ABSTRACT 1072

Facility-level factors influencing retention of patients in HIV care in East Africa

B Rachlis[1,2], G Bakoyannis[3], P Easterbrook[4], RS Braithwaite[5], CR Cohen[6], E Bukusi[7], A Kambugu[4], MB Bwana[8], EH Geng[6], P Braitstein[1,2,3]

[1]Academic Model Providing Access to Healthcare (AMPATH), Eldoret Kenya [2] Dalla Lana School of Public Health, University of Toronto [3]Indiana University, Indianapolis, USA [4]Infectious Diseases Institute, Kampala, Uganda [5]New York University, New York, USA [6] University of California, San Francisco, San Francisco, USA [7]UKenya Medical Research Institute, Nairobi, Kenya [8]Mbarara University, Mbarara, Uganda

BACKGROUND

- Retention in HIV care is critical for viral suppression and decreased HIV transmission among people living with HIV;
- Losses to follow-up remain an important programmatic challenge in many low and middle-income settings;
- Further study is needed to identify interventions that could be adopted at the facility or program level to improve retention along the cascade of care.

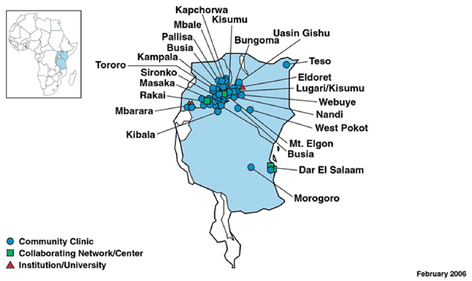
OBJECTIVES

- To identify facility-level factors associated with Losses to Follow-up from care both before and after antiretroviral therapy (ART) initiation.

METHODS

Setting:

- Data from 29 clinics associated with the East Africa- International epidemiological Databases to Evaluate AIDS were included:
  –Kenya, n=23; Tanzania, n=3 and Uganda, n=3.



Patient Population:

- Adults (≥18 years);
- Enrolled in a clinic associated with EA-IeDEA between May 2000 and May 2009;
- At least 6 months of follow-up before database closure;
- Excluded pregnant women at time of pregnancy.

Definitions:

Patients were defined as *lost to follow-up (LTFU)* if there was no documentation of patient death or transfer AND they had no visit within:

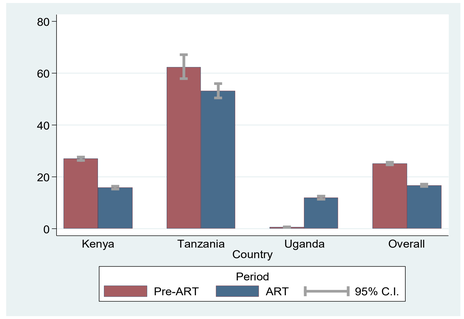
- 12 months of the study endpoint for pre-ART patients;
- 6 months of the study endpoint for ART patients.

Analysis

- LTFU rates were stratified by county and program and by ART status (pre-ART versus ART).
- The cause-specific LTFU hazard was based on a semi-parametric proportional hazards model with a gamma-distributed shared frailty by program to account for correlations between patients in the same program
  - Pre- and post-ART periods were analyzed seperately;
  - Models were adjusted for patient-level factors: gender, age at enrolment, WHO stage, calender year and education level.
- Death (both analyses) and ART initiation (pre-ART analysis) were considered as competing events to LTFU.

RESULTS

- 88,152 patients
- 63.9% female
  - Median age at enrolment: 36 years (IQR 30.1-43.1) years
  - 58.3% had initiated ART during follow-up (Median time on ART: 11.9 months)
  - Median CD4 at ART initiation 109 (IQR: 43-181) cells/μL
- Overall rates of LTFU were 25.1 (95% CI: 24.7-25.6) in the pre-ART period and 16.7 (95% CI: 16.3-17.2) after ART initation



- Facility factors associted with LTFU in pre- and post-ART care are presented in Table 1.

Table 1: Facility-level factors associated with LTFU in pre- and post-ART periods

	N facilities clinics (%)	Pre-ART (n=58, 727)		ART (n=35,041)	
		HR	95% CI	HR	95% CI
Level of Care					
Primary	**10 (34.5)**	**1**		**1**	
Secondary	**13 (44.8)**	**0.811**	**0.747-0.880****	**0.77**	**0.722-0.822****
Tertiary	**6 (20.7)**	**0.928**	**0.791-1.089**	**1.375**	**1.156-1.636****
Having a wait list for initiating ART at facility					
Yes	**7 (24.1)**	**1**		**1**	
No	**22 (75.9)**	**0.993**	**0.700-1.409**	**0.848**	**0.518-1.388**
Vitamins (including zinc) provided					
Yes	**9 (31.0)**	**-**	**-**	**0.441**	**0.286-0.680****
No	**20 (69.0)**	**-**	**-**	**1**	
Nutritional treatment provided					
Yes	**23 (79.3)**	**0.618**	**0.438-0.872***	**1.125**	**0.635-1.995**
No	**6 (20.7)**	**1**		**1**	
TB diagnosed and treated by clinicians within the ART program					
Yes, at ART initiation and regularly after	**19 (65.5)**	**1**		**1**	
No, symptomatic patients are referred to the TB clinic	**10 (34.5)**	**0.909**	**0.829-0.997***	**0.881**	**0.763-1.016**
HIV RNA PCR turnaround time					
≤ 14 days	**9 (31.0)**	**1**		**1**	
>14 days	**17 (58.6)**	**1.136**	**1.071-1.204****	**1.303**	**1.205-1.409****
Unknown/missing	**3 (10.3)**	**1.468**	**1.104-1.952***	**1.315**	**0.787-2.197**
CD4 count availability					
On site	**9 (31.0)**	**1**		**1**	
Off site	**20 (69.0)**	**1.213**	**1.111-1.326****	**1.226**	**1.088-1.383***
Open in mornings					
≤ 4 mornings	**11 (37.9)**	**-**	**-**	**1**	
> 4 mornings	**18 (62.1)**	**-**	**-**	**0.734**	**0.608-0.885***

Adjusted for male gender, age at enrolment, WHO stage (at enrolment or ART initiation), calendar year (at enrolment or at ART initiation) and education level;
*p<0.05, **p<0.001

DISCUSSION

- Higher rates of LTFU observed in pre-ART versus post-ART period;
- Various facility factors were associated with LTFU in both periods including level of care of the facility, services provided and availability and turnaround time of labs;
- Our findings have implications for the development and implementation of facility-based strategies that work to improve retention in care including point-of-care CD4 testing and more flexible clinic hours;
- Timely and consistent engagement in care is critical for improving the proportion intiating ART and becoming virally suppressed.