

Toward Universal Access to HIV Counseling and Testing and Antiretroviral Treatment in Ethiopia: Looking Beyond HIV Testing and ART Initiation

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Abstract

Expanding access to HIV counseling and testing (HCT) and antiretroviral treatment (ART) has reduced morbidity and mortality in people living with HIV/AIDS. As a result, many countries are scaling up HIV/AIDS services. In this paper we discuss challenges experienced during the move toward universal access to HCT and ART services in Ethiopia. We reviewed routine reports from the Ministry of Health and implementing partners. We also had interviews, about linkage to and retention in care of patients, with 10 HIV/AIDS program managers, as well as 2 to 7 health care providers and 5 to 15 patients in each of 23 health centers and 32 hospitals in all regions of the country. We found that the number of people tested for HIV increased 10-fold from 435,854 in 2005 to 4,559,954 in 2008. Only 61% of the HIV-positive patients were linked to chronic care immediately after tested for HIV. The number of patients initiated on ART annually increased from 26,021 in 2005 to 53,696 in 2008. Attrition of patients increased from 18% in 2005 to 26% in 2008. Our interviews indicated that fear of stigma, transport cost, feeling healthy and opting for traditional medicines were the main reasons for poor linkage to and retention in care. Lack of nutrition and feeling better were also reasons for poor retention. In conclusion, in spite of the rapid scale-up of HCT and ART services in Ethiopia, linkage and retention were not adequate. Therefore, strategies should be developed and implemented to improve linkage and retention.

Introduction

EXPANDING ACCESS TO HIV counseling and testing (HCT) and antiretroviral treatment (ART) has been reported to reduce morbidity and mortality in people living with HIV/AIDS world-wide.¹⁻³ However, obstacles related to health systems such as a critical shortage of human resources and a lack of sustainable long-term funding need to be addressed for an effective and sustainable scale-up.⁴

The World Health Organization, in view of the need for enormous scale-up of HCT and ART services and the resources gap in resource-limited countries, recommends the public health approach. This approach requires decentralized and integrated service delivery of care, task shifting and specialized support, free service at the point of care, strengthened procurement and supply management and tracking progress to facilitate large-scale delivery of HCT and

ART services.⁴⁻⁶ Many pilot projects and the "3 by 5" initiative⁷ taught valuable lessons on HIV/AIDS services, and showed how simplified and standardized service delivery models can greatly facilitate the scaling up of these services in resource limited settings. Inspired by these lessons, Ethiopia and many other countries are scaling up HIV/AIDS services toward universal access.⁸⁻¹⁰

It has been reported that the efficacy of ART, as reflected by virological and immunological responses, is similar among patients treated in high-income countries and in low-income countries.^{2,11} Therefore, the impact of HCT and ART programs in low-income countries is unlikely to be related to questions of drug efficacy, but rather health system issues and program effectiveness.¹²

To measure the effectiveness of HCT and ART programs, parameters need to be developed, based on key goals of the programs. The three key goals of HCT and ART programs are:

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(1) early initiation of eligible patients on ART through early diagnosis and linkage of HIV-positive patients to chronic care (intermediate goal); (2) prevention of mortality; and (3) retention of patients within the program (ultimate goals). Few assessments have been made of the successes and challenges of HCT and ART programs in relation to the above mentioned intermediate and ultimate goals while scaling up the services toward universal access in Ethiopia.

In three earlier articles we examined spatial and temporal patterns in ART provision and utilization in Ethiopia in 2006, the first year of free treatment,¹³ the use of the public health approach in ART scale-up¹⁴ and the success in expanding access to ART in Ethiopia.¹⁰ The objective of the current article is to describe the challenges encountered in the move toward universal access to HCT and ART services during the 4 years (2005–2008) of free ART services in Ethiopia.

Methods

The HIV/AIDS program in Ethiopia

According to the most recent estimates, approximately 1 million people (2.3% of the adult population) were living with HIV in Ethiopia in 2009. In the same year, more than 300,000 people need ART.¹⁵ A fee-based ART program was officially started in 2003. Moreover, a number of initiatives have been undertaken to expand the availability of ART in Ethiopia, including those by the Global Fund, PEPFAR, the Ethiopian North American Health Professionals Association (EN-AHAPA), the Clinton Foundation and the Ethiopian Red Cross Society.¹⁶ As a result, a free ART program was launched in early 2005. Consequently, ART services have been decentralized and they are available in both health centres and hospitals since August 2006.^{10,14}

The first-line ART regimen used consists of two nucleoside reverse transcriptase inhibitors plus 1 non-nucleoside reverse transcriptase inhibitor. Stavudine-lamivudine-nevirapine accounted for 46%, zidovudine-lamivudine-nevirapine for 18%, stavudine-lamivudine-efavirenz for 23%, and zidovudine-lamivudine-efavirenz for 13% of the patients taking ART in the country. Patients were started on ART based on clinical and immunological criteria: World Health Organization stage 4; stage 3 and CD4 count less than 350; or CD4 count less than 200 cells per microliter of blood. Once patients were eligible for ART, they were counseled for ART adherence and appointed after two weeks for ART initiation. Patients had their chemistry, hematology, and CD4 cells count determined before ART initiation and every 6 months afterwards. Patients were also screened for active opportunistic infections (OIs), such as tuberculosis; and patients with active OIs were treated according to the national guidelines.

All patients who received nevirapine-based ART were scheduled to return 2 weeks after ART initiation for review and dose escalation, unless contraindicated. Once patients were started on ART they would have visits every 2 weeks for the first month and then every month for the first 3 months and then every 3 months unless they had problems.

Data collection and analysis

We used both quantitative and qualitative methods for this study. The quantitative part included the review of the data base comprising routine reports on all HCT and ART pro-

grams in Ethiopia released by the Ethiopian Federal HIV/AIDS Prevention and Control Office (FHAPCO), Ministry of Health, for the 4-year period, 2005–2008. The reports can be accessed from the FHAPCO and National AIDS Resource Center websites: www.fhapco.gov.et and www.etharc.org. Regular reports from implementing partners were also reviewed.

The data on number of people tested for HIV, HIV-positives, HIV-positives linked to care, and number of patients started on ART, retained in care, who died, lost to follow-up at the end of each year were analyzed using SPSS (SPSS Inc., Chicago, IL). Health facility assessment reports and proceedings of review meetings were used to substantiate the findings. We also conducted trend analysis to estimate the parameters that are defined below for the purpose of this study.

The qualitative study focused on linkage to and retention in care, loss to follow-up and the reasons for not being linked to chronic care and loss to follow-up. Interviews were conducted with 10 HIV/AIDS program managers of 7 government and 3 nongovernmental organizations, as well as 2 to 7 health care providers and 5 to 15 patients on ART in each of 32 hospitals and 23 health centers in all regions of the country. We used purposive sampling and selected the participants in consultation with health facility heads, facility HIV/AIDS focal persons, and leaders of people living with HIV/AIDS associations. We used a semistructured questionnaire for face-to-face interviews. The interviews, contemporaneous to note taking, were recorded in local languages. Interviews continued until saturation was reached and no new information was emerging. The records were transcribed. The data from the notes and transcripts was grouped by emerging themes. Iterative analyses allowed further categorization of data to identify emerging subthemes from the main themes.

- **Linkage:** The relationship between HCT facilities or units and HIV/AIDS care and treatment facilities or units. It includes both intrafacility and interfacility linkages.
- **Mortality:** Death occurring while on ART.
- **Dropped out:** Patients who were lost to follow-up for 3 months or more.
- **Temporary stopped treatment:** Patients who were lost to follow-up for less than 3 months.
- **Retention:** Retention of patients in the program while on ART. It is the proportion calculated by dividing those who are alive and on ART by the total number of patients started on ART.
- **Attrition:** The proportion of patients who left the program due to death or loss to follow-up, which includes those who dropped out and temporary stopped their ART. Attrition is the opposite of retention.
- **Long-term care services:** Services that are provided to people living with HIV/AIDS and encompass services delivered at health facility and community levels using multidisciplinary teams.

Results

The number of facilities providing HCT services increased from 775 in 2005 to 1336 in 2008. The number of people tested annually for HIV increased from 436,854 in 2005 to 4,559,954 in 2008 (Table 1). Of the total number of people tested for HIV

TABLE 1. SCALING UP OF HCT AND ART SERVICES AND RETENTION OF PATIENTS IN CARE IN ETHIOPIA, 2005–2008

Year	Number of people tested for HIV during the year	Number of patients started on ART during the year	Cumulative number of patients started on ART by the end of the year (a)	Number of patients alive and on ART by the end of the year (b)	Percentage of patients retained in care by the end of the year (b/a)
2005	436,854	26,021	26,921	22,147	82%
2006	564,351	45,206	72,127	57,623	80%
2007	1,922,667	54,722	126,849	94,027	74%
2008	4,559,954	53,696	180,545	132,865	74%

HCT, HIV counseling and testing; ART, antiretroviral treatment.

(7,483,825) between 2005 and 2008, 436,572, (6%) were found to be HIV positive, but only 264,454 (61%) patients were reportedly linked to chronic care services.¹⁷ A linkage assessment, including 1794 records of newly diagnosed HIV-positive patients, was conducted in mid 2008. Results show that 1,314 (73%) patients were referred for care and treatment services, and that only 623 (47%) were enrolled for chronic care immediately after they were tested positive for HIV.¹⁸ The private sector program in Ethiopia is providing mobile HCT services to high-risk individuals. A report from this program has indicated that only 529 (26%) of 2035 HIV-positive individuals were linked to chronic care facilities within 2 months of referral to chronic care between March and August 2008.¹⁹

The number of health facilities providing ART increased from 3 in 2005 to 353 in 2008. The number of patients started annually on ART increased from 26,021 in 2005 to 53,696 in 2008 (Table 1). The cumulative number of people who were started on ART increased from 26,921 by the end of 2005 to 180,545 by the end of 2008 (Table 1). Attrition from care and treatment settings has also been significant during the rapid scale-up of ART in the country, increasing from 18% by the end of 2005 to 26% by the end of 2008.²⁰

A report on survival analysis of patients who started ART between September 2003 and October 2007 indicated that 79%, 73%, and 65% of the patients were alive and on treatment after 6, 12, and 24 months on ART, respectively. The report showed that attrition due to loss to follow-up was more than twice that of attrition due to death (Table 2). The same report also showed that 80% of all the loss to follow-up or death occurred during the first year of ART.²¹

In an assessment conducted in 2009, it was found that 1716 (6%) and 5266 (19%) of the 27,061 patients on ART were dead or lost to follow-up, respectively, over a period of 12 months of follow-up.²² A study conducted by FHAPCO to identify the real outcomes of patients who left the program between September 2005 and August 2007 indicated that 24,038 (25%) of the 97,258 patients enrolled on ART during that 24-month period were lost to follow-up. Further analysis of the re-

ports of these patients revealed that the majority (55%) discontinued follow-up for 3 months or more (defined as dropped-out), that 34% had reportedly died and 11% discontinued their treatment for less than 3 months (defined as temporary stopped treatment).²³

Patient tracing was conducted in 7 hospitals in the country with the objective to bring back patients who left the program for a variety of reasons. Thus 1523 patients lost to follow-up after having started ART were traced, and 549 (48%) of them were found to be alive; 369 (51%) of the 549 patients were able to return to hospitals and restart their ART.²³

Interviews with program managers and health care providers indicated that linkage to and retention in care are real challenges during scaling up of HCT and ART services. They stressed that the objective of HIV testing should go beyond knowing ones HIV status, and should include linkage to chronic care so that patients can benefit from the available care and treatment services. Inadequate post-test counseling, fear of stigma, feeling healthy, use of traditional medicines, including holy water, fear of side effects of medicines, and distance to treatment sites were the main reasons described for poor linkage. Program managers and service providers recommended that there should be a strong posttest counseling service and an appropriate referral and linkage system to improve the poor linkage currently prevailing in the country. They also emphasized that retention in care is another concern during the scaling up of ART. They attributed poor retention mainly to distance, transport cost, nutrition, stigma, opting for traditional medicines and feeling better. They recommended that there should be strong adherence counseling to improve compliance for regular follow-up and a defaulter tracing mechanism to bring back patients lost to follow-up.

Interviews with patients revealed that fear of stigma, feeling healthy, lack of trust in the services, distance to treatment centers and transport cost, lack of support, and use of alternative traditional medicines were the main reasons for poor linkage. They added that alternative traditional medicines such as holy water, lack of family and community support,

TABLE 2. ART OUTCOMES IN COHORTS OF PATIENTS STARTED ON ART IN ETHIOPIA BETWEEN 2003 AND 2007

Indicators	6 month	12 month	24 month
Patients on ART	89,451	60,476	17,602
Mortality	5,768 (6.5%)	5,201 (8.6%)	2,077 (11.8%)
Loss to follow-up	12,881 (14.5%)	11,127 (18.4%)	4,048 (23.2%)
Attrition	18,649 (21%)	16,328 (27%)	6,125 (35%)
Alive and on ART	70,802 (79%)	44,148 (73%)	11,477 (65%)

ART, antiretroviral treatment.

feeling better after ART initiation, lack of adequate nutrition, poor patient handling, and distance to treatment centers and transport cost were the major reasons for poor retention in care. Patients recommended that strategies to improve linkage to and retention in care should address these challenges.

Discussion

Ethiopia has been able to expand HCT and ART services rapidly by implementing the public health approach.^{5,9,24} However, linkage of HIV-positive patients to chronic care (47%) was poor.¹⁷ Moreover, attrition of patients due to either death or loss to follow-up was high (Tables 1 and 2).^{19,25}

There have been health systems, societal and personal barriers to access to HCT and ART services in resource limited countries.^{26–28} In spite of these barriers many sub-Saharan African countries are able to scale-up HCT and ART services using the public health approach.^{4,29} There are, however, few reports on linkage of HIV-positive patients to chronic care. It seems that linkage is somewhat neglected in many AIDS programs in both developing and developed countries. On the other hand, retention is increasingly becoming a concern to many AIDS programs. It has been reported that the average retention of patients in sub-Saharan African countries is 60% after 2 years of treatment.³⁰ In Ethiopia, patient retention after 2 years of treatment is slightly higher (65%), although it is not satisfactory.^{20,21,30} Mortality estimates based on passive follow-up of patients constitute a larger proportion of the attrition rate in many African countries.^{23,30,31} Once patients have started taking ART and survived the initial few months of treatment, the risk of death or loss to the program thereafter is low.³¹

Our interviews with program managers, health care providers, and patients indicated that fear of stigma, feeling healthy, lack of trust on the services, distance and transport cost, nutrition, opting for alternative traditional medicines, and lack of family and community support are the main reasons for poor linkage and retention in care. These reasons are also described in many studies in developing countries.^{26–28,32–34} We believe this kind of evidence can facilitate the development of optimum models of chronic care that can improve linkage to and retention in care of AIDS patients.

One of the strengths of this study is that it assessed the national HIV/AIDS program and included all health facilities providing HCT and ART services in the country. However, it is highly likely that the rates of linkage and retention are variable from facility to facility. Therefore, we recommend further investigations of health facilities to identify the ones with better linkage and retention rates and the underlying reasons, with the objective of strengthening services in facilities with poor linkage and retention. The second strength of our study is that it is based on data coming from a routine health service delivery setting, which reflects the operational reality on the ground. The third strength of the study is that it touches critical areas (linkage and retention) that can indicate the effectiveness of HCT and ART services. Moreover, it highlights linkage that is not well addressed in many HIV/AIDS programs. The limitation of our study is that it is based on routine surveillance data that may sometimes be incomplete.

In conclusion, Ethiopia made rapid progress toward universal access to HCT and ART services between 2005 and 2008. However, linkage to and retention in chronic care of patients was poor and need to get equal attention as scaling

up of HCT and ART services. Therefore, strategies that ensure continuity of care, based on the long-term care model, need to be developed and implemented at all levels of service delivery, involving both health facilities and communities.^{32,35} Moreover, a defaulter tracing system needs to be put in place to trace patients lost to follow-up and to support them to restart their treatment. However, the most effective and efficient ways of improving linkage to and retention in care are not yet well known; hence, HCT and ART programs need to identify highly context-specific solutions to these challenges.

Contributions

Y.A.: Conceived the study concept and design, collected the data and performed the statistical analysis and drafted the article. W.V.D.: Gave advice on analysis and interpretation of the results, and critically reviewed all drafts. D.H.M. and H.K.: Critically reviewed several drafts. Y.A., W.V.D., D.H.M., and H.K.: read and approved the manuscript for submission.

Author Disclosure Statement

No competing financial interests exist.

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