Early attrition in HIV care in South Africa: implications for test and treat

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Background

- Linkage to care is essential for the overall HIV response
- Attrition (loss from care) undermines efforts to improve linkage and retention in HIV care
- Improved linkage and retention to HIV care leads to:
  - Better survival
  - Reduced morbidity
  - Decreased transmission
- High quality routine data provide an opportunity to monitor critical outcomes
- This is a secondary analysis of data from Pre-ART surveillance led by Howard University
- The analysis assessed the extent and predictors of early attrition among newly diagnosed HIV positive patients in SA

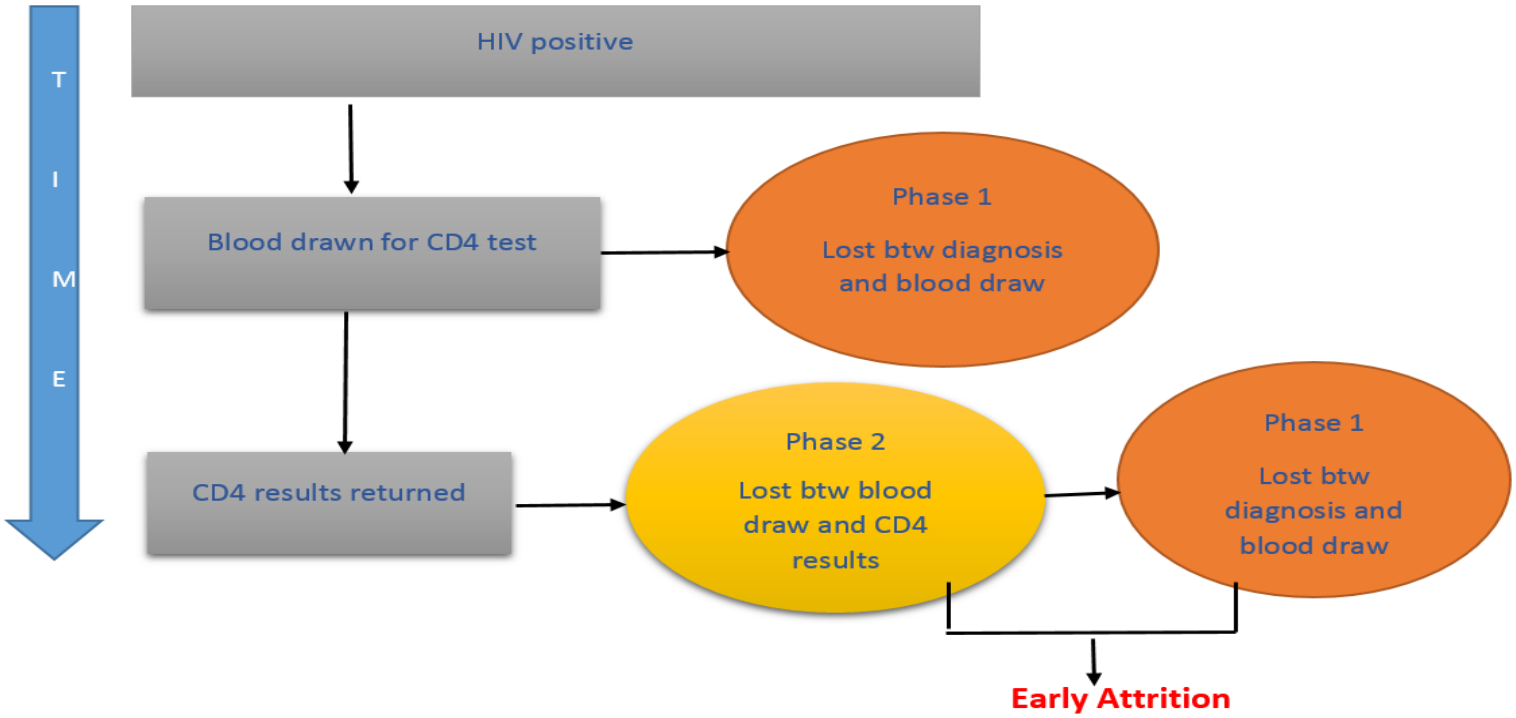
Methods – Population and setting

- All PLHIV 15 years of age and above diagnosed from Jan – Mar 2015 and followed until Dec 2015
- 34 purposively selected PHC facilities
- Three high burden districts (City of Johannesburg, uThukela, Gert Sibande)
- Record review of programmatic data

Statistical Methods - I

Outcome variable

- **Early attrition** – Never returned for CD4 results after HIV diagnosis
  - ❖Phase 1 - Between diagnosis and blood draw for CD4 count
  - ❖Phase 2 - Between blood draw and returning for CD4 results



Statistical Methods - II

Potential predictors

- Age, gender, facility location, WHO staging, TB co-infection, district

Logistic regression

- To determine predictors of early attrition

Results – study population

- A total of N=3,744 HIV infected patients were enrolled
- Aged between 15 and 84 years
- Majority were females (68%) and from Gert Sibande district (42%)

Characteristics of study population by gender

Characteristic at diagnosis	Male		Female		P-value
N(%)	1194 (31.89)		2550 (68.11)		
Median age (IQR)	34 (28 – 41)		28 (23 – 35)		
	n	%	n	%	
Age category					<0.001
<20	23	1.93	188	7.37	
20-29	339	28.39	1233	48.35	
30-39	476	39.87	724	28.39	
40_49	257	21.52	279	10.94	
>=50	99	8.29	126	4.96	
TB co-infection	53	4.44	29	1.14	<0.001
CD4 value					<0.001
<200	358	43.50	435	24.53	
200-349	211	25.64	478	26.96	
350-499	144	17.50	434	24.48	
>500	110	13.37	426	24.03	
WHO staging					<0.001
I	324	51.59	1043	73.76	
II	177	28.18	266	18.81	
III	116	18.47	97	6.86	
IV	11	1.75	8	0.57	
ART eligibility at diagnosis (CD4≤500, Tb, pregnancy)					<0.001
Yes	738	61.81	1639	64.27	
District					0.229
Gert Sibande	523	43.80	1042	40.86	
City of Johannesburg	341	28.56	775	30.39	
Uthukela	330	27.64	733	28.75	

- Men were :
  - Older – median age (34 vs 28)
  - Presented late (43 % vs 24%)
- Women were:
  - Clinically healthier (73% vs 51 %)

Results – Early attrition

- There was 28% early attrition recorded
  - 21% (n=788) lost between diagnosis and blood draw
  - 7% (n=277) lost between blood draw and receipt of CD4 results
- Early attrition was more likely in males

Early attrition by demographic characteristics

Characteristic	Diagnosed N	PHASE 1 n (%)	Providing blood samples for CD4 tests	PHASE 2 n (%)	Early Attrition (Phase 1 + Phase 2) N(%)
All	3744	788 (21.05)	2956	277 (7.40)	1065 (28.45)
Gender					
Female	2550	518 (20.31)	2032	173(6.78)	691 (27.10)
Male	1,194	270(22.61)	924	104 (8.71)	374 (31.32)
Age					
<20	211	48 (22.75)	163	14 (6.64)	62(29.38)
20-29	1572	356 (22.65)	1216	118(7.51)	474 (30.15)
30-39	1200	230 (19.17)	970	95(7.92)	325 (27.08)
40_49	536	108 (20.15)	428	36(6.72)	144 (26.87)
>=50	225	46 (20.44)	179	14 (6.22)	60 (26.67)
District					
Gert Sibande	1565	430 (27.48)	1135	151 (9.65)	581 (37.12)
City of Johannesburg	1116	171 (15.32)	945	105 (9.41)	276 (24.73)
Uthukela	1063	187(17.59)	876	21 (1.98)	208 (19.57)
Facility location					
Rural	519	116 (22.35)	403	20 (3.85)	136 (26.20)
Urban Inner City	176	74 (42.05)	102	22 (12.50)	96 (54.55)
Urban Suburb	549	81 (14.75)	468	66 (12.02)	147 (26.78)
Urban Township	2500	517 (20.68)	1983	169 (6.76)	686 (27.44)

- Majority lost between diagnosis and blood draw
- Attrition higher in males than females (31% Vs 27%)
- Gert Sibande recorded highest proportion of early attrition (37%)
- In Urban inner cities half of the patients were lost

Predictors of early attrition in care

Factor	N	Early attrition n	Bivariate OR (95% CI)	Multivariate AOR (95% CI)
Gender				
Female (ref)	2550	691	-	-
Male	1194	374	1.23 (1.06 – 1.43)	1.26 (1.02– 1.54)
Age category				
<20 (ref)	211	62	-	-
20-29	1572	474	1.04 (0.76 – 1.42)	1.43 (0.95 – 2.17)
30-39	1200	325	0.89 (0.65 – 1.23)	1.15 (0.75 – 1.78)
40_49	536	144	0.88 (0.62 – 1.26)	0.98 (0.62 – 1.56)
>=50	225	60	0.87 (0.58 – 1.33)	1.04 (0.60 – 1.79)
Facility location				
Urban Township (ref)	2500	686		
Rural	519	136	0.94 (0.76 – 1.16)	1.79 (1.19 – 2.69)
Urban Inner City	176	96	3.17 (2.33 – 4.32)	3.77 (2.48 – 5.72)
Urban Suburb	549	147	0.97 (0.79 – 1.19)	1.04 (0.76 – 1.41)
District				
City of Johannesburg (ref)	1116	276	-	-
Gert Sibande	1565	581	1.80 (1.52 – 2.13)	3.63 (2.82 – 4.67)
Uthukela	1063	208	0.74 (0.60 – 0.91)	0.89 (0.61 – 1.30)
WHO staging				
Stage I (ref)	1367	35	-	-
Stage II	443	22	1.99 (1.15 – 3.43)	2.02 (1.16 – 3.48)
Stage III	213	3	0.54 (0.17 – 1.78)	0.45 (0.14 – 1.48)

- Model was adjusted for age and other factors
- Attrition was positively associated with:
  - Male gender
  - Urban inner city and rural vs urban township
  - Gert Sibande vs City of Johannesburg

Limitations

- Representativeness of the sample
- Quality of routine data

Conclusion

- Early attrition was high in SA in 2015
- Encourage strategies that reduce early attrition particularly among men attending facilities in rural and urban inner cities
- Efforts that encourage treatment soon after diagnosis would be beneficial for the SA program

Implications for practice and research

- Universal Test and treat may be beneficial in dealing with attrition (In Sept 2016)
- Continue strengthening strategies to improve entry into care
  - Targeting places where men congregate e.g taxi ranks, VMMC centers
  - Use of community collaborators e.g navigators and champions
  - Phone calls
- Inner cities may be prone to mobility which is a threat to efforts to improve linkage
- More research is needed to identify additional factors associated with attrition

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Disclaimer

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Thank you

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