

A national survey of prisoners on antiretroviral therapy in Malawi: access to treatment and outcomes on therapy

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Abstract

Background: Malawi is making good progress scaling up antiretroviral therapy (ART), but we do not know the levels of access of high-risk, disadvantaged groups such as prisoners. The aim of this study was to measure access and treatment outcomes of prisoners on ART at the national level.

Methodology: A retrospective cohort study was conducted examining patient follow-up records from all 103 public sector ART clinics in Malawi, and observations were censored on December 31, 2006.

Results: By December 31, 2006, a total of 81,821 patients had been started on ART. Of these, 103 (0.13%) were prisoners. At ART initiation, 93% of prisoners were in World Health Organization (WHO) clinical stage 3 or 4 while 7% started in stage 1 or 2 with a CD4-lymphocyte count of $\leq 250/\text{mm}^3$. Treatment outcomes by the end of December 2006 were as follows: 66 (64%) alive and on ART at their registration facility; 9 (9%) dead; 8 (8%) lost to follow-up; and 20 (19%) transferred out to another facility. The probability of being alive and on ART at 6 and 12 months was 82.5% and 77.7%.

Conclusions: In spite of the rapid scale-up of ART, only a small number of HIV-positive prisoners had accessed ART by the end of 2006. Treatment outcomes were good. Initiatives are now needed to improve access to HIV testing and ART in Malawi's prisons.

Key Words: Prisoners; antiretroviral therapy; access to treatment; treatment outcomes; Malawi.

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Introduction

Since the first reported case of AIDS in Malawi in 1985, this small, poverty-stricken country has experienced a rapid and massive epidemic. The total number of people infected with HIV is estimated to be between 780,000 and 1,120,000, which includes 69,000 to 100,000 children. There are 90,000 new infections and 86,000 AIDS deaths annually, and 170,000 patients are thought to require initiation of antiretroviral therapy (ART) [1]. Free ART was introduced in June 2004 and has since been scaled up to 103 public sector health facilities. Data on all ART patients are recorded using a standardised system for monitoring enrolment and treatment outcomes [2], and this includes information on occupational and demographic status. The system is rigorously supervised [3], and the data can be considered

nationally complete, offering the unique opportunity to examine access, retention in therapy, and survival for subgroups of the population.

Prisoners are a disadvantaged sector of the population and are therefore at high risk of HIV-related diseases, including tuberculosis [4,5]. The national ART program was initially concerned about issues of confidentiality, security, and drug adherence in prisoners. However, as confidence has grown with the provision of ART to HIV-infected communities, so too has the determination to ensure that all sectors of society have access to this life-saving medication. Informal initiatives have been started to encourage HIV testing of prisoners and facilitate assessment of HIV-infected prisoners for eligibility to ART. In the last 2 years, we have noticed from ART registers that prisoners are now

being registered for treatment. Using routinely collected data from Malawi's national M&E system for ART, we therefore conducted a national audit of all prisoners in the country on ART to determine access and outcomes while on therapy.

Materials and Methods

Background

The roll-out of free ART in Malawi started in June 2004 and coverage in all districts was achieved in 2005. The program has been described in detail elsewhere [2], and only the relevant features are summarised below.

A simple, standardised approach is followed: use of one generic, fixed dose combination treatment (stavudine, lamivudine, nevirapine); a standardised system of registration, monitoring, and reporting of cases and outcomes; and quarterly monitoring and supervision visits to all ART sites.

Patients are defined as eligible for ART if they have a positive HIV test and are in Clinical Stage 3 or 4 as described by the World Health Organization (WHO) or have a CD4-lymphocyte count < 250 cells/ μ l for adults and below the age-dependent threshold value for children [6,7]. Because of very limited laboratory capacity in the country, most patients have been started on ART based on clinical criteria only. Patients are seen at two weeks after ART initiation and then routinely every month for clinical assessment and ART-dispensing. Patients with drug adverse effects are referred to experienced specialised sites where alternative ART regimens can be initiated.

Malawi's national monitoring system for ART uses one patient master card for each patient and one ART register per facility [2].

At enrolment, patient demographics, occupational status, clinical stage, and stage defining conditions are recorded on the master card and copied into the register.

Follow-up details are entered in the master card, which include descriptions of each ART visit, and information regarding patient transfer to another ART clinic, treatment discontinuation, and death.

Deaths are usually ascertained by institutions or relatives informing the ART clinic staff that the patient has died, or through default tracing when ART clinic staff learned during visits to the home that the patient has died.

Patients who are not seen in the clinic for 3 months are classified as "defaulters". A patient cohort analysis is conducted at all sites every quarter. In preparation for this examination, clinic staff systematically review the follow-up status of all patients, updating the master cards and register with the latest outcomes.

The HIV Unit of the Ministry of Health and its partners conduct quarterly supervision and monitoring visits to all ART sites in the country. The supervisors check the accuracy, completeness, and consistency of the register and master cards. Cohort analyses are checked and collected for aggregation and national level reporting.

Data Collection and Analysis

The survey, which took place between January and March 2007, was conducted during supervision visits to all 103 public sector ART clinics. All ART clinic registers were screened for prisoners who had accessed ART up to December 31, 2006.

For all prisoners identified, the following data were transcribed onto a structured form: site-specific registration number; sex; date, age and WHO clinical stage at ART initiation; date and type of follow-up outcome. Deaths were mostly ascertained by prison officers who informed the ART clinic that the patient had died.

Data were checked, entered and cleaned in MS Access and analysed using STATA 9.2. Observations were censored if patients were alive and on ART by 31, December 2006. The probability of survival on ART was estimated using the Kaplan-Meier method. Adverse treatment outcomes (death, loss to follow-up, ART discontinuation) were regarded as "failure events", while transfers to other ART clinics were regarded as "censoring" events.

Ethical approval

Data collected for this study did not include personal identifiers. The Malawi National Health Science Research Committee provides general oversight and approval for the collection and use of routine programmatic data for monitoring and evaluation. This survey was considered as programme evaluation by the U.S. Centres for Disease Control and Prevention, which is not classified as human-subjects research.

Results

General national patient cohort

By December 31, 2006, a total of 81,821 patients had accessed ART at 103 public sector ART facilities in Malawi. Of these, 50,162 (61.3%) were female and 76,058 (93.0%) were aged 15 years or above. Of patients starting ART, 9,833 (12%) patients had accessed ART in WHO clinical stage 1 or 2 with a CD4 count $\leq 250/mm^3$, and 71,988 (88%) in stage 3 or 4. By the end of December 2006, there were 57,356 (70%) patients were alive and on ART; 9,327 (11%) were dead; 7,753 (9%) were lost to follow-up; 365 (~1%) had stopped therapy; and 7,020 (9%) had transferred out. The routine quarterly cohort analyses showed that 74% of 10,608 patients and 61% of 7,871 patients were alive and on ART at 6 and 12 months after enrolment, respectively.

National prisoners cohort

Information on occupational status was available for 78,950 (96.5%) patients in the national public sector cohort. In total, 103 prisoners (0.13%) (95 men and 8 women) were registered for ART in the country. The mean age at ART initiation was 33 (range 19 to 55) years. Of the 103 public sector ART clinics in Malawi, 17 had treated any prisoners and 3 clinics had registered more than 10: Zomba Central Hospital, situated close to the main prison of the country, had registered 33 prisoners; Lighthouse clinic in the capital city, Lilongwe, had registered 16, and rural Chikwawa District Hospital had registered 11 prisoners. Figure 1 shows the number of ART clinics and the number of prisoners on ART by calendar period.

The reasons for starting ART were documented in 102 cases: 7 (7%) started in WHO clinical stage 1 or 2 with a CD4 count $\leq 250/ul$, and 95 (93%) in stage 3 or stage 4.

The median observation time for the whole prisoner cohort was 4.2 months (range 0.1 to 23.8 months), and the entire cohort had accumulated 50.3 years of observation. Treatment outcomes in prisoners by the end of December 2006 were as follows: 66 (64%) alive and on ART at their registration facility; 9 (9%) dead; 8 (8%) lost to follow-up; and 20 (19%) transferred out to another facility. No prisoner was known to have stopped treatment. The probability of being alive and on

ART at 6 and 12 months was 82.5% and 77.7% (see Figure 2).

Figure 1. Number of prisoners alive and on ART at the end of the respective quarter and the cumulative number of facilities that started to provide ART in Malawi: 2003 – 2006.

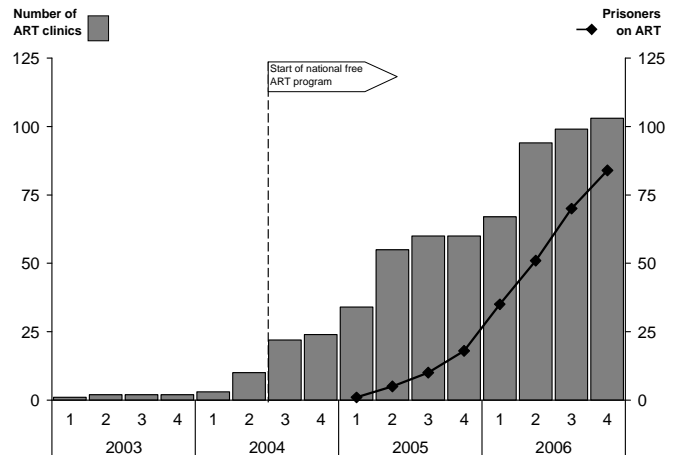
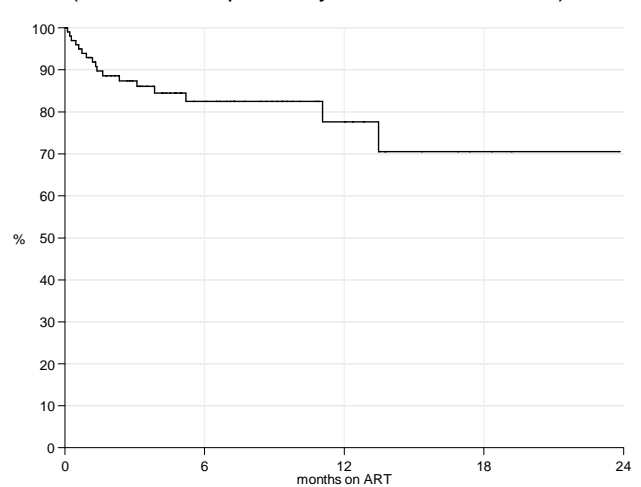


Figure 2. Kaplan-Meier estimates for retention of prisoners in ART-program (n=103; 50.3 person-years of observation)



Discussion

We believe that this is the first national survey in Sub-Saharan Africa of prisoners on ART examining access and outcomes on treatment. By the end of 2006, a total of 103 prisoners had enrolled at 17 of the 103 public sector ART clinics in Malawi. Prisoners on ART differed from the general population on ART on several counts as follows: there were more males; fewer prisoners started on ART due to being in Stage 1 or 2 with a low CD4 count; and there were more prisoners

with a transfer-out outcome. These findings are not surprising. The majority of prisoners in Malawi are male. Due to their confinement they have limited access to CD4 counting facilities, and when prisoners are discharged from prison they are likely to move away to another part of the country. High transfer-out rates were also found in a national audit of prisoners treated for tuberculosis over a three-year period [8].

There are 22 prisons in Malawi, and each year there are about 25,000 to 35,000 convicts and prisoners on remand pass through the prison system [8]. No recent data about the prevalence of HIV infection or AIDS amongst Malawian prisoners are available. Previous surveys in Zomba Central Prison, the largest prison in the country, indicated a large burden of AIDS and tuberculosis [4]. Amongst prisoners in Zomba Central Prison with tuberculosis or with a cough of unknown cause, about 75% were HIV-seropositive [5]. It is likely that several thousand prisoners require ART because they are suffering from advanced stages of HIV-disease. In spite of the extensive scale-up of free ART services in the country, only a small proportion of this disadvantaged group has thus far gained access to therapy. It is important to identify these patients, as HIV-infected patients assessed in WHO Clinical Stage 3 or 4 have a very poor prognosis in Malawi without specific HIV/AIDS treatment [9].

This operational study, based on data from the routine national monitoring system, has some limitations. Due to the recent rapid expansion of ART services in Malawi and the slow access of prisoners, the average observation time of the national cohort of prisoners is still relatively short, and longer term outcomes could not be reliably assessed. Deaths may also be under-reported, as many patients who are registered as “defaulter” have in fact died [10]. Among the strengths of the study is the fact that all facilities in the public sector providing ART in Malawi were included. Occupational status was known for 96% of all patients nationally. Provided that recording was accurate, the study gives near-complete information on all prisoners who have accessed treatment in the country. Routine validation of data is carried out during quarterly supervision of all sites, and this should result in relatively high data quality.

What is the way forward? Special initiatives have been launched in the two large urban prisons in Zomba and Lilongwe, offering counselling and HIV testing within the prisons on two to three days per week. Between April and May 2007, there were 278 prisoners in Maula Prison in Lilongwe who accessed HIV testing and counselling, 71 (26%) of whom were HIV-positive. Since April 2007, the Lighthouse clinic in Lilongwe has started integration of HIV-services at Maula prison. HIV-infected prisoners are taken to the Lighthouse clinic once per week for staging, assessment for ART eligibility, and treatment initiation. After three months of initial management at Lighthouse, ART follow-up is provided at Maula Prison by a prison medical officer who has been trained and certified in ART according to national standards [2]. Directly observed therapy and monitoring of treatment are conducted by the prison medical officer. This system needs to be assessed in due course, but such pro-active approaches should help to improve access of prisoners to HIV services and the provision of life-saving therapy for those who need it.

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