BURDEN OF HIV AMONG MEN ATTENDING EMERGENCY DEPARTMENTS IN SOUTH AFRICA

Authors: George Mwinnyaa[1], Elizabeth Hahn[1], Aditi Rao[1], Steven J. Reynolds[2], Andrew D. Redd[3], Reinaldo E. Fernandez[4], Jernelle Miller[4], Morgan P. Keruly[3], Roshen Maharaj[5], Pamela Mda[5], David Stead[5], John Black[5] Thomas C. Quinn[2], Oliver Laeyendecker[2], Bhakti Hansoti[4]

1) Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD, USA 2) NIAID, Baltimore, MD, USA 3) NIAID, Bethesda, MD, USA 4) Johns Hopkins University School of Medicine, Baltimore, Maryland, USA, 5) Walter Sisulu University, Mthatha, South Africa

Poster 0860
George Mwinnyaa
Johns Hopkins University
855 North Wolfe St. Room 527
Baltimore, MD
gmwinny1@jhu.edu

Background

- Men are less likely to get tested for HIV and, when positive, less likely to initiate treatment or adhere to treatment.[1-3]
- We sought to identify factors associated with HIV infection, HIV diagnoses, and lack of treatment among men attending emergency departments (ED) in the Eastern Cape province, South Africa.

Methods

- All patients attending one of the three EDs during the study period aged ≥18 years were eligible for enrollment.
- Trained HIV counselors approached and offered point of care HIV counselling and testing to consenting patients.
- Known and newly diagnosed HIV positive patients were asked to provide blood samples for additional testing.
- Blood samples were tested for quantification of viral load and presence of anti-retroviral drugs. Viral load and presence of anti-retroviral drug testing was done using the Abbott Real Time m2000sp-rt platform (limit of detection of 640 copies/mL) and HPLC-High Resolution Accurate Mass (HRAM) mass spectrometry, respectively.
- A secondary data analysis of the male subset of patients enrolled was conducted for this study.
- Log-binomial models were used to characterize engagement of men in HIV services and the HIV care cascade.
- We also examined factors associated with HIV prevalence among this population.

Results

- During the study period 1,458 non-critical male patients were enrolled and the overall prevalence of HIV was 21%.
- Of the patients positive for HIV, 41% of HIV were unaware of their infection prior to the study.
- Of the HIV positive individuals who received further testing, only 47% tested positive for the presence of ART drugs.
- 43% of all HIV positive patients were virally suppressed (viral load <1000 copies/ml).
- HIV prevalence increased with age and peaks at 35% for participants aged 36-45 years.
- Generalized weakness, symptoms of tuberculosis, and being admitted were associated with higher HIV prevalence.
- Men diagnosed with HIV were more likely to be younger (>50% were less than 35 years of age).
- Of the HIV positive patients less than 35 years of age, <30% tested positive for the presence of ART drugs.

- Overall, 21% (302/1458) of males tested positive for HIV, of which 41% (124/302) were unaware of their status.
- Of the HIV positive males that underwent further testing:
  - 47% (104/222) tested positive for the presence of ARVs.
  - 43% (101/236) were virally suppressed (defined as viral load < 1000 copies/ml).
- None of the 19 HIV positive males <25 years of age tested positive for the presence of ARVs.

Table 1: Characteristics of all participants by testing site

	LH: N = 864	MRH: N = 539	NMAH: N = 375	Total: N = 1,778
Age				
<20	37 (4)	22 (4)	26 (7)	85 (5)
20-25	137 (16)	90 (17)	106 (28)	333 (19)
25-35	276 (32)	171 (32)	111 (30)	558 (31)
35-45	182 (21)	84 (16)	47 (13)	313 (18)
45-55	136 (16)	53 (10)	58 (15)	216 (12)
>55	96 (11)	119 (22)	58 (15)	273 (15)
Presenting Compliant				
Medical	322 (32)	331 (61)	159 (42)	812 (46)
Trauma	542 (63)	208 (39)	216 (58)	966 (54)
Time of presentation				
Routine hours	311 (36)	232 (43)	138 (37)	681 (38)
Out of hours	553 (64)	307 (57)	237 (63)	1,097 (62)
SATS†				
Emergency	17 (2)	0 (0)	0 (0)	17 (1)
Very Urgent	52 (6)	141 (26)	87 (23)	280 (16)
Urgent	420 (49)	379 (70)	266 (71)	1,065 (60)
Routine	375 (43)	19 (4)	22 (6)	416 (23)
Disposition				
Death	0 (0)	2 (0)	0 (0)	2 (0)
Admission	76 (9)	117 (22)	177 (47)	370 (21)
Emergent Surgery	1 (0)	1 (0)	52 (14)	54 (3)
ICU Admission	0 (0)	0 (0)	0 (0)	0 (0)
Transfer	141 (16)	27 (5)	36 (10)	204 (11)
Discharge	590 (68)	347 (64)	99 (26)	1,036 (58)
Absconded	53 (6)	0 (0)	3 (1)	56 (3)
Unassigned	3 (0)	45 (8)	8 (2)	56 (3)
Consent to POC Testing				
Declined (Known Positive)	67 (8)	60 (11)	34 (9)	161 (9)
Declined (Unknown Status)	184 (21)	60 (11)	76 (20)	320 (18)
Accepted test	613 (71)	419 (78)	265 (71)	1,297 (73)
HIV Status				
Known HIV	73 (8)	65 (12)	40 (11)	178 (10)
HIV Negative	565 (65)	353 (65)	238 (63)	1,156 (7)
Newly Diagnosed HIV	42 (5)	61 (11)	21 (6)	124 (7)
Unknown‡	184 (21)	60 (11)	76 (20)	320 (18)
HIV Prevalence	17%	26%	20%	21%

Table 2: Characteristics of participants with a determined HIV status across all sites

	Known HIV positive (n = 124) (9%)	Newly HIV Diagnosed (n = 178) (12%)	HIV Negative (n = 1,156) (79%)	Total (n = 1,458) (100%)	p-value
Age					
<20	1 (1)	2 (3)	64 (96)	67	
20-25	4 (1)	16 (6)	249 (93)	269	
25-35	51 (11)	57 (13)	341 (76)	449	< 0.001
35-45	61 (24)	29 (11)	168 (74)	258	
45-55	40 (22)	8 (4)	138 (74)	186	
>55	21 (9)	12 (5)	196 (86)	229	
Presenting Compliant					
Medical	126 (18)	76 (11)	492 (71)	694	<0.001
Trauma	52 (7)	48 (6)	664 (87)	764	
Time of presentation					
Routine hours	72 (13)	52 (9)	432 (78)	556	0.484
Out of hours	106 (12)	72 (8)	724 (80)	902	
SATS*					
Emergency	2 (18)	1 (9)	8 (73)	11	
Very Urgent	36 (15)	26 (11)	174 (74)	236	<0.001
Urgent	116 (13)	85 (10)	683 (77)	884	
Routine	24 (7)	12 (4)	291 (89)	327	
Disposition					
Death	2 (100)	0 (0)	0 (0)	2	
Admission	56 (18)	28 (9)	225 (73)	309	
Emergent Surgery	4 (9)	5 (11)	37 (80)	46	
ICU Admission	0 (0)	0 (0)	0 (0)	0	< 0.001
Transfer	22 (14)	15 (9)	122 (77)	159	
Discharge	83 (10)	65 (8)	697 (82)	845	
Absconded	2 (5)	2 (5)	38 (90)	42	
Unassigned	9 (16)	9 (16)	37 (67)	55	

Footnotes Table 1
† South African Triage Score (SATS)
‡ Unknown status is defined as those who were not known to be HIV positive, and refused to enroll in the study and undergo POC testing
*The number of patients with a documented test (N) was used as the denominator when calculating the proportion with a positive or negative result (n).
Footnotes Table 2
*The number of patients with a documented test (N) was used as the denominator when calculating the proportion with a positive or negative result (n).

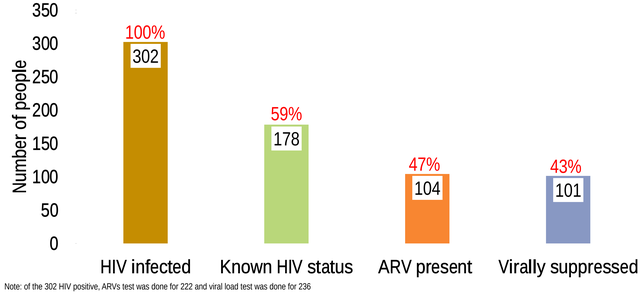
Summary & Conclusions

- There is a high burden of HIV among men visiting EDs in the Eastern Cape province, with almost half unaware of their HIV status.
- The ED is a critical venue to identify HIV infected men not on treatment.
- HIV service providers, program implementers, and policy makers should consider leveraging the ED as a venue to provide HIV services to young men in order to meet the 90-90-90 target, particularly in South Africa.

References

1. Mills, E. J., Beyrer, C., Birungi, J., & Dybul, M. R. (2012). Engaging men in prevention and care for HIV/AIDS in Africa. PLoS medicine, 9(2).
2. Snow, R. C., Madalane, M., & Poulsen, M. (2010). Are men testing? Sex differentials in HIV testing in Mpumalanga Province, South Africa. AIDS care, 22(9), 1060-1065.
3. Venkatesh, K. K., Madiba, P., De Bruyn, G., Lurie, M. N., Coates, T. J., & Gray, G. E. (2011). Who gets tested for HIV in a South African urban township? Implications for test and treat and gender-based prevention interventions. Journal of acquired immune deficiency syndromes (1999), 56(2), 151.

Figure 1. HIV care cascade among males attending EDs in Eastern Cape Region, South Africa



Note: of the 302 HIV positive, ARVs test was done for 222 and viral load test was done for 236

Figure 2. ARV and viral suppression status by age

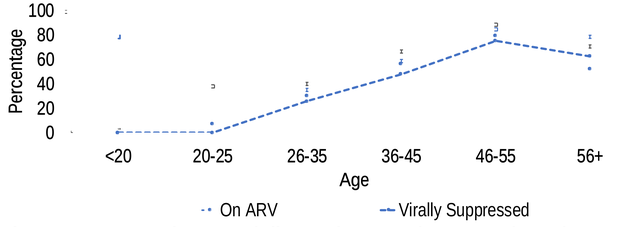


Figure 3. HIV prevalence and diagnosis status by age and gender

