilities.

The facilities do not usually receive feedbacks from the health bureau or HAPCO. In the rare occasions they do, it is only to clear up discrepancies or errors. The monitoring system also does not have a means to collect feedback from patients from each facility. The collection is done informally and is based on the willingness of involved personnel.

Data indicated that in the surveyed hospitals decisions are not made arbitrarily. The respondents believe that supervisors make decisions based on the presented evidences and other relevant reasons. Political interference and personal likings are seen to have a limited influence on the making of decisions.

In general, supervisors had received a positive evaluation from their subordinates. Respondents have stated that supervisors promote team work and are willing to listen to employee problems, though they might not always be able to solve them. They also empower their subordinates to make decisions concerning minor things to speed up the process.

The review of employees through the eyes of their colleagues was also positive. The respondents trust that their co-workers are punctual, believe in the importance of their job and are willing to help a colleague. The staff are also evaluated to have the ability to identify problems and take necessary actions.

Employees are not provided with incentives but are held accountable for poor performance. Employees in government run hospitals are paid less than their private hospital counterparts. Higher payments provided by these private hospitals and other private institutions have contributed to staff shortages and high employee turnover. Regarding data clerks, because the funding for their salaries is acquired from various sources, the amount of their salaries varies, even though their job description remains the same.

Personnel involved in the data collection process accept that data collection is part of their job. Though they admit this aspect of their job is meaningful for them they also mentioned that they find it boring. The data collected has shown that the overall level of on job satisfaction is average.

5.2 Conclusion

The system as a whole has the advantage of being the standard for reporting and collecting ART data. The various hospitals and health centres use the same type of forms and report using the same format. This uniformity helps not only the health centres, which would have had to develop their own forms, but also HAPCO and MoH, as the same reporting format reduces confusion and helps quick country wide aggregation of the data. This aspect is quite an improvement from the general HMIS program that is plagued by "parallel reporting mechanisms with programmatic and donor-supported initiatives resulting in multiple reporting formats and an increased administrative workload".

The user friendliness of the forms should also be pointed out as the strength of the system. These forms had reduced the problem of hard to

read handwritings and have also reduced the relatively longer time the data clerks and health professionals would have spent in filling out patient information.

On the other hand, though there is a supervision schedule built in the system, it is rarely used in the monitoring of hospitals. The verification of the data and the completion of the reporting forms on time entirely falls on the data clerks. This work practice, in a system where the data is aggregated manually using a tally system, creates an opportunity for discrepancies and errors. The data managers at the Addis Ababa health bureau can only verify that the current month's report has no drastic differences with the previous month's report and have no means of verify the new month's report.

There is a conducive working environment in the ART sections. Supervisors are open to their employees' views, listen to their problems and try to find solutions to the said problems. The level of trust between employee and supervisor is such that employees are empowered to make decisions on minor issues.

Most of the identified problems revolve around personnel. They are either not adequately trained, not paid satisfactorily or there is significant shortage of them. Though teamwork reduces the stress that occurs on the system because of staff shortage it cannot act as a substitute for full staffing. Thus, addressing these issues will greatly help in the smooth functioning of the system.

5.3 Recommendation

For the sake of simplicity, the following recommendations are divided into sections in which the analysis of the study was based upon.

Concerning Data Flow

The ART system has its own form of reporting the collected data. But what is observed is that a number of means are utilised for the monthly report to reach the Addis Ababa Health Bureau. It would be better to abandon the institutional exchange, as it is the slowest of the three discussed ways, and have the data managers collect the finished reports. The health bureau data managers already go to the sites when the data is late so it would not be a completely new experience, though it might require hiring additional staff and arranging means of transportation.

Concerning Technical Determinants

The study has found out that personnel working in the ART sections believe that there are unnecessary questions in the ART forms. Elimination of these questions will reduce redundancy and save the time employees would have wasted.

The current ART monthly reporting forms do not have fields for reporting lost and dropped cases. The Addis Ababa Health bureau is currently working with simple forms to collect information on the subject. If this form is standardised and accepted by the MoH, it would give a clearer picture about the ART patients' situation in the country.

Accuracy verification should be given more attention. The data clerks tally every patients information by hand and they are also the ones who

are expected to verify what they transferred from the register is correct. Thus, a second view of the data can identify mistakes before they reach the health bureau or higher.

Concerning Determinants at the Individual and System Level

The study has found out that the personnel themselves feel that they need more training in the area of their work. Therefore, providing them with refresher and advanced training will not only help in the correct workings of the system but by boosting their confidence it will create an additional advantage.

Apart from training the already existing staff, additional staff should be hired. The ART personnel are already overextended and they will not be able to provide the necessary and adequate service future patients will require. Hence, if it is expected to maintain quality of care additional staffing of the ART centres becomes necessary. Though the ART personnel carryout their duties with personal responsibility, the strict adherence to the supervision schedule will guarantee the completion of the work according to the set standards.

The speedy implementation of the software under testing would have a great contribution in addressing the major difficulties of the system. It would decrease the time spent entering the data and the verification of it. The software will eliminate the need for tallying data manually and thus would reduce the opportunity for error occurrence. In addition to this, if the hospitals acquire the use of the internet account they are provided with, the reporting system would also be greatly improved.

Concerning Behavioural Determinants

The salary of the data clerks is different from one hospital to another. This disparity of income for the same type of job would create unfavourable impact on the motivation of the data clerks. Thus, an effort should be made to bring up the salary of those that are paid less than their counterparts. Also, the lower salary, compared to NGO and private hospitals, of all ART section employees is mentioned as the reason for the high employee turnover. Hence, addressing this problem would reduce the turnover and increase loyalty of employees.

In the hospitals employees do not feel that promotions are based on merit. This aspect will decrease the motivation of employees. In addition, there are no incentives for a work well done. Thus, if awareness is created regarding the bases of promotion and incentives were provided for the workers, it would have a major impact on the motivation of the workers.

In general, while implementing these recommendations, it should be understood that solving the problem of one specific determinant will not address the problem of the whole system. Future interventions should target all the three determinants if they are to achieve the intended improvement.

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World Wide Web Source

WWW.Etharc.org

ANNEX A

Monthly HIV Care and ART Update
Updates as of end of Yekatit (March 10, 2007)

Monthly HIV Care and ART Update

Update as of end of Yekatit, 1999 (March 10, 2007)

Age Category	HIV Care		ART	
	New persons enrolled during month	Cumulative ever enrolled at end of month	New persons started during month	Cumulative ever started at end of month
Infants <18 months	96	765	18	156
Children 19-59 months	179	2194	74	896
Children 5-14 years	302	4204	162	2274
Non-pregnant females >14 years	4754	65494	2519	38324
Pregnant females	333	2083	74	486
Males >14 years	3461	56695	1962	35269
Unspecified		557		428
National Total	**9125**	**131992**	**4809**	**77833**

Persons on ART	
Children on 1st line regimen	2802
Adults on 1st line regimen	57803
Total on 1st line regimen	60605
Children on 2nd line regimen	13
Adults on 2nd line regimen	218
Total on 2nd line regimen	231
Unspecified regimen	420
Total currently on ART	**61256**

Pediatric Regimens	
3a	
3b	
3c	
3d	
d4T-3TC-NVP	539
d4T-3TC-EFV	327
AZT-3TC-NVP	1401
AZT-3TC-EFV	535
Total	**2802**

Adult Regimens			
d4t(30)-3TC-NVP	21195	ABC-ddI-LPV/R	5
d4t(40)-3TC-NVP	6021	ABC-ddI-NFV	2
d4t(30)-3TC-EFV	9841	TDF-ddI-LPV/R	23
d4t(40)-3TC-EFV	2617	TDF-ddI-NFV	0
AZT-3TC-NVP	11038	Not specified	188
AZT-3TC-EFV	7091	Total	218
Total	57803		
Percent on 1st line	**99.60%**	**Percent on 2nd line**	**0.40%**

Reporting Facilities

Number of treatment sites opened in the month	
Number of treatment sites operational	260
Number of reporting treatment sites	249

Monthly update released on Megabit 16, 1999 (April 24, 2007)

Source: MOH - HAPCO

Annex 1. ART Monthly Uptake by Site as of End of Yekatit 30 (March 10, 2007)				
	Amhara	Ever Enrolled	Ever Started	Currently on ART
1	Akesta HP	382	242	189
2	Borumeda HP	240	147	145
3	Debark HP	240	142	173
4	Deber Tabor HP	895	467	445
5	Debre Brehan HP	985	552	442
6	Debre Markos HP	2048	975	833
7	Dessie HP	5833	4917	3586
8	Enat HP	375	154	104
9	Felege Hiwot HP	5126	4142	2706
10	Finoteselam HP	590	372	305
11	Gonder HP	3307	2318	1653
12	Lalibela Hp	328	161	188
13	Mehal Meda HP	119	76	60
14	Metema HP	427	185	155
15	Motta HP	509	258	268
16	Sekota HP	261	187	148
17	Woldia HP	2308	1415	1036
18	Adate HC	166	43	59
19	Addis Zemen HC	223	77	133
20	Ataye HC	85	38	34
21	Bahirdar HC	212	76	71
22	Bati HC	154	65	90
23	Bure HC	188	75	118
24	Dangla HC	177	78	119
25	Delgi	51	21	32
26	Dessie HC	490	176	155
27	Durbeti HC	106	38	57
28	Este HC	101	51	70
29	Gonder HC	544	117	135
30	Haik HC	241	112	134
31	Injibara HC	247	75	127
32	Kemisie HC	240	163	193
33	Kobo HC	156	36	75
34	Koladiba	101	42	53
35	Kombolcha HC	476	205	246
36	Mekaneselam HC	64	116	136
37	Merawi HC	118	27	34
38	Mersa HC	188	125	135
39	Shoarobit HC	125	53	57
40	Woreoiilu HC	132	85	77
41	Woreta HC	173	71	120
	Amhara Total	**28731**	**18675**	**14896**

Source: MOH - HAPCO

	Oromia	Ever Enrolled	Ever Started	Currently on ART
1	Adma HP	6042	3452	2708
2	Aira HP	142	55	73
3	Ambo Hp	2103	1124	869
4	Assela HP	1619	769	368
5	Bishoftu HP	1664	596	495
6	Bisidemo HP	171	84	89
7	Bule Hora (Hageremariam HP)	120	44	49
8	Chiro HP	430	276	226
9	Dadar HP	149	77	77
10	Dembidolo HP	341	170	144
11	Fiche HP	1160	630	438
12	Galmeso HP	117	55	72
13	Gambo HP	91	21	19
14	Gimbi Adventist HP	149	79	67
15	Gindeberet HP	65	23	33
16	Ginir HP	116	63	63
17	Goba HP	712	377	287
18	Jimma HP	2285	1328	1036
19	Limu HP	135	42	30
20	Metehara HP	251	137	103
21	Mettu HP	706	402	306
22	Negele Borena HP	356	237	168
23	Nejo HP	128	40	54
24	Nekemet HP	1843	1064	700
25	Shambu HP	240	148	190
26	Shashemene HP	960	459	481
27	Woliso HP	982	366	317
28	Wonji HP	304	172	136
29	Adama HC	92	24	21
30	Adola HC	104	32	50
31	Agaro HC	22	10	18
32	Ambo HC	0	0	0
33	Arjo HC	1	1	0
34	Arsi Negele HC	51	10	10
35	Assela HC	0	0	0
36	Bedelle HC	0	0	0
37	Bedesa HC	0	0	0
38	Derra HC	87	17	50
39	Dhera HC	22	4	4
40	Dodola HC	49	24	25
41	Finchaha HC	48	16	14
42	Gebre Guracha HC	0	0	0
43	Gimbi HC	42	11	28

Source: MOH - HAPCO

44	Ginchie HC	34	9	9
45	Gundo Meskele HC	57	8	8
46	Haro Maya HC	21	3	3
47	Himaa HC	12	2	2
48	Holota HC	171	48	
49	Jimma HC	89	12	11
50	Mojo HC	109	30	39
51	Moyale HC	14	4	5
52	Nekemet HC	26	4	9
53	Robe HC	93	13	25
54	Sebeta HC	165	60	54
55	Shashemene HC	126	36	48
56	Sheno HC	66	15	16
57	Wolinchit HC	0	0	0
58	Woliso HC	141	50	36
59	Yabello HC	24	8	16
60	Zeway HC /Batu HC	110	67	84
	Oromia Total	**25157**	**12808**	**10183**
	SNNPR	**Ever Enrolled**	**Ever Started**	**Currently on ART**
1	Arbaminch HP	1453	881	541
2	Attat HP	531	254	213
3	Awaasa HP	783	458	421
4	Bonga HP	163	54	57
5	Butajira HP	455	214	169
6	Chencha HP	166	113	100
7	Dilla Hp	688	306	238
8	Dubo HP	183	57	48
9	Durame HP	104	37	42
10	Gidole HP	28	10	12
11	Hossana HP	516	259	206
12	Jinka HP	384	194	149
13	Mizan HP	651	414	327
14	Sodo HP	1065	572	417
15	Tercha HP	68	33	31
16	Yirgalem HP	2099	1406	1236
17	Aleta Wondo HC	30	8	7
18	Arbaminch HC	68	0	0
19	Areka HC	17	0	0
20	Awassa HC	6	0	0
21	Bele HC	25	0	0
22	Birbir HC	61	11	22
23	Boditi HC	74	22	22
24	Buee HC	23	5	6
25	Bulle HC	1	0	0
26	Bushulo HC	51	20	21
27	Chelelektu HC	1	0	0
28	Dalocha HC	28	6	14
29	Endiber HC	9	0	0

Source: MOH - HAPCO

30	Fofa HC	10	0	0
31	Gesuba HC	2	0	0
32	Karat HC	17	2	11
33	Kala HC	9	0	0
34	Key Afer HC	8	1	1
35	Kochere HC	2	0	0
36	Lanta HC	2	0	0
37	Laska HC	4	0	0
38	Mesha HC	17	3	3
39	Mizan HC	42	9	9
40	Sawla HC	93	48	58
41	Selam Bere HC	7	0	0
42	Sheko HC	8	7	6
43	Shinishida HC	26	8	9
44	Shinshicho HC	42	13	15
45	Shone HC	42	11	14
46	Sodo HC	14	0	0
47	Tebela HC	9	5	2
48	Tepi HC	82	27	31
49	Wacha HC	6	0	0
50	Walago HC	8	0	0
51	Welkita HC	62	9	7
52	Worabe HC	34	2	8
53	Yirgachefe HC	33	14	21
	SNNPR Total	**10310**	**5493**	**4494**
	Tigray	**Ever Enrolled**	**Ever Started ART**	**Currently on ART**
1	Abiyadi HP	54	20	28
2	Adigrat HP	657	402	337
3	Aduwa HP	298	158	177
4	Alamata HP	490	271	278
5	Axum HP	893	436	309
6	Humera HP	2583	916	787
7	Machew HP	390	218	196
8	Mekele HP	3561	2742	1848
9	Quia HP	86	31	32
10	Shire(Civil) HP	240	167	185
11	Wukro HP	253	131	138
12	Adigrat HC	13	3	3
13	Adishehu HC	22	0	0
14	Alega HC	28	4	4
15	Axum HC	0	0	0
16	Endabaguna HC	8	0	0
17	Enticho HC	30	2	2
18	Freweini HC	36	3	18
19	Houzien HC	9	4	7
20	Humera HC	28	2	2
21	Kasech HC	27	7	10
22	Maichew HC	8	0	0

Source: MOH - HAPCO

23	Maikadra HC	9	3	3
24	Mekele HC	53	32	32
25	Mohoni HC	43	11	14
26	Samra HC	29	9	7
27	Semien HC	33	7	10
28	Sheraro HC	20	1	1
29	Shire HC	12	0	0
30	Wukro Maray HC	13	3	3
	Tigray Total	**9926**	**5583**	**4431**
	Harari	**Ever Enrolled**	**Started ART**	**Currently on ART**
1	Hiwotfana HP	1490	878	713
2	Misrak Arbegnoch HP	434	252	207
3	TB Sanitarium Harer	134	33	27
	Harari Total	**2058**	**1163**	**947**
	Diredewa	**Ever Enrolled**	**Started ART**	**Currently on ART**
1	Dilechora HP	2494	1533	1233
2	Lageharie HC	101	21	25
3	Tabian HC	10		0
	DD Total	**2605**	**1554**	**1258**
	Gambella			
1	**Gambella HP**	**681**	**318**	**279**
	Afar			
1	Dupti HP	724	455	322
2	National HP	31	10	9
3	Asita HC	79	57	60
4	Awash HC	65	45	34
	Afar Total	**899**	**567**	**425**
	Benishangul	**Ever Enrolled**	**Started ART**	**Currently on ART**
1	Assosa HP	781	451	321
2	Pawie HP	435	200	217
3	Banbasi HC	81	12	46
4	Assosa HC	45	14	12
	Benishangula Total	**1342**	**677**	**596**
	Somali	**Ever Enrolled**	**Started ART**	**Currently on ART**
1	Karamara HP	658	476	291
2	Gode HP	23	11	5
	Somali total	**681**	**487**	**296**
	Addis Ababa	**Ever Enrolled**	**Started ART**	**Currently on ART**
1	Alert HP	5592	4135	3505
2	Blacklion HP	3682	2876	2355
3	Gandi (PMTCT) HP	248	60	60
4	Minilik II HP	2081	1263	1015
5	Rasdesta Hospital HP	836	451	226
6	St Paul HP	3868	2876	2355
7	ST. Peter HP (includes Entoto)	2102	1271	835
8	Yekatit HP	2737	1670	1471
9	Zewditu HP	11937	6937	4631
10	Addis Ketema HC	431	92	94

Source: MOH - HAPCO

11	Akaki HC	212	48	50
12	Arada HC	311	123	159
13	Beletshachew HC	112	48	43
14	Bole HC 17	840	249	315
16	Gullele HC	192	65	97
17	Kaliti HC	185	60	37
18	Kazanches	216	65	66
19	Kirkos HC	241	62	67
20	Kolfe HC	376	65	160
21	Kotebe HC			
22	Lideta HC	330	65	115
23	Mekidem Ngo Clinic	53	53	53
24	Meshulekia HC	252	67	57
25	Mother of Charity Clinic	393	206	200
26	Nefasilk NO.2 HC	326	135	205
27	Selam HC	206	52	88
28	Shiromeda HC	391	92	142
29	T/Haimanot HC	407	131	217
30	Woreda 19 HC	322	100	152
31	Woreda 23 HC			
32	Woreda 7 HC	189	80	74
33	Yeka HC	147	44	22
	Addis Abeba Total (Public)	39215	23441	18866
	Paying Hospitals	**Ever Enrolled**	**Started ART**	**Currently on ART**
1	Addis G.Hospital	285	226	226
2	Bethel	592	255	222
3	Betzatha	766	687	324
4	Billal (Diredawa)	34	25	33
5	Dinberwa			
6	Ethio-Tibebe	67	67	67
7	Hayat	480	217	149
8	MCM			
9	MMD	140	112	32
10	St. Gabriel	476	238	238
11	Tibebe	173	149	68
12	TZNA	51	46	33
13	Zenbaba	695	686	298
	Paying hospitals total	3759	2708	1690
	Addis Ababa total (Public & Private)	**42974**	**26149**	**20556**
	Uniformed Forces	**Ever Enrolled**	**Started ART**	**Currently on ART**
1	Air Forces DB	713	478	351
2	Armed Forces	1218	987	574
3	Awassa Army	54	26	29
4	Bella	728	502	271
5	Federal Prison Poliy HC	117	41	52
6	Harar Army	479	307	226
7	Harar Police	53	42	35
8	Jimma Army	83	25	25

Source: MOH - HAPCO

9	Kombolicha Army	203	141	92
10	Mekele Army	864	557	298
11	Police	1531	955	717
12	Shire C.C.	352	155	116
13	Western Command Gonder Military	233	133	109
	Uniformed Total	**6628**	**4349**	**2895**
	National	**131992**	**77823**	**61256**

Source: MOH - HAPCO

ANNEX B

List of Stakeholders Receiving Monthly Report

Addis Ababa University Tikur Anbesa Hospital
ALERT Hospital
Armed Forces Hospital
Bella Hospital
CDC- Ethiopia
Colombia University
Drug Administration and Control Office of Ethiopia
Emanuel Hospital
ENHAPA
Ethiopian Health and Nutrition research Institute
FHI- Ethiopia
FMOH, Department of Disease Prevention and Control
FMOH, Department of Family Health
FMOH, Department of Planning and Programming
FMOH, Health Education &Extension Services Office
FMOH, Pharmaceuticals Supply and Logistics Provisional Department
FMOH, Provisional Department for Human Resourses Development
Intra Health
I-Tech- Ethiopia
JHPIEGO- Ethiopia
Johns Hopkins University
MSF- Holland
National Network of Associations PLWHA
PLCU
Police Hospital
RPM+
St. Paulos Specialized Hopital
St. Peters TB specialized Hospital
UNAIDS-Ethiopia
UNICEF- Ethiopia
USAID- Ethiopia
WFP- Ethiopia
WHO- Ethiopia

ANNEX C

Monthly Reporting Forms

FEDERAL MINISTRY OF HEALTH OF ETHIOPIA

Health Facility Monthly Pre ART and ART Reporting Form

Month	**Year**
Region	**Woreda/ Kifle Ketema**
Name of Health Facility	

1. HIV care (non-ART and ART) - new and cumulative number of persons enrolled			
	Cumulative number of persons ever enrolled in HIV care at this facility at beginning of month	New persons enrolled in HIV care at this facility during the month	Cumulative number of persons ever enrolled in HIV care at this facility at end of month
1. Children under 18 months			
2. Children 18 - 60 month			
3. Children 5 - 14 years			
4. Male (> 14 years)			
5. Non-pregnant females (> 14)			
6. Pregnant females (> 14 years)			
Total			
	Total number of persons who are enrolled and eligible for ART but have not been started on ART		

2. ART - new and cumulative number of persons started			
	Cumulative number of persons ever started on ART at this facility at beginning of month	New persons started on ART at this facility during the month	Cumulative number of persons ever started on ART at this facility at end of month
1. Children under 18 months			
2. Children 18 - 60 month			
3. Children 5 - 14 years			
4. Male (> 14 years)			
5. Non-pregnant females (> 14)			
6. Pregnant females (> 14 years)			
Total			
	Number of persons on ART and already enrolled in program who transferred into facility during the month		
	Number of persons who restarted ART during the month, after stopping ART for at least 1 month		

FEDERAL MINISTRY OF HEALTH OF ETHIOPIA

Health Facility Monthly Pre ART and ART Reporting Form

3. ARV regimen at end of month				
On 1st-line ARV regimen		**Male**	**Female**	**Total**
3.1. Adults (>14 years)				
1a(30)	d4t(30)-3TC-NVP			
1a(40)	d4t(40)-3TC-NVP			
1b(30)	d4t(30)-3TC-EFV			
1b(40)	d4t(40)-3TC-EFV			
1c	AZT-3TC-NVP			
1d	AZT-3TC-EFV			
Total				
3.2. Children (0-14 years)				
4a	d4t-3TC-NVP			
4b	d4t-3TC-EFV			
4c	AZT-3TC-NVP			
4d	AZT-3TC-EFV			
Total				
Total adults and children on 1st-line regimens				
On 2nd-Line ARV regimen		**Male**	**Female**	**Total**
3.3. Adults (>14 years)				
2a	ABC-ddI-LPV/R			
2b	ABC-ddI-NFV			
2c	TDF-ddI-LPV/R			
2d	TDF-ddI-NFV			
Total				
3.4. Children (0-14 years)				
5a	ABC-ddI-LPV/R			
5b	ABC-ddI-NFV			
5c	TDF-ddI-LPV/R			
5d	TDF-ddI-NFV			
Total				
Total adults and children on 2nd-line regimens				
Total adults and children on 1st- and 2nd-line regimens				**Total currently on ART**

Completed by: _____ Signature: _____ Date: _____

Checked by: _____ Signature: _____ Date: _____

-- HEALTH FACILITY --

ANNEX D

HIV Care/ART clinic intake form

FEDERAL MINISTRY OF HEALTH OF ETHIOPIA

IV Care / ART clinic intake form

A. PATIENT REGISTRATION FORM

ealth facility Name:_____ Date:_____/_____/_____

ATIENT IDENTIFICATION

ame:_____ Father's Name:_____ Grandfather's Name_____

ate of Birth:_____/_____/_____ Age:_____ Gender: o Male o Female

RT Unique ID No.:_____ Patient Card No.:_____/_____

ARTIAL STATUS:

- Never Married
- Married (incl. de facto)
- Separated
- Divorced
- Widow/Widower

LEVEL OF EDUCATION:

- o No education
- o Primary
- o Secondary
- o Tertiary

RELIGION:

- o Muslim
- o Orthodox
- o Protestant
- o Catholic
- o Other

Occupation_____

IUSBAND / WIFE AND DEPENDENT CHILDREN AT HOME

Husband/Wife Children o Yes o No

If Yes: Age_____,_____,_____,_____,_____,_____,

ATIENT ADDRESS

egion:_____ Woreda /Kifle Ketema:_____

ebele/Peasant Association:_____ House No.:_____

elephone Number: Home_____ Mobile_____ Work:_____

ATIENT REFERRAL INFORMATION

rom with-in the hospital

- o In-patient
- o Medical Outpatient
- o TB Clinic
- o STI Clinic
- o PMTCT
- o General VCT
- o Pediatric Outpatient
- o Other Outpatient

)utside the Hospital

- o Health Centers
- o Public Hospital
- o Private Hospital
- o NGO/FBO Hospital
- o Private Clinic
- o Self-referred
- o Community Referred
- o Others
- o Unknown

ARE GIVER/EMERGENCY CONTACT INFORMATION:

ull Name:_____ Age:_____

ender: o Male o Female

elation:_____ o Other (Specify)_____

ddress: o Same as patient's address

egion:_____ Woreda/Kifle Ketema:_____

ebele/Peasant Association:_____ House No.:_____

elehone Number: Home_____ Mobile:_____ Work_____

INSTRUCTIONS:

A. PATIENT REGISTRATION FORM

Note: **All fields must be filled in**

Health Facility Name - Health Facility name as registered at the Ministry of Health

Date:- Use Ethiopian calendar and a format of DD/MM/YYYY

Name:- Enter patient's name

Father's Name:- Enter patient's father's name. If not known enter NA.

Grandfather's Name:- Enter patient's grandfather's name. If not known enter NA

Patient Card Number:- 6 digit number followed by year found on patient card to be issued to patient by facility at registration.

ART Unique ID No.- Patients should be assigned Unique ART number. This will be (region number/Woreda/ Facility /patient assigned 5 digit number/. The first patient to start ART in the clinic will be given 00001.

Date of Birth:- Use Ethiopian calendar and a format of DD/MM/YYYY. If only month and year are known then enter 00 for day, if only year is known then enter 00 for day and 00 for month.

Age:- Enter patient's current age in years. If patient is less than 5 years old, enter age in months.

Gender:- fill in the appropriate circle

Marital Status:- fill in appropriate circle

Level of Education:- fill in appropriate circle

Religion:- fill in appropriate circle

Occupation: Please fill in patient's job.

Husband/Wife and dependent children at home: Please fill the appropriate circle (Husband or Wife). fill in the appropriate circle for children. If there are children, please list all the ages in ascending order (eg 2,5,7...)

Patient Address:- Enter address at which patient normally lives

a. **Region** - Enter one of the following number codes
   1. Tigray (TG)
   2. Afar (AF)
   3. Amhara (AM)
   4. Oromia (OR)
   5. Somali (SO)
   6. Benshangul. Gumuz (BG)
   7. SNNPR (SN)
   12. Gambella (GA)
   13. Harar (HA)
   14. Addis Ababa (AA)
   15. Dire Dawa (DD)

b. **Woreda/Kifle Ketema** - For Addis Ababa enter patient's kifle ketema. For other regions enter patient's Woreda #.

c. **Kebele** - Enter patient's Kebele number

d. **House No.**- Enter patient's house number

e. **Home Telephone** - Enter patient's telephone number. If patient does not have a telephone enter NA.

f. **Mobile** - Enter patient's mobile (cell) telephone number. If patient does not have a mobile enter NA.

g. **Work:**- Enter patient's work telephone number. If patient does not have a work telephone enter NA.

Patient Referred From:- fill in appropriate circle. If patient is referred from Outside Clinic/Health Facility fill in the name of Clinic/Health Facility. If patient is referred from other fill in name of the other facility.

Care giving Relative Information:- Enter the name of family member that is aware of patient's serostatus to avoid unintended disclosure

a. **Name:**- Enter name of next of kin

b. **Father's name** - Enter the father's name of next of kin

c. **Age**- Enter the age, in years, of the next of kin

d. **Relation** - fill in the appropriate circle that best describes the relationship between the patient and the relative

Care giving Relative Address:- If the relative's address is the same as the patient, fill in the appropriate circle. If it is different then fill in the spaces using the same codes as listed above for Patient Address fields.

a. **Region** - Enter one of the region number codes listed above under Patient Address Region field.

b. **Woreda/Kifle Ketema** - For Addis Ababa enter the Kifle ketema. For other regions enter the Woreda #.

c. **Kebele/Peasant Association** - Enter relative's Kebele//Peasant Association Number

d. **House No.**- Enter relative's house number

e. **Home telephone** - Enter relative telephone number. If they do not have a telephone number enter NA.

f. **Mobile** - Enter relative's mobile (cell) telephone number. If they do not have a mobile enter NA.

Work - Enter relative's work telephone number. If they do not have a work telephone number enter NA.

FEDERAL MINISTRY OF HEALTH OF ETHIOPIA

HIV Care / ART clinic intake form

B. PAST MEDICAL / TREATMENT HISTORY FORM

Health facility Name:_____ Date:_____/_____/_____

PATIENT IDENTIFICATION

Name:_____ Father's Name:_____ Grandfather's Name_____

ART Unique ID No.:_____ Patient Card No.:_____/_____

PAST OPPORTUNISTIC ILLNESS (MARK ALL THAT APPLY)

- o Candidiasis
- o Candidiasis (Oropharyngeal)
- o CMV
- o Cryptococcal Infection
- o Cryptococcal Meningitis
- o Cryptosporidiosis
- o Diarrhea (>1 month)
- o Disseminated Atypical Mycobacteriosis
- o Encephalopathy
- o Fever (>1 month; unexplained)
- o Herpes Simplex (>1 month)
- o Kaposi Sarcoma
- o Minor Mucocutaneous Manifestations
- o Mycosis
- o PGL
- o PML
- o Pneumocystis Carinii Pneumonia
- o Pneumonia (recurrent)
- o Recurrent URTIs
- o Salmonella Septicemia
- o TB-Extrapulmonary
- o Toxoplasmosis (brain)
- o Wasting Syndrome

Other (specify)_____

PAST TESTS/TREATMENT

TB

o TB Smear Date:_____/_____/_____ Site/Health facility:_____

Result: o Note Determined o Negative o Positive o Pos+1 o Pos+2 o Pos+3 o Unknown

TB Tx o Yes o No Completed Tx o Yes o No

Date Tx Started _____/_____/_____ Date completed _____/_____/_____

Regimen: o Not Determined o 2SRHZ/6EH o 2HRZES/1HRZE/5HRE o 2HRZE/6HE

Post Treatment smear: o Sputum smear + Date_____/___/____ Smear negative Date _____/___/_____

HIV

HIV Test o Yes o No, if yes Date:_____/___/_____ Site/Health facility:_____

ARV Rx o Yes o No, if yes Start:_____/____/_____ Length (weeks)_____ o Still on Treatment

Regimen: o d4t (30)-3TC-NVP o d4t (40)-3TC-NVP o d4t (30)-3TC-EFV

o d4t (40)-3TC-EFV o AZT-3TC-NVP o 2nd line

o PMTCT o Yes o No If yes Site/Health facility:_____

Regimen: o Nevirapine o Non-Nevirapine_____ Baby Treated:_____

CD4

o CD4+ o Yes o No, if yes Date:_____/____/____ Site Health facility:_____ Result_____/mm3

MEDICATIONS:

Cotrimoxazole o Yes o No INH o Yes o No Fluconazole o Yes o No

Other Medication/s (Specify):_____

Known Drug - related Allergies

- o Penicillium
- o Cephalosporin
- o Sulfonamides (Cotrimoxazole, etc.)
- o Amino glycosides (Streptomycin, etc)
- o Other_____ (specify)

INSTRUCTIONS:

B. PAST MEDICAL / TREATMENT HISTORY FORM

Note: **All fields must be filled in**

Health Facility Name - Health Facility name as registered at the Ministry of Health
Date:- Use Ethiopian calendar and a format of DD/MM/YYYY
ART Unique ID No.- Patients should be assigned Unique ART number. This will be (region number/Woreda/ Facility /patient assigned 5 digit number/. The first patient to start ART in the clinic will be given 00001.
Patient Card No.- 6 digit number followed by year found on patient card to be issued to patient by facility.
Past Opportunistic Illness- fill in all applicable circles. Note that this information can be obtained from both the patient and any available medical/lab records.
Past Tests/Treatment- If a patient has had more than one of these tests in the past, list only the most recent ones. Indicate the test date using Ethiopian calendar and a format of DD/MM/YYYY. The site refers to the facility at which the test was performed. If unknown enter NA in space. For CD4test, if result is not available/unknown enter NA in result space.

a. **TB**-Enter date upon which patient initiated TB treatment and completed treatment using Ethiopian calendar and DD/MM/YYYY format
b. **ARV** - Enter date on which patient initiated ARV treatment using Ethiopian calendar and DD/MM/YYYY format. Enter the length of treatment (in number of weeks) calculated from the start date to date the treatment ended. If patient is currently on ARV treatment, calculate length of treatment from start date to today. Fill in the appropriate circle for regimen and for outcome.
c. **PMTCT** - Same as with ARV

Prophylaxis - Same general instructions as Past Treatment fields.
Currenty Medications - fill in all applicable circles. If 'Other' write in medications.

Known Drug Allergies - Fill in all applicable circles. If 'Other' write in drug name/class

ARV CLINIC PATIENT RECORD

C. GENERAL CONDITION/PHYSICAL EXAM

Health Facility Name:_____ Date:____/____/____

PATIENT IDENTIFICATION

Name: _____ Father's Name: _____ Grandfather's Name: _____

ART Unique ID No.: _____ Patient Card No.: _____/_____

VITAL SIGNS AND FUNCTIONAL LEVEL

Height (cm)	Weight (kg)	Temp (°C)	HR (b/m)	BP (s/d mmHg)	RR (R/m)
_ _ _	_ _ _	_ _	_ _ _	_ _ _/_ _ _	_ _

SYMPTOM SCREEN

- o Chronic Cough
- o Dyspnea
- o Hemoptysis
- o Chronic Fatigue
- o Weight Loss o _% body wt
- o Flu-like (URTI)
- o Night Sweats
- o Fever > 1 month
- o Dysphagia and/or Odynophagia
- o Nausea and/or Vomiting
- o Abdominal Pain
- o Numbness/Tingling
- o Persistent Headaches
- o Mental Confusion
- o Chronic Diarrhea
- o STI Symptoms

PATIENT'S PREGNANCY STATUS

o Pregnant EDD ___/___/___ o Not Pregnant o Not Applicable (male)

GENERAL APPEARANCE OF PATIENT AT PRESENTATION:

_____

_____

PHYSICAL EXAM

Physical Exam	Normal	Abnormal	Specify Abnormal Finding
HEENT			
Lymph nodes			
Chest			
Heart			
Abdomen			
Genitourinary System			
Musculo-skeletal system			
Skin			
Nervous System			

Other findings:

_____

_____

_____

_____

INSTRUCTIONS: C. GENERAL CONDITION/PHYSICAL EXAM

Note: All fields must be filled in

Health Facility Name – Health Facility name as registered at the Ministry of Health
Date: - Use Ethiopian calendar and a format of DD/MM/YYYY.
ART Unique ID No. –Patients should be assigned Unique ART number. This will be (region number/woreda/facility/patient assigned 5 digit number). The first patient to start ART in the clinic will be given 00001.
Patient Card No. - 6 digit number followed by year found on patient card to be issued to patient by facility
Functionalstatus–WorWork=working,AorAmb=ambulatory,BorBed=bedridden(Working=able to perform usualwork in or out of the house, harvest, go to school. Ambulatory=ambulatory but not able to work. Able to performactivities of daily living. Bedridden=not able to perform activities of daily living.
Vital Signs - Enter all the indicated vital signs. Symptoms – Fill in all applicable circles. Note the following:

a. For 'Cough' you can fill in duration and whether it is productive if applicable
b. For 'Fever' you can fill in duration if applicable
c. For 'Weight Loss' you can fill in if > than 10% of body weight
d. For 'Amenorrhea' you should enter the date of LMP using Ethiopian calendar and DD/MM/YYYY format
e. For 'Diarrhea' you can enter duration and if there is blood present

Patient's Pregnancy Status – fill in appropriate circle. If patient is currently pregnant indicate the Expected Delivery Date using Ethiopian calendar and a format of DD/MM/YYYY **Physical and Mental Examination** – fill in all applicable circles. Note that the left-hand column should be filled in if findings are normal. If findings are abnormal for any system, fill in applicable circles or spaces to the right.

ARV CLINIC PATIENT RECORD

D. CLINICAL REVIEW

Health Facility Name:_____ Date:_____/_____/_____

PATIENT IDENTIFICATION

Name:_____ Father's Name:_____Grandfather's Name: _____

ART Unique ID No.:_____ Patient Card No.: _____/_____

WHO STAGING

WHO Stage 1 Conditions

- o Persistent Generalized Lymphadenopathy (PGL)

WHO Stage 2 Conditions

- o Minor Mucocutaneous Manifestations
- o Weight Loss <10% of Body Weight
- o Herpes Zoster
- o Recurrent Upper Respiratory Tract Infections

WHO Stage 3 Conditions

- o Oral Candidiasis
- o Oral Hairy Leukoplakia
- o Unexplained Chronic Diarrhea (>1 month)
- o Unexplained Prolonged Fever (>1 month)
- o Weight Loss >10% of Body Weight
- o Bacterial Pneumonia
- o Other Severe Bacterial Infections (i.e. pyomyositis)
- o Pulmonary Tuberculosis

WHO Stage 4 Conditions

- o Extrapulmonary Tuberculosis
- o Atypical Mycobacteriosis
- o Crytococcosis Extrapulmonary
- o Herpes Simplex (mucocutaneous >1 month, or visceral
- o HIV Encephalopathy
- o Lymphoma
- o Mycosis, Disseminated (i.e. Histoplasma, Coccidioides)
- o Salmonella Septicemia, Non-typhoid
- o HIV Wasting Syndrome
- o Candidiasis (Esophagus, Trachea, Bronchi or Lungs)
- o Cryptosporidiosis with Diarrhea (>1 month duration)
- o CMV Disease (other than liver, spleen, lymph nodes)
- o Karposi's Sarcoma
- o PML
- o Pneumocystis Carinii Pneumonia (PCP)
- o Toxoplasmosis of the CNS

CLINICAL REVIEW

Does the Patient need evaluation for cough or TB?

o No o Yes if Yes, Order: o TB sputum smear o Empiric Antibiotics o Chest X-Ray

Does the Patient need evaluation for diarrhea?

o No o Yes Order: o Stool Examination o Empiric Antibiotics o Empiric Antiparasitics

Does the Patient need evaluation for fever?

o No o Yes Order: o Urine Analysis o Malaria Slide o Hb, WBC, Diff

o Blood Culture o Empiric Antibiotics o other (specify _____)

Does the Patient need prophylactic medication? o No o Yes

Does the Patient need evaluation for ARV treatment? o No o Yes

o Start Education Sessions If Yes: o Hgb, WBC with differential o Liver function test (ALT) o CD4 count

INSTRUCTIONS: D. CLINICAL REVIEW

Note: All fields must be filled in

Health Facility name – Health Facility name as registered to the facility by the Ministry of Health
Date: - Use Ethiopian calendar and a format of DD/MM/YYYY
ART Unique ID No. –Patients should be assigned Unique ART number. This will be (region number/Woreda/facility/patient assigned 5 digit number). The first patient to start ART in the clinic will be given 00001.
Patient Card No. - 6 digit number followed by year found on patient card to be issued to patient by facility.
WHO Staging – fill in all applicable circles in each level. Note that a patient's WHO stage is the highest stage that has at least one circle filled in.
Clinical Review – The purpose of this section is to help the clinical provider develop an appropriate plan of care based on HIV/AIDS treatment guidelines. Any 'Order' circles filled in should be followed up with the appropriate laboratory/X-ray request form.

FEDERAL MINISTRY OF HEALTH OF ETHIOPIA

HIV Care/ ART Clinic Intake form

E. SOCIAL ASSESSMENT

Health Facility Name:_____ Date:_____/_____/_____

PATIENT IDENTIFICATION

Name: _____ Father's Name:_____ Grandfather's Name:_____

ART Unique ID No.: _____ Patient Card No.: _____/_____

EMPLOYMENT

Current employment: o Working full time o Working part-time o Not working /Studying due to ill health
o Unemployed

Other (Specify): _____

Employer's Name _____ Department _____Position_____

Does/Did illness affect ability to carry out this employment/study? o Yes o No If yes how often_____

If No is there any impact due to illness? _____

LIVING CONDITIONS

Home: Number of rooms _____ o Running water o Electricity

Number of people in the household _____

RELIGIOUS/SUPPORTIVE CARE

Religious conviction

o Muslim o Orthodox o Protestant o Catholic o Other

Spiritual caregiver _____

Community Support/HIV support groups o Yes o No

DISCLOSURE

Does anyone else know about your HIV Status?

Family o Wife/Husband o Own Child (ren) o Parents (s) o Brothers(s)/Sister(s)

Others o Relatives o Friends

FAMILY MEMBERS – SPOUSE

Condition of wife/husband: o Healthy o Chronic Ill o Dead o Unknown

HIV tested Result o Not Asked o Negative o Positive o Unknown

TB Result o Not Asked o Negative o Positive o Unknown

Was/Is on ARV treatment Yes o No o **Was/Is on TB treatment** Yes o No o

FAMILY MEMBERS – CHILDREN

Number of children alive _____ Number HIV tested_____ Number positive ____ Number chronically ill ____

Number of children died _____ Number HIV tested_____ Number positive ____ Number were chronically ill ____

ISSUES/CONCERNS INDENTIFIED

General

- o Concerns about financial issue within the family
- o Concerns about the children
- o Concerns regarding marital relationship
- o Concerns regarding family relations
- o Bereavement/grief
- o HIV status disclosure concerns
- o Adherence to treatment concerns
- o Dietary Problems
- o Other concerns

INSTRUCTIONS:

E. SOCIAL ASSESSMENT

Health Facility name – Health Facility name as registered at the Ministry of Health

Date: - Use Ethiopian calendar and a format of DD/MM/YYYY

ART Unique ID No.- Patients should be assigned Unique ART number. This will be. (region number/Woreda/ Facility /patient assigned 5 digit number). The first Patient to start ART in the clinic will be given 00001.

Employment Details (especially important if the clinic is workplace clinic)

Company - Fill in the name of the company where the patient works. If the patient is not working at this time enter NA.

Department – Fill in the department in which the patient works. If not known or not applicable enter NA

Employer's Working/Study: -

a. **Working full time –** If the patient is full time employee
b. **Working part – time** – If the patient works on part time base.
c. **Not Working/studying due to ill health.** – If the patient couldn't work/or study due to HIV/AIDS related problems
d. **Unemployed –** If the patient doesn't work due to not HIV/AIDS related problems but other factors
e. **Other (specify)-** Include students, housewives and other employment categories.

Disclosure: if any one knows the status of the patient/child at work place, school, family and other community members.

Family Members:

a. **Family** : Spouse and/or children aware of the patient's serostatus
b. **Others**: other relatives, friends etc who are aware of the patient's serostatus

Family Member: spouse: please fill in the appropriate circle to indicate the health status of the spouse

Family Member: children: please fill in the appropriate circle to indicate the health status of the child

Issues/Concerns Identified: please fill in the appropriate circle to indicate the issues/Concerns identified

Social assessment should be conducted whenever the patient comes to the Health facility by counselors or ART nurse

FEDERAL MINISTRY OF HEALTH OF ETHIOPIA

HIV Care/ ART Clinic

F. ART ADHERENCE COUNSELING

Health Facility Name:_____ Date:_____/_____/_____

PATIENT IDENTIFICATION

Name: _____ Father's Name:_____ Grandfather's Name:_____

ART Unique ID No.: _____ Patient Card No.: _____/_____

HEALTH EDUCATION & KNOWLEDGE

- o Attended HIV related health education session(s) in the past
- o Attended HIV related counseling session(s) in the past

Understanding of HIV disease:	o NA	o -	o +	o ++	o +++
Understanding of HIV transmission:	o NA	o -	o +	o ++	o +++
Understanding of prophylaxis and treatment of OI:	o NA	o -	o +	o ++	o +++
Understanding of ART medication adherence:	o NA	o -	o +	o ++	o +++

RISK – BEHAVIOR

- o Has regular sexual partner
- o Has casual sexual partner(s) – Number of casual partners in last 3 months o 1 o 2 o 3 o >3

Condom use o NA o Never o Rarely o Sometimes o Mostly o Always o No response

Addictions

Tobacco	o NA	o -	o +	o ++	o +++	
Alcohol	o NA	o -	o +	o ++	o +++	
Soft Drugs	o NA	o -	o +	o ++	o +++	e.g., Khat, Shisha, pills, etc
Hard Drugs	o NA	o -	o +	o ++	o +++	e.g., cocaine, morphine, i.v.-drugs, etc.

Adherence: Concerns/barriers to ART:

- o Stigma (family and friends will find out)
- o Afraid of medications (side effects; "poison")
- o Doubt that medications will work
- o Depressed/anxious
- o Will forget to take medications
- o Other _____

GENERAL FEELING

Since your last visit, have you had any problems or complaints? o No o Yes

Have you been hospitalized? o No o Yes

How has your appetite been since your last visit? o Not Asked o Good o OK o Poor

How has your strength been since your last visit?

o Normal o Weak, but not in bed o Very weak, often in bed o Extremely weak, mostly in bed

How many days have you been too sick to work? _____ o Lost job due to current illness

Evaluator's impression about mental condition

o At ease o Confused o Depressed o Anxious o Suicidal

APPROPRIATE REFERAL

o Physician o Pharmacy o Social Services o Laboratory o Community Based Organizations

INSTRUCTIONS:

F. ART ADHERENCE COUNSELING

Note: <u>All</u> fields must be filled in

This form must be completed each time a patient is seen at the ART clinic

Health Facility name – Health Facility name as registered at the Ministry of Health
Date: - Use Ethiopian calendar and a format of DD/MM/YYYY
ART Unique ID No.- Patients should be assigned Unique ART number. This will be. (region number/Woreda/ Facility /patient assigned 5 digit number). The first Patient to start ART in the clinic will be given 00001.
Patient Card No.-6 digit number followed by year found on patient card to be issued to patient by facility.
Health Education & Knowledge – fill in appropriate circles. Scale is from '– None' to'+++ A great deal'
Life Style – fill in appropriate circles. Scale is from'-No use' to'+++ A great deal of use'
Issues Identified – fill all applicable circles, counsel and refer when necessary.
Adherence questions – fill in appropriate circle for each question. Educate patient adherence at every visit.
General Feeling questions- fill in appropriate circles. Some questions may be more appropriate at follow-up. Counsel patient accordingly.
Appropriate referral: fill in appropriate circles and refer patient according to identified needs discovered during counseling.

The Adherence counseling form need to be filled by the counselor or nurse every time the patient comes to clinic. This form should be copied.

FEDERAL MINISTRY OF HEALTH OF ETHIOPIA

HIV Care/ ART Clinic Intake form

G. ART ASSESSMENT AND PLAN

Health Facility Name:_____ Date:_____/_____/_____

PATIENT IDENTIFICATION

Name: _____ Father's Name:_____ Grandfather's Name:_____

ART Unique ID No.: _____ Patient Card No.: _____/_____

ARV ELIGIBILITY CRITERIA

Clinical Criteria:

CD4 below 200	o Yes	o No
WHO Stage IV	o Yes	o No
Who Stage II and III with TLC≤1200	o Yes	o No

Social Criteria:

Resident of catchments area	o Yes	o No
No identified barriers for adherence	o Yes	o No

PLAN

1. **OI Prophylaxis (dd/mm/yy)**

Cotrimoxazole: Start___/___/___ Continue___/___/___ Discontinue___/___/___ Start at a later date___/___/___

NH: Start___/___/___ Continue___/___/___ Discontinue___/___/___ Start at a later date___/___/___

Fluconazole: Start___/___/___ Continue___/___/___ Discontinue___/___/___ Start at a later date___/___/___

2. **Treatment for other conditions:** o **Yes**_____ o **No**_____

   If Yes: Diagnosis:_____ Treatment: _____

   If Yes: Diagnosis: _____ Treatment: _____

3. **Recommend ART**

   o Yes _____ o No _____ o Deferred (State reason) _____

   If yes, specify regimen:

   - o 1a(30) = d4t (30)-3TC-NVP
   - o 1a(40) = d4t (40)-3TC- NVP
   - o 1b(30) = d4t (30)-3TC-EFV
   - o 1b(40) = d4t (40)-3TC-EFV
   - o 1c = AZT-3TC-NVP
   - o 1d = AZT-3TC-EFV

INSTRUCTIONS: **G. ART ASSESSMENT AND PLAN**

Note: <u>All</u> fields must be filled in

Form G is to be completed at the second visit by the treating physician

Health Facility name – Name as registered at the Ministry of Health

Date: - Use Ethiopian calendar and a format of DD/MM/YYYY

ART Unique ID No.- Patients should be assigned Unique ART number. This will be. (region number/Woreda/ Facility /patient assigned 5 digit number). The first Patient to start ART in the clinic will be given 00001.

Patient Card No.-6 digit number followed by year found on patient card to be issued to patient by facility.

ARV Eligibility Criteria – Clinical Criteria: fill in the appropriate circle to indicate the ARV Eligibility Clinical Criteria

ARV Eligibility Criteria – Social Criteria: fill in the appropriate circle to indicate the ARV Eligibility Social Criteria

Plan- OI Prophylaxis: please use the appropriate blank space to fill the appropriate date (dd/mm/yy)

Plan- Treatment for other conditions: fill in the appropriate circle

Plan- Recommend ART: please fill in the appropriate circle

ANNEX E

Questionnaire

QUESTIONNAIRE

This questionnaire is part of the Masters Thesis study entitled "An Assessment of the ART Patient Monitoring System in Ethiopia". The objective of this survey is to identify the strong and weak points of the ART monitoring system in Ethiopia.

This questionnaire has three types of questions. In the first type of questions you should find and circle one of the presented alternatives that represent your response. The second types of questions are open ended where you are expected to write down your response. The third types of questions are organized in such a way that they provide a scale of 1-7 on which to express your opinion. If you disagree with a statement then use the left side of the scale and determine how much disagreement that is – strongly disagree (1), mildly disagree (2) or disagree (3) and circle the appropriate answer. If you are not sure of the intensity of belief or think that you neither disagree nor agree, then circle 4. If you agree with the statement, then use right side of the scale and determine how much agreement that is – agree (5), mildly agree (6) or strongly agree (7) and circle the appropriate answer.

This information will remain confidential and would not be shared with anyone, except presented as an aggregated data report. Please be frank and choose your answers with honesty. I appreciate your assistance and co-operation in completing this study.

Thank you.
Michael Tsegaye

Name of facility _____

Title of the person filling the questionnaire (circle answer)

1. Doctor
2. Nurse
3. Data Clerk
4. Other facility staff (specify)_____

Age of the person _____

Sex Male_____ Female_____
Education (circle answer)

1. High School Certificate 2. Diploma 3. Bachelor 4. Master

5. Doctorate Degree

6. Other (specify) _____

Years of employment _____

Part One

1.1 What are your responsibilities in the facility?

_____

_____

_____

1.2 Did you receive any training in Health Management Information Systems or ART patient monitoring system related activities in last six months? Yes____ No_____

If so, what was the training about?

_____

_____

1.3 What methods do you use to collect information on patients?

_____

_____

_____

1.4 What specific forms do you fill out?

_____

_____

1.5The forms are user friendly	1	2	3	4	5	6	7
1.6 there are unnecessary forms to be filled out	1	2	3	4	5	6	7
1.7 Not whole forms but there are unnecessary questions in the forms	1	2	3	4	5	6	7
1.8 There are clear standards as what the quality of the data should be	1	2	3	4	5	6	7
1.9 Overall, the organization of the data collection method is efficient	1	2	3	4	5	6	7

1.10 How do you register the collected information?

_____

_____

1.11 Is there a way to cross check the accuracy of the collected information? Yes____ No_____
If yes, What are they?

_____

_____

1.11 How do you report the collected information?

_____

_____

1.12 What improvements could be made in the collecting and reporting procedures?

_____

_____

Part Two

2.1 There is clarity about roles and responsibility for information use	1	2	3	4	5	6	7
2.2 In health department, decisions are based on							
2.2.1 Personal liking	1	2	3	4	5	6	7
2.2.2 Superiors' directives	1	2	3	4	5	6	7
2.2.3 Evidence/facts	1	2	3	4	5	6	7
2.2.4 Political interference	1	2	3	4	5	6	7
2.2.5 Strategic objectives	1	2	3	4	5	6	7
2.2.6 Community health needs	1	2	3	4	5	6	7
2.2.7 Considering costs	1	2	3	4	5	6	7
2.2.8 Considering all alternatives and their consequences	1	2	3	4	5	6	7
2.2.9HMIS data	1	2	3	4	5	6	7
2.3 Overall, in the center decisions are based on evidence	1	2	3	4	5	6	7
2.4 There is clarity about the flow of information throughout the system	1	2	3	4	5	6	7

2.5 The center has enough trained staff	1	2	3	4	5	6	7
2.6 The telecommunication equipments are adequate	1	2	3	4	5	6	7

2.7 In your opinion what measures can be implemented to improve the technical capacity of the center?

_____

_____

_____

_____

2.8 In health department, superiors

2.8.1 Promote team work	1	2	3	4	5	6	7
2.8.2 Seek feedback from concerned persons	1	2	3	4	5	6	7
2.8.3 Emphasize data quality in monthly reports	1	2	3	4	5	6	7
2.8.4 Are open to alternative views	1	2	3	4	5	6	7
2.8.5 Listen to employees ideas and concerns	1	2	3	4	5	6	7
2.8.6 Allow disagreements before reaching a decision	1	2	3	4	5	6	7
2.8.7 Are concerned about serving target community/clients needs	1	2	3	4	5	6	7
2.8.8 Discuss conflicts openly to resolve them	1	2	3	4	5	6	7

2.8.9 Seek feedback from concerned community	1	2	3	4	5	6	7
2.8.10 Use HMIS data for setting targets and monitoring	1	2	3	4	5	6	7

2.9 Describe at least three ways of checking data quality.

1. _____

2. _____

3. _____

Part Three

3.1 In health department, staff

3.1.1 Perform duties honestly	1	2	3	4	5	6	7
3.1.2 Are punctual	1	2	3	4	5	6	7
3.1.3 Help each other in serving the patients	1	2	3	4	5	6	7
3.1.4 Feel committed in improving health status of the target population	1	2	3	4	5	6	7
3.1.5 Live on their earned money (do not take bribe)	1	2	3	4	5	6	7
3.1.6 Set appropriate and doable target of their performance	1	2	3	4	5	6	7
3.1.7 Feel guilty for not accomplishing the set target/performance	1	2	3	4	5	6	7
3.1.8 Are rewarded for good work	1	2	3	4	5	6	7

3.1.9 Feel that data collection

is an important activity	1	2	3	4	5	6	7
3.1.10 Feel that promotion is based on merit	1	2	3	4	5	6	7
3.1.11 Rely on data for planning and monitoring set target	1	2	3	4	5	6	7
3.1.12 Are given appropriate training For HMIS activities	1	2	3	4	5	6	7
3.1.13 Have the required forms and instruction guides for HMIS activities	1	2	3	4	5	6	7
3.1.14 Facilities receive timely monthly feedback on their submitted report	1	2	3	4	5	6	7
3.1.15 Facilities are directed to display data For monitoring their set target	1	2	3	4	5	6	7
3.1.16 Can gather data to find the root cause(s) of the problem	1	2	3	4	5	6	7
3.1.17 Can develop appropriate criteria for selecting intervention for a given problem	1	2	3	4	5	6	7
3.1.18 Can develop appropriate outcomes of a particular intervention	1	2	3	4	5	6	7
3.1.19 Can evaluate whether the targets /outcomes have been achieved	1	2	3	4	5	6	7
3.1.20 Are empowered to make decisions	1	2	3	4	5	6	7
3.1.21 Are told that their efforts make a difference in improving health status of the target population	1	2	3	4	5	6	7

3.1.22 Are made accountable for poor performance	1	2	3	4	5	6	7
3.1.23 Usually document what they do	1	2	3	4	5	6	7
3.1.24 Always tell the truth	1	2	3	4	5	6	7
3.1.25 Put a lot of efforts on HMIS activities	1	2	3	4	5	6	7
3.2 Collecting information which is not used for decision making discourages me	1	2	3	4	5	6	7
3.3 Collecting information makes me feel bored	1	2	3	4	5	6	7
3.4 Collecting information is a meaningful work for me	1	2	3	4	5	6	7
3.5 Collecting information give me the feeling that data is needed for monitoring facility performance	1	2	3	4	5	6	7
3.6 Collecting information give me the Feeling that it is forced on me	1	2	3	4	5	6	7
3.7 Collecting information is appreciated by Co-workers and superiors	1	2	3	4	5	6	7
3.8 Collecting information makes me feel that I need training in data collection, analysis and display	1	2	3	4	5	6	7

3.9 To what extent do you feel satisfied with your job on scale of 1-7 from very dissatisfied (1) to very satisfied (7). Circle your answer.

1. Very dissatisfied
2. Somewhat dissatisfied
3. Dissatisfied
4. Neither dissatisfied nor satisfied
5. Satisfied
6. Somewhat satisfied
7. Very satisfied

Declaration

I, the undersigned, declare that this is my original work which has not been presented for a degree in this or any other university and all sources used for the thesis have been duly acknowledged.

Name Michael Tsegaye

Signature 

Date August 16, 2007