

High rates of Retention and Viral suppression in the Scale-up of Antiretroviral therapy Adherence Clubs in Cape Town, South Africa

Priscilla Tsondai¹, Lynne Wilkinson^{1,2}, Anna Grimsrud³, Precious Mdlalo¹, Angelica Trivino¹, Andrew Boule^{1,4}

(1) School of Public Health and Family Medicine, University Of Cape Town, South Africa. (2) Médecins Sans Frontières, Khayelitsha, Cape Town, South Africa. (3) International AIDS Society, Cape Town, South Africa. (4) Department of Health, Provincial Government of the Western Cape, Cape Town, South Africa.

Background

- The adherence club (AC) model of care has been successfully piloted and shown to be an effective means of antiretroviral therapy (ART) delivery to stable patients (on ART for ≥6 months, suppressed viral load) on lifelong ART
- Groups of approximately 25-30 patients, stable on ART meet 5 times a year for peer support, brief symptom screening and ART supply
- Patients meet a clinician for a consult and viral load (VL) monitoring 4 months after enrolment then annually
- Patients with an elevated VL, with symptoms suggestive of ill health or who may require more regular follow up are referred back to the clinic
- In the Cape Town metropolitan district, ACs have been rolled out across the entire district since 2011. By the end of March 2016, over 45 000 patients were receiving ART within an AC
- We describe patient outcomes of a representative sample of AC patients in the scale-up, followed to December 2014

Methods

- Retrospective cohort analysis of patients enrolled in an AC at non-research supported sites in Cape Town between 2011 and 2014
- Approximately 10% of ACs (n=100) were sampled in quintets proportional to the number of ACs at each facility
- AC registers were digitised and patient clinic folders were reviewed for all patients who defaulted from an AC or were referred back to the clinic
- All patients were linked to city-wide laboratory and service access data to validate retention and virologic outcomes
- Using Cross-sectional and Kaplan-Meier methods, we estimated the outcomes: lost to follow up (LTFU), transfer out (TFO), death and VL assessment and suppression (≤400 copies/mL)
- Competing risks cumulative incidence estimates were calculated for each outcome
- LTFU was defined as no AC or clinic contact in the 6 months following analysis closure (January – June 2015)

Results

Patient characteristics

- A total of 3216 patients were included in the analysis, contributing 4019 person years of follow up (89% in an AC, median 1.1 years; interquartile range (IQR), 0.7-1.6) (Table 1)
- At AC enrolment: median age 36.3 years (IQR, 31.4-41.7), median duration on ART 2.3 years (IQR, 1.5-3.6)
- ~71% of the patients were female and the majority joined an AC in the years 2013 and 2014

Table 1: Description of patient characteristics at adherence club enrolment

Characteristic	N = 3216
Age (years), n (%)	3033 (94.3)
16 – 24	114 (3.8)
25 – 34	1202 (39.6)
35 – 44	1235 (40.7)
≥ 45	482 (15.9)
median (IQR)	36.3 (31.4 – 41.7)
Sex, n (%)	3028 (94.2)
female	2143 (70.8)
male	885 (29.2)
Duration on ART (years), n (%)	1388 (43.2)
< 2	592 (42.7)
2 – 4	607 (43.7)
≥ 5	189 (13.6)
median (IQR)	2.3 (1.5 – 3.6)
Year of AC enrolment, n (%)	3216 (100)
2011	113 (3.5)
2012	478 (14.9)
2013	1226 (38.1)
2014	1399 (43.5)

Viral suppression

- At all time points, VL completion was at least 80% (Table 2)
- Viral suppression was 97% (95% CI 96-98) at 4 months, 96% (95% CI 95-97) at 16 months and 94% (95% CI 92-96) at 28 months after AC enrolment

Table 2: Description of routine viral loads

Months of follow up	4	16	28
Patients followed (N)	3216	1846	615
Viral loads done (n)	2782	1563	490
Completion (%)	87	85	80
Results (copies/mL), n (%)			
≤ 400	2697 (97)	1496 (96)	461 (94)
401 – 1000	24 (1)	11 (1)	4 (1)
> 1000	61 (2)	56 (3)	25 (5)

Outcomes

- Over the study period 4 (0.1%) patients died, 82 (2.6%) TFO and 135 (4.2%) were LTFU
- Before linkage, 280 (8.7%) were classified as LTFU of which 145 of them (52%) were found to still be in care after linkage
- Retention was 95.1% (95%CI 94.2-95.9) at 12 months, 89.7% (95% CI 87.9-91.2) at 24 months and 83.2 (95% CI 79.6-86.3) at 36 months after AC enrolment
- The combined cumulative incidence of mortality, TFO and LTFU was 4.7% 12 months after AC enrolment (Figure 1 and Table 3)
- 498 (16.6%) of all patients had received facility based care after enrolling into an AC

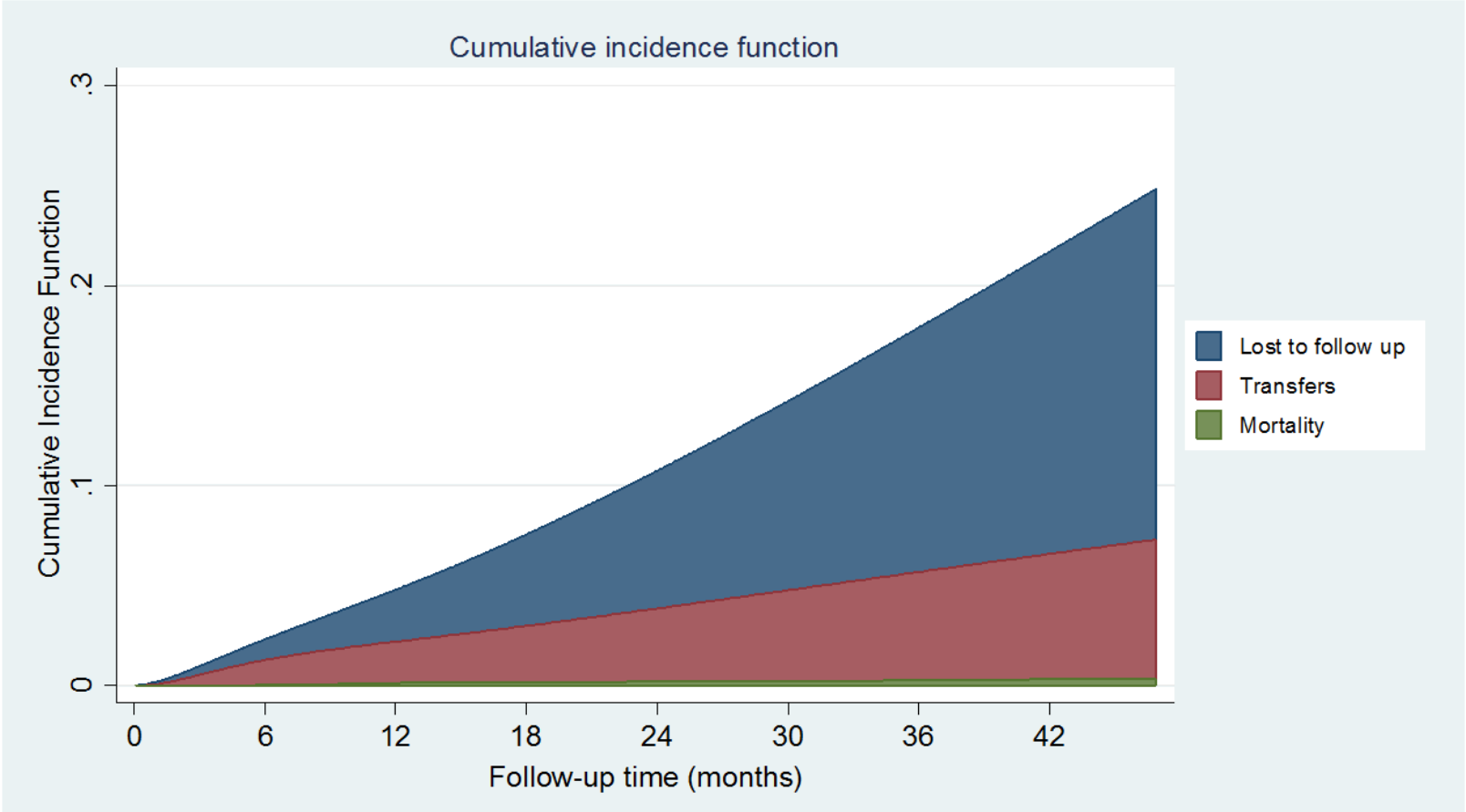


Figure 1: Stacked cumulative incidence of mortality, transfers and lost to follow up

Table 3: Cumulative incidence for mortality, transfers and lost to follow up

Months of follow up	12	24	36
Patients followed	1736	540	97
Mortality, %	0.1	0.2	0.3
(95% CI)	(-0.01 – 0.2)	(-0.01 – 0.4)	(-0.08 – 0.6)
Transfers,%	2.1	3.7	5.4
(95% CI)	(1.6 – 2.6)	(2.8 – 4.5)	(3.9 – 7.0)
Lost to follow up, %	2.6	6.9	12.2
(95% CI)	(2.1 – 3.2)	(5.7 – 8.1)	(9.7 – 14.7)

Discussion

- This is the first analysis reporting patient outcomes after a differentiated care model was scaled up across a high burden district
- These findings provide substantial reassurance that this model supports good patient outcomes at scale
- Good outcomes expected as this model of care was made available to stable patients
- Linkage enabled us to differentiate determine true LTFU

Acknowledgements: The authors would like to acknowledge the Provincial Government of the Western Cape and the City of Cape Town staff, particularly the Clubs Steering Committee. This research was funded by the Bill and Melinda Gates Foundation.