Original article

Retrospective review of antiretroviral therapy program data in accredited private hospitals in Addis Ababa City Administration, Ethiopia

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Abstract

Background: Ethiopia is committed to improving access to human immunodeficiency virus (HIV) care and antiretroviral therapy (ART) service. In May 2005, some private hospitals in Addis Ababa City Administration received accreditation to provide ART services to eligible patients.

Objective: To examine and describe the achievements of the ART Program in accredited private hospitals.

Methods: Descriptive retrospective analyses of reported ART Program Data from accredited private hospitals, between May 2005 and 31st December 2009. The aggregate data was obtained from Addis Ababa Regional Health Bureau and consisted of information about patients enrolled for care, those who started ART, and those presently are on ART.

Results: During the study period, 10,849 patients were enrolled for care, 9,442 who had just started ART and 5,608 already on it across the study private facilities. In general close to 75% of the total patients enrolled for care at five facilities. Although the majority (87%) had started treatment in the past, only 59.4% were currently on treatment. Overall, the program retained 66.4% of the patients (n=6,270) and attrition was 32% (n=3,021).

Conclusions: Differences in patient enrollment for care, ART initiation and retention were observed across facilities. A significant number of patients discontinued treatment and their outcome status was unclear. A better monitoring and reporting of ART Program Data will improve program quality. An effective strategy is needed to enhance patient retention and tracing in the accredited private hospitals in Addis Ababa City Administration. [*Ethiop J Health Dev.* 2011;25(2):110-115]

Introduction

Human immunodeficiency virus (HIV) infection is a global public health problem. By the end of 2008, 33.4 million people were infected with the virus worldwide (1). The majority (97%) of those infected were in low and middle-income countries, and 67% of these were in sub-Saharan Africa (2). In 2009, the prevalence of HIV in Ethiopia was 2.2% and 1.3 million people were living with HIV/AIDS (3).

Anti-retroviral therapy (ART) reduces HIV replication, infection of new cells, and improves the immune system function (4), quality of life and survival (5). The World Health Organisation (WHO) guidelines recommend that adults and adolescents start treatment at an early stage of the disease (1). By December 2009, about 14.6 million people in low and middle-income countries required ART, but only 36% (5.25 million) of them received treatment, and 3.91 million of those were in sub-Saharan Africa (1). In Ethiopia, an estimated 336,160 people required ART in 2009 (3).

The Ethiopian Government is committed to universal access to safe, comprehensive care and treatment by the end of 2010 (6). Following the implementation of the WHO public health approach in 2005, the number of facilities providing ART service and patients receiving treatment has increased (7). In 2005, the Government and partners started ART (8). The Government Policy on antiretroviral (ARV) drugs has also encouraged international initiatives on ARVs (9). Free ARV service was launched in January 2005 and public hospitals started providing free ARVs in March 2005 (10). By February 2010, the number of people who were ever enrolled, ever started and currently on treatment in the country had increased to 443,964, 246,347 and 179,183, respectively (11).

After 2005, HIV care and ART services were further decentralized in Ethiopia. Private hospitals (12) and health centers started delivering ART and HIV care in June 2006 (9,10). This was in line with several African countries that adopted the private and public health approach to scale up access to ART, provide care and treatment to HIV/AIDS patients (13). In the Addis Ababa Region, the public-private partnership commenced in 2005 and private hospitals were later accredited to provide ART services (14). To date, only one study has examined the quality of ART services in governmental hospitals in the Addis Ababa Region (15) and none in the accredited private hospitals. This study examined the accomplishment of ART programs in accredited private

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hospitals in Addis Ababa City Administration (AACA), including patient retention and attrition.

Methods

We did a retrospective analysis of reported ART Program Data from accredited private hospitals in AACA from 1st May 2005 to 31st December 2009. The aggregate data was obtained from the Addis Ababa Regional Health Bureau (AARHB) and contained names of accredited private hospitals, total patients enrolled for care, those who started ART, currently on ART and follow-up status. We did not attempt to establish how the study facilities compile data or report their ART Program Data to the AARHB. The study totally depended on data available at the AARHB. The pre-ART estimate refers to patients who were enrolled for HIV/AIDs care, but did not start treatment, and was calculated for each facility by subtracting those who started ART from those enrolled for care. The operational definitions of the outcome of patients on ART was categorized as: transferred out (patients transferred to other facilities and assumed retained); transferred in (transferred out from other facilities and accepted); lost (not seen for one month or more and to less than three months); dropped out (lost to follow up for three months or more); stopped (still receiving care, but stopped ART treatment); and dead. We defined patient retention as being currently on ART or transferred out to another facility, and attrition as died, lost, dropped out or stopped treatment. The ART Program Data were summarized using percentages, median and inter-quartile (25th–75th percentile) range [median (IQR)]. The Win PEPI software for Windows (V 2.17) was used for descriptive statistics (16).

Results

From 1st May 2005 to 31st December 2009, a total of 10,849 patients were enrolled for HIV/AIDS care, 9,442 started ART and 5,608 were currently on treatment at 16 accredited private hospitals in AACA (Table 1). The follow up status of 2,927 patients not currently on ART was also documented and reported (Table 2). At the time the ART Program Data was obtained from the AARHB, the MMD General and Nazrawi Hospitals had terminated their ART programs. The MMD General Hospital was sold and renamed St. Yared General Hospital. The outcome of HIV/AIDS patients enrolled at the MMD was unknown and their records were not transferred to the new St. Yared General Hospital.

Table 1: **Number and percent of patients ever enrolled for care, ever started ART and currently on ART treatment by accredited private hospital, Addis Ababa Region (May 2005-31st Dec 2009)**

Private hospital	Sub city	Ever enrolled for care	Ever started ART	Currently on ART	Pre-ART estimate‡
		n (%)	n (%)	n (%)	n (%)
Addis General	Addis ketema	1,332 (12.3)	873 (66)	371 (43)	459 (33)
Ethio-Tebib	Addis ketema	227 (2.1)	221 (97.4)	145 (66)	6 (0.4)
Girum	Addis ketema	23 (0.2)	17 (74)	23*	6 (0.4)
Zenbaba general	Akaki kality	1,581 (15)	1,470 (93)	822 (56)	111 (8)
Tibebu General	Arada	429 (4)	411 (96)	280 (68)	18 (1.3)
Nazrawi General**	Arada	4 (0.04)	3 (75)	3 (100)	1 (0.1)
St. Gebreal	Bole	773 (7)	737 (95.3)	362 (49)	36 (3)
MMD General*ƒ*	Bole	198 (2)	163 (82.3)	74 (45.4)	35 (3)
HAYAT	Bole	1,192 (11)	1,044 (88)	612 (59)	148 (11)
Myungsung Christian Medical Centre (MCM)	Bole	810 (8)	584 (72)	374 (64)	226 (16)
St.Yared General	Bole	22 (0.2)	20 (91)	17 (85)	2 (0.14)
Bethezatha general	Kirkose	2,788 (26)	2,558 (92)	1,712 (67)	230 (16.3)
Land Mark	Kirkose	25 (0.23)	24 (96)	23 (96)	1 (0.07)
Bethel	Kolfae	1,179 (11)	1,086 (92)	631 (58)	93 (7)
TZNA general	Ledeta	182 (2)	153 (84)	104 (68)	29 (2)
National	Yeka	84 (1)	78 (93)	55 (71)	6 (0.4)
Total		10,849 (100)	9,442 (87)	5,608 (59.4)	1,407 (100)

‡Enrolled for care but didn't start (ever enrolled minus ever started ART)
* Greater than the reported number of patient who ever started ART (n=17)
** Terminated ART program *ƒ* Sold and renamed St Yared General.

Table 2: Follow up status and characteristics of patients who attended ART program at accredited private hospitals in Addis Ababa Region (May 2005-31st Dec 2009)

Private hospital	Ever started ART but not currently on ART**	Follow up status of those not currently on ART		Currently on ART	Transferred out	Lost		Dropped out	Stopped treatment	Died	Retention*ƒƒ* n (%)	Attrition§ n (%)
		Reported	Not reported*ƒ*			Reported	Not reported*ƒ*					
Addis General	502	132	370	371	13	3	370	21	3	80	384 (44)	477 (55)
Ethio-Tebib	76	20	56	145	4	3	56	2	0	8	149 (67.4)	69 (31)
Girum	0	2*		23‡	0	1		0	0	1	23 (100)	2 (12)
Zenbaba	648	623	25	822	144	3	25	371	0	27	966 (66)	426 (29)
Tibebu General	131	222*		280	53	1		100	2	19	333 (81)	122 (30)
Nazrawi General	0#	0	0	3	0	0	0	0	0	0	3 (100)	0 (0)
St. Gebreal	375	337	38	362	75	0	38	211	5	32	437 (59)	286 (39)
MMD General	89	80	9	74	49	0	9	22	0	6	123 (76)	37 (23)
HAYAT	432	381	51	612	58	6	51	291	0	12	670 (64)	360 (35)
Myungsung Christian Medical Centre (MCM)	210	127	83	374	42	2	83	33	9	35	416 (71)	162 (28)
St.Yared General	3	5*		17	0	0		1	0	3	17 (85)	4 (20)
Bethezatha	846	508	338	1,712	160	16	338	233	3	36	1,872 (73)	626 (25)
Land Mark	1	0	1	23	0	0	1	0	0	0	23 (96)	1 (4)
Bethel	455	481*		631	62	0		369	0	14	693 (64)	383 (35)
TZNA	49	9	40	104	2	0	40	0	2	1	106 (69)	43 (28)
National	23	0	23	55	0	0	23	0	0	0	55 (71)	23 (30)
Total	3,840	2,927	1,034	5,608	662	35	1,034	1,654	24	274	6,270 (66.4)	3,021 (32)

** Estimated from Table 1 (ever started ART minus those currently on ART).
ƒ **N**ot reported but estimated and assumed lost
ƒƒ Sum of those currently on ART and transferred out to another facility.
§ Includes lost, dropped out, stopped treatment and died.
***** Number greater than those who started but not on ART.
‡ Reported 23 patients currently on ART incompatible with the reported number of patients ever started ART (n=17).
# Assumed '0' since the number of patients reported as being currently on ART was greater than those reported as ever started ART.

The median (IQR) number of patients enrolled for HIV/AIDS care at 16 private facilities during the study period was 328 (54.5-1,185.5). The lowest number of patient enrollment was at Nazrawi (n=4) and the highest at Bethezatha (n=2,788). Patient enrolments for care at five hospitals (Bethezatha, Bethel, Zenbaba, Hayat, Addis General) accounted for 74.5% of the total enrolments during the study period (Table 1).

The majority (87%, n=9,442) of patients who enrolled for care started ART treatment. Conversely, ART initiation varied across hospitals ranging from 66% in Addis General to 97.4% of patients in Ethio-Tebib Hospital. The median (IQR) number of patients who initiated ART was 316 (51-958.5). Collectively, patients commencing ART from four hospitals (Zenbaba, Bethezatha, Hayat, Bethel) accounted for 65.3% of the total who had started ART at all private facilities.

About 59.4% of patients (n=5,608) who ever started ART were currently on ART. However, this varied across hospitals ranging from 43% (Addis General) to 100% (Girum, Nazrawi). The median (IQR) number of patients currently on ART was 212 (39-493). Approximately, 67.4% of those patients were from four hospitals (Bethezatha, Zenbaba, Bethel, Hayat).

The pre-ART estimate for the private facilities is shown in Table 1. Generally, a total of 1,407 (13%) patients had contact with pre-ART care at the facilities. Although these patients have enrolled for care, they did not start ART treatment and may represent the pre-ART estimate at the study facilities during the study period. The median (IQR) number of patients who had contact with pre-ART care at private hospitals was 32 (6-130).

Among 9,442 patients who had started treatment, 3,834 (41%) were not currently on treatment (Table 2), and the follow up outcome status was documented and known only for 2,927 of the patients, but not for the remaining 907 patients. Conversely, our estimate showed the number of patients on ART and with unknown outcome status being 1,034 and not 907 as recorded in the data obtained from the AARHB. Thus, we assumed that 1,034 patients were lost and added them to the 35 patients officially reported as lost. As a result, the total number of patients lost was 1,069 and not 35. The total attrition from ART treatment in the facilities was therefore, estimated to be 32% during the study period. The causes of attrition were drop out (55%), lost (35.4%), death (9%), and stopping treatment (0.8%).

Of 2,927 patients with known follow up status, 1,654 (57%) were labeled as dropped out, 662 (23%) transferred out to another facility, 278 (10%) transferred in, 274 (9.4%) dead, 35 (1.2%) lost, and 24 (0.82%) stopped treatment. Collectively, 89.1% of the total drop outs were from Zenbaba, St Gebreal, Hayat, Bethezatha, and Bethel Hospitals. Likewise, patients' death from Addis General, St Gebreal, Myungsung Christian Medical Centre (MCM), Bethezatha and Zenbaba Hospitals accounted for 77% of the total deaths (data not shown).

Considering those who were currently on ART (n=5,608) and transferred out to another facility, (n=662), the private hospitals had retained 66.4% of their patients during the study period (Table 2). However, retention varied across hospitals, ranging from 100% (Girum, Nazrawi) to 44% (Addis General). The median (IQR) retention was 71% (65.1% - 83%). Hospitals like Bethezatha, Zenbaba, Bethel, and Hayat, which had enrolled several patients for ART, had retention below 74%, whereas hospitals with fewer than 25 patients enrolled for ART showed over 85% retention.

Discussion

This descriptive retrospective review of ART Program Data from 16 accredited private hospitals in AACA, found differences in the number of patients enrolled for care, those who started ART and currently on treatment across the facilities. Possible reasons for the difference could be that some of the hospitals are more accessible and have more resources to cope with more patients of the locality in need of ART.

The total pre-ART estimate for the study facilities was 13% (n=1,407) and those patients did not start treatment despite enrolling for pre-ART care. This may reflect that the pre-ART program in some facilities is not effective in retaining patients after they sign up for care. Hence, evaluation of the effectiveness of pre-ART program in these facilities is crucial.

The overall patient retention in ART program in accredited private hospitals was 66.4%. This is lower than the 75.1% national average retention (8), 67% in South Africa (17), 72% in Uganda (18) and 82% average retention rate across low and middle-income countries (1). Patient retention in ART programs in service delivery settings in sub-Saharan Africa showed retention of 86.1% at 6 months and 80.2% at 12 months (19). It is noteworthy that in this study, private hospitals with fewer patient enrolments showed better retention. There are two possible explanations for this: It is generally true that for hospitals enrolling relatively fewer patients, it is easier to follow-up or retain them than hospitals enrolling many patients. Possibly, those hospitals may also have effective strategy to retain and trace patients following enrolling for care. Patient retention in ART programs is not only a major problem in private hospitals in Addis Ababa, but also a serious concern in many countries of sub-Saharan Africa (13, 20-22). Hence, it is necessary to regularly review and improve the effectiveness of the strategies to retain and follow patients post enrolment.

Estimating patient attrition in the study facilities was not straightforward because of lack of accurate and complete data. After adjustments to the reported data, attrition from

treatment was estimated to be as 32%. Drop out and lost accounted for 55% and 35.4% of attrition, respectively. Although our attrition figure (32%) falls within the attrition range reported by the HIV/AIDS Prevention and Control Office (HAPCO) for the regions (18.1% for Harari and 36% Gambela), it was higher than the national average of 24.9% (8). A study in Jimma University specialized hospital showed a significant number of patients defaulted from ART treatment for several reasons including, loss of hope in medication, lack of food, mental illness, holy water treatment, and being unable to pay for transport (23).

High rate of attrition from ART programs may pose a serious challenge (20). To minimize attrition from ART care, the study facilities needed to follow up all patients methodically and accurately record their status after initiating treatment. In our analysis, we found patients who were unaccounted for and those whose follow up status was unclear. Those patients attended Addis General, Bethezatha, Hayat, Myungsung Christian Medical Centre (MCM), Ethio-Tebib, TZNA, or St Gebreal hospitals. We believe that those patients could have been traced and retained in the ART care if there were effective monitoring and follow-up procedures.

Our study had strengths and limitations. We used the available ART Program Data and no additional funding or resources to conduct the study. The study was the first to be done since accredited private hospitals started providing ART services in AACA. However, there were limitations to the study. First, it was a descriptive retrospective study based on publicly available aggregate ART Program Data routinely collected by the AARHB. We did not attempt to verify how the study facilities compiled and reported their ART Program Data. As a result, it was difficult to comment about data quality in the facilities. The private facilities might have also some data that is fairly well- documented, but did not report to the AARHB. Secondly, the study focused on process evaluation and not on impact evaluation of the ART program in the study facilities. The ART Program Data was not evaluated in relation to targets set for each private hospital. We also did not look into the study hospitals to check their data recording and if they had not reported some data to the AARHB. Our analysis did not examine the characteristics of ART patients because our selection and reporting of outcomes was dictated by the accessible data set obtained from the AARHB. Similarly, the estimated attrition and retention rates do not add up to 100 percent and reflects either poor data recording or reporting in some of the study facilities.

The ART service in accredited private hospitals is part of the 2003 national program and was introduced in 2005 to provide comprehensive care to eligible patients residing in AACA. We acknowledge that these facilities are playing a significant role in improving access and delivering ART to patients. To improve the quality of ART Program Data from accredited private hospitals to the AARHB, we think more in-depth study of the ART data in each facility is warranted to establish what data they are recording, reporting or not reporting to the AARHB. Our findings also indicate the need for better and periodic auditing of ART programs, including patient retention, data quality and reporting in these facilities. Likewise, this study raises other valid questions for further research: Why some facilities are enrolling more patients than others? What are the socio-demographic and clinical features of patients enrolled in the HIV care and treatment? Does the ART program at the private facilities have an impact on patient health outcome such as quality of life or mortality? What major factors (hospital or patient-related) are associated with different treatment outcomes? How can the gap between patients who started ART and currently on ART be narrowed in the study facilities?

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