Population-based estimates of engagement in the continuum of HIV care in western Kenya: from HIV testing to retention

Becky Genberg¹, Violet Naanyu²,³, Juddy Wachira²,³, Monicah Nyambura³, Edwin Sang³, Joseph Hogan¹,³, Paula Braitstein²,³,⁴,⁵,⁶

¹ Brown University, Providence, RI, USA
² Moi University, College of Health Sciences, School of Medicine, Eldoret, Kenya
³ AMPATH (Academic Model Providing Access to Healthcare), Eldoret, Kenya
⁴ Indiana University School of Medicine, Indianapolis, IN, USA
⁵ University of Toronto, Dalla Lana School of Public Health, Toronto, Canada
⁶ Regenstrief Institute, Indianapolis, IN, USA
Introduction

- Importance of find, link, treat and retain for individual and population outcomes.
- There are few estimates of engagement in the early phases of the continuum of HIV care from community-based samples in sub-Saharan Africa.
Introduction

Rosen & Fox, PLoS 2011
Objective

• The objective of this study was to report engagement in and linkage to HIV care among all those diagnosed with HIV in one sub-county in Kenya served by AMPATH (Academic Model Providing Access to Healthcare).
  – Focused on health care, research and education, AMPATH is a partnership between Moi University and Moi Teaching and Referral Hospital in Eldoret, Kenya, and a consortium of North American institutions.
Methods: Study setting

- Data from home-based counseling and testing (HBCT) in one high prevalence catchment from December 2009 through January 2012
- All households were visited and assessed for eligibility
Methods: Study population

- 3,788 HIV-positive individuals were identified
  - Study 1: Cross-sectional sample of individuals already known to be HIV-positive (by self-report)
  - Study 2: Cohort of all those newly testing positive, followed from diagnosis at the time of HBCT to linkage to care

- Data from HBCT was merged with AMPATH medical records to determine outcomes through April 2013
Methods: Outcomes

• **Study 1:**
  - Enrollment in care (self-report)
  - Among those reporting AMPATH as a provider, medical records data included:
    • Initial encounter with a clinician
    • Treatment eligibility (receipt of CD4 testing)
    • Initiation of ART
    • Lost-to-follow-up (no visit within 3 months of scheduled return date)
    • Mortality

• **Study 2:**
  - AMPATH medical records data
    • Time to linkage (defined as an initial encounter with a clinician)
    
Among those who linked to care:
  • Treatment eligibility (receipt of CD4 testing)
  • Initiation of ART (among those eligible at enrollment)
Methods: Statistical analysis

• Study 1: Logistic regression analysis was used to examine socio-demographic factors associated with engagement in care at the time of HBCT.
  – Stratified models @ 13 years of age

• Study 2: Survival analysis and Cox regression were used to examine time to linkage to care among those newly diagnosed at the time of HBCT.
Results: Study 1

- Identified as HIV +
  - N=3788

- Study 1: Known HIV +
  - n=2353
  - Engaged in care within AMPATH: 84%
  - Engaged in care outside of AMPATH: 8%
  - Not engaged: 8%

- Study 2: Newly diagnosed
  - n=1435

62% of Study 1 and 38% of Study 2 are engaged in care.

Engaged in care outside of AMPATH: 8%
Engaged in care within AMPATH: 84%
Not engaged: 8%
Results: Study 1

• Among the 2,353 with known HIV-infection at the time of HBCT:

  66% female  
  Mean age = 35 years  
  55% married  
  21% unemployed  
  47% with primary school education
Results: Study 1

Engaged in care within AMPATH
n=1969

Received CD4 testing
94%

CD4 at enrollment

CD4>350
49%

CD4>350
49%

CD4<350
51%

CD4<350
51%

Initiated ART
84%

Did not initiate ART
16%

Did not initiate ART
2%

Did not initiate ART
2%

Initiated ART
98%

Lost
6%

Lost
29%

Lost
68%

Lost
5%

Died
2%

Died
2%

Died
16%

Died
4%

Among the 1969 known HIV+ engaged in care, 89% had initiated ART as of April 2013
9% were lost to follow up
3% died
Results: Study 1

Among those known to be HIV-positive at the time of HBCT (≥13 years of age):

- Males (OR=0.67, 95% CI: 0.47-0.95) compared with females, and
- Those 13-25 years (OR=0.33, 95% CI: 0.27-0.39) compared with those >25 years

were less likely to have engaged in care.
Results: Study 2

Identified as HIV +
N=3788

Study 1: Known HIV +
n=2353
- Engaged in care outside of AMPATH 8%
- Engaged in care within AMPATH 84%
- Not engaged 8%

Study 2: Newly diagnosed
n=1435
- Did not link 87%
- Linked to care within AMPATH 13%
Results: Study 2

- Among the 1,435 newly diagnosed at the time of HBCT:
  - 63% female
  - Mean age = 32 years
  - 60% married
  - 18% unemployed
  - 56% with primary school education
Results: Study 2

- 13% linked to care following HBCT (as of April 2013)
  - Median time to linkage = 20 days (IQR: 6-149)
    - 70% of those who linked did so within 90 days of HBCT
  - 96% received CD4 testing
    - Median CD4 = 439 cells/mm³
    - Median time to CD4 testing after linkage = 0 days
Results: Study 2

• Among those newly diagnosed with HIV at the time of HBCT (n=1435):

Those >25 years (HR=1.85, 95% CI: 1.20, 2.85) were more likely to link to care, compared with those 13-25 years.
Results: Study 1 and 2

- Among the 170 known HIV-positive who had not engaged with care at the time of HCT, 13% linked to care following HCT (as of April 2013)

- Overall engagement estimate: 57%

Identified as HIV +
N=3788

Study 1: Known HIV +
n=2353

Engaged in care
outside of AMPATH
8%

Engaged in care within
AMPATH
84%

Not engaged
8%

Linked after HCT
13%
Did not link
87%

Study 2: Newly diagnosed
n=1435

Linked to care within AMPATH
13%

From overall N=3788, 43% (n=1631) were not engaged in care as of April 2013
Discussion

- Engagement in care among those with known HIV was high, but linkage to care among those newly diagnosed during HBCT was low.
- Many estimates of patient losses further along in the HIV care continuum may be underestimates since they exclude those who do not link following testing.
- Additional efforts are needed to engage men and young adults in care in western Kenya.
Limitations

- May be misclassification in outcome due to data merge process.
- Engagement in care outside of AMPATH is not captured (aside from self-report at the time of HBCT)
- Migration, transfer and mortality may explain some of the losses occurring following testing
Thank you

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