Increased Linkage to HIV Care after Clinic vs. Community Testing in Rural Mozambique

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BACKGROUND

- Different HIV testing strategies tailored to specific settings will be necessary to reach the global target of 90-90-90.
- Client or provider -initiated and home-based HIV counseling and testing (VCT, PICT and HBT, respectively) are all complementary testing modalities to be considered when selecting appropriate local interventions.
- HIV testing modalities may lead to differences in subsequent linkage to care throughout the cascade. This is a crucial metric and yet there is little data on linkage indicators across testing modalities.

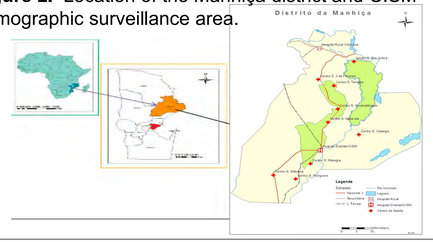
OBJECTIVE

We aimed to compare the linkage rates between VCT, PICT and HBT in Southern Mozambique

METHODS

- Design: Prospective cohort of new adult HIV diagnoses through VCT, PICT and HBT from 2014- 2015
- Setting: Semi-rural area in Southern Mozambique served by the Manhiça District Hospital (MDH)
- HIV testing: according to national recommendations using rapid serology testing
- Data Collection: Passive follow-up information obtained through the MDH electronic HIV patient tracking and demographic surveillance system.
- Loss to Follow up (LTF) at each step of the care cascade was defined within 3 months of testing.
- Cox regression with competing risks for death and migration was used to estimate the impact of testing modality on each step of the care cascade after HIV diagnosis (Table 2 & Fig 3)

Figure 1. Location of the Manhiça district and CISM demographic surveillance area.



RESULTS

Figure 2. Study Profile

Recruitment of study participants at the health facility (VCT and PICT) and community (HBT)

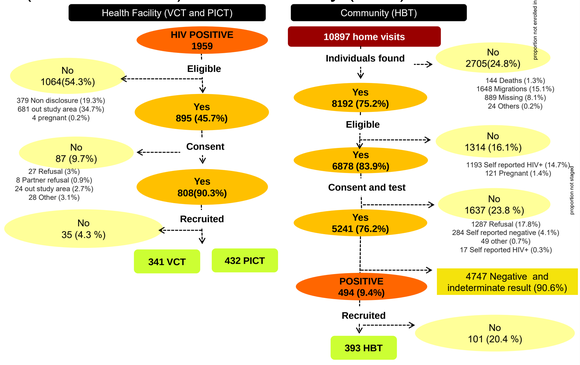


Table 1. Baseline characteristics according to testing modalitiy.

Variable (N, %)		Testing modality HBT (N=393)	VCT (N=341)	PICT (N=432)	p-value
Age (mean, SD)		38.4 (13.4)	34.8 (12.5)	34.4 (11.9)	< 0.001 [1]
Age category	15- 24	62 (16%)	79 (23%)	100 (23%)	<0.001 [2]
	25- 34	120 (31%)	128 (38%)	165 (38%)	
	35- 44	105 (27%)	73 (21%)	90 (21%)	
	≥45-	106 (27%)	61 (18%)	77 (18%)	
Gender	Masculino	176 (45%)	133 (39%)	201 (47%)	0.098 [2]
	Feminino	217 (55%)	208 (61%)	231 (53%)	
Marital status*	Married	180 (57%)	66 (46%)	93 (52%)	< 0.027 [2]
	Divorced	95 (30%)	55 (39%)	47 (26%)	
	Single	43 (13%)	22 (15%)	39 (22%)	
Previous HIV test	< 1 year ago	96 (24%)	60 (18%)	45 (10%)	< 0.001 [2]
	> 1 year ago	88 (22%)	88 (26%)	142 (33%)	
	Unknown	209 (53%)	193 (57%)	245 (57%)	
Knowledge of HIV	Yes	317 (81%)	317 (93%)	408 (94%)	< 0.001 [3]
	No	74 (19%)	22 (6%)	19 (4%)	
	Unknown	2 (1%)	2 (1%)	5 (1%)	
Type of testing	Individual	362 (92%)	280 (82%)	411 (95%)	< 0.001 [2]
	Family testing	31 (8%)	61 (18%)	21 (5%)	
Work absenteeism	Yes	33 (8%)	25 (7%)	14 (3%)	0.009 [3]
	No	358 (91%)	314 (92%)	413 (96%)	
	Unknown	2 (1%)	2 (1%)	5 (1%)	
Has cell phone	Yes	272(69%)	272 (80%)	308 (71%)	
	No	121 (31%)	69 (20%)	124(29)	0.003 [2]

HBT Participants were

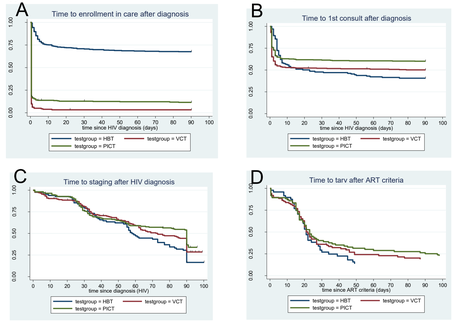
- significantly older than those in VCT or PICT;
- more likely to have an HIV test in the previous year;
- referred less knowledge regarding HIV;
- fewer had a cell phone and
- more likely to be married.

1. ANOVA; 2. chi-squared; 3 Fisher´s exact test
* N=640

Cox regression analysis for linkage in each step of the cascade.

Loss to Follow up (LTF) at each step of the care cascade was defined within 3 months of testing. Only the variables included in the model are shown

Fig 3: Survival curves for steps in cascade according to testing modality.



A. After diagnosis,

- HBT testers were less likely to enroll in care (aSHR 0.18 (95%CI 0.15; 0.21) p<0.0001.
- Older patients and those having a cell phone were more likely to enroll.

B. Once enrolled,

- HBT testers were more likely to have complete staging (aSHR 1.32 (1.01; 1.74) p=0.01)
- as were those having a previous HIV test

Table 2A. Factors associated with 1st consultation after enrolling in care.

Variable		N (%) * (total=865)	SHR	Univariate (95% Conf. Interval)	p-value	aSHR**	Multivariate (95% Conf. Interval)	p-value
Age category	15- 24	74 (41%)	1			1		
	25- 34	141 (45%)	1.17	(0.90; 1.52)	0.193	1.29	(0.98; 1.69)	0.088
	35- 44	90 (47%)	1.20	(0.90; 1.60)		1.29	(0.96; 1.75)	
	≥45-	94 (52%)	1.37	(1.03; 1.81)		1.48	(1.09; 2.00)	
Gender	Masculino	160 (43%)	1		0.086	1		0.065
	Feminino	239 (49%)	1.198	(0.98; 1.42)		1.20	(0.99; 1.45)	
Previous HIV test	< 1 year ago	67 (55%)	1.14	(0.89; 1.45)	0.001	1.19	(0.93; 1.54)	0.001
	> 1 year ago	91 (37%)	0.69	(0.55; 0.86)		0.71	(0.57; 0.89)	
	Unknown	241 (49%)	1			1		
Has cell phone	Yes	319 (49%)	1		0.01	1		0.007
	No	80 (38%)	0.73	(0.58; 0.93)		0.72	(0.57; 0.92)	
Testing modality	HBT	76 (58%)	0.99	(0.79; 1.24)	0.004	0.93	(0.73; 1.18)	0.0708
	VCT	166 (49%)	1			1		
	PICT	157 (40%)	0.73	(0.59; 0.90)		0.78	(0.63; 0.97)	

* N: number of patients with fisrt consultation. (399) **aSHR: adjusted subdistribution hazard ratio

Among participants enrolled in care, factors associated with having a 1st consult in the first 3 months:

- having a previous HIV test in the last year
- having a cell phone

PICT was associated with less linkage to 1st consult (Fig 2B)

Table 2B. Factors associated with initiation of ART for those eligible.

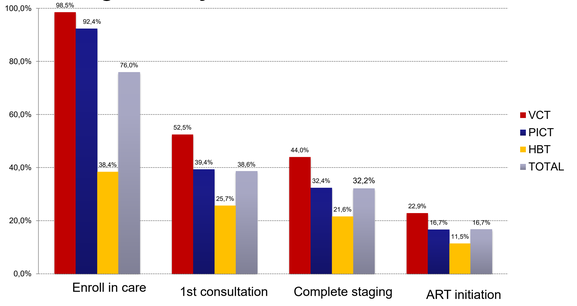
Variable		N (%)* (total=257)	SHR	Univariate (95% Conf. Interval)	p-value	aSHR**	Multivariate (95% Conf. Interval)	p-value
Age category	15- 24	32 (89%)	1					
	25- 34	74 (83%)	0.86	(0.58; 1.29)	0.7742			
	35- 44	57 (84%)	0.96	(0.63; 1.47)				
	≥45-	54 (84%)	0.84	(0.55; 1.26)				
Gender	Masculino	86 (80%)	1		0.1236			
	Feminino	131 (68%)	1.23	(0.94; 1.61)				
Previous HIV test	< 1 year ago	31 (86%)	1.32	(0.90; 1.95)	0.0372	1.29	(0.89; 1.88)	0.042
	> 1 year ago	52 (93%)	1.46	(1.07; 1.99)		1.46	(1.07; 1.98)	
	Unknown	134 (81%)	1			1		
Has cell phone	Yes	176 (87%)	1		0.0465	1		0.0575
	No	41 (75%)	0.71	(0.51; 0.99)		0.72	(0.51; 1.01)	
Testing modality	HBT	48 (87%)	1.07	(0.76; 1.51)	0.4335			
	VCT	89 (86%)	1					
	PICT	80 (81%)	10.86	(0.64; 1.16)				

* N: number of patients initiating ART (217) **aSHR: adjusted subdistribution hazard ratio

Among participants eligible for ART, factors associated with initiating ART within 3 months

- Having a previous HIV test at any time.

Figure 4. Outcomes in the initial steps of the HIV care cascade for all new HIV diagnoses according to testing modality.



Although 85% of those participants eligible for ART initiated treatment in the first 3 months post diagnosis, the overall rate of ART treatment was very low (<20%)

CONCLUSION

- HBT testers were more likely not to enroll in care as compared to VCT and PICT, but once enrolled, their health seeking was similar to other testing modalities.
- Additional measures to ensure linkage to care after testing are crucial in HBT testing campaigns.
- Regardless of testing modality, there is a considerable block in the cascade of care before the 1st clinic visit leading to very low rates of ART initiation.

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The findings and conclusions in this report are those of the author(s) and do not necessarily represent the official position of the CDC