TasP

Antiretroviral Treatment as Prevention • ANRS 12249
Ukuphila kwami, ukuphila kwethu (my health for our health)

Entry into care following universal home-based HIV testing in rural KwaZulu-Natal, South Africa

The ANRS TasP 12249 cluster-randomised trial

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8th IAS conference, Vancouver, 2015

Background and objectives

Benefits of early linkage to HIV care and ART initiation (1)

- **… for ensuring the best health outcomes in HIV-infected individuals**
  - ↘ HIV-related morbidity and mortality *(Temprano trial: Danel et al, CROI 2015; START trial: NIH press release, May 2015)*

Benefits of early linkage to HIV care and ART initiation (2)

- **… for ensuring the best health outcomes in HIV-infected individuals**
  - ↘ HIV-related morbidity and mortality *(Temprano trial: Danel et al, CROI 2015; START trial: NIH press release, May 2015)*

- **… for preventing HIV transmission to uninfected individuals**
  - At individual level (*HPTN 052 trial: Cohen et al, NEJM 2011*)
  - At populational level *(Tanser et al, Science 2013)*

Towards the "Universal Test and Treat" strategy: the 90-90-90 UNAIDS target (1)

(UNAIDS, 2014)

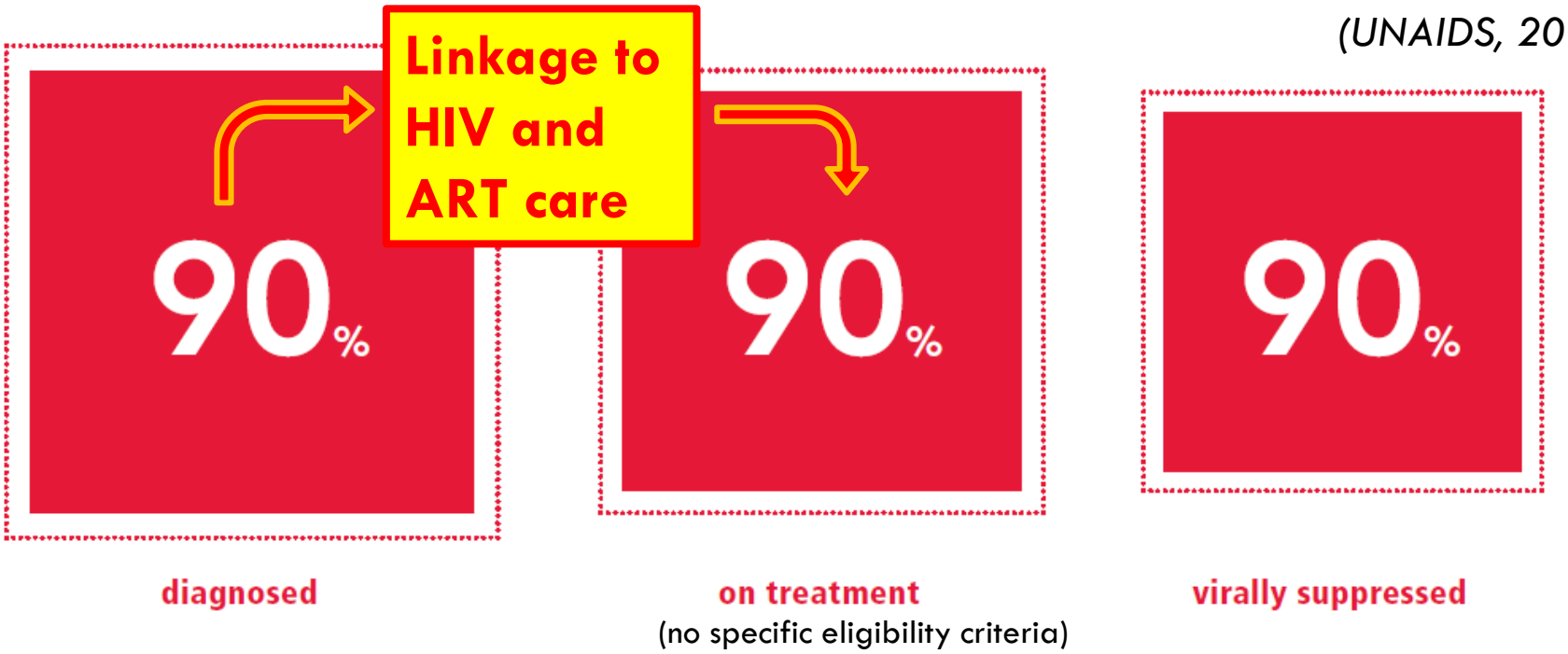
diagnosed

on treatment
(no specific eligibility criteria)

virally suppressed

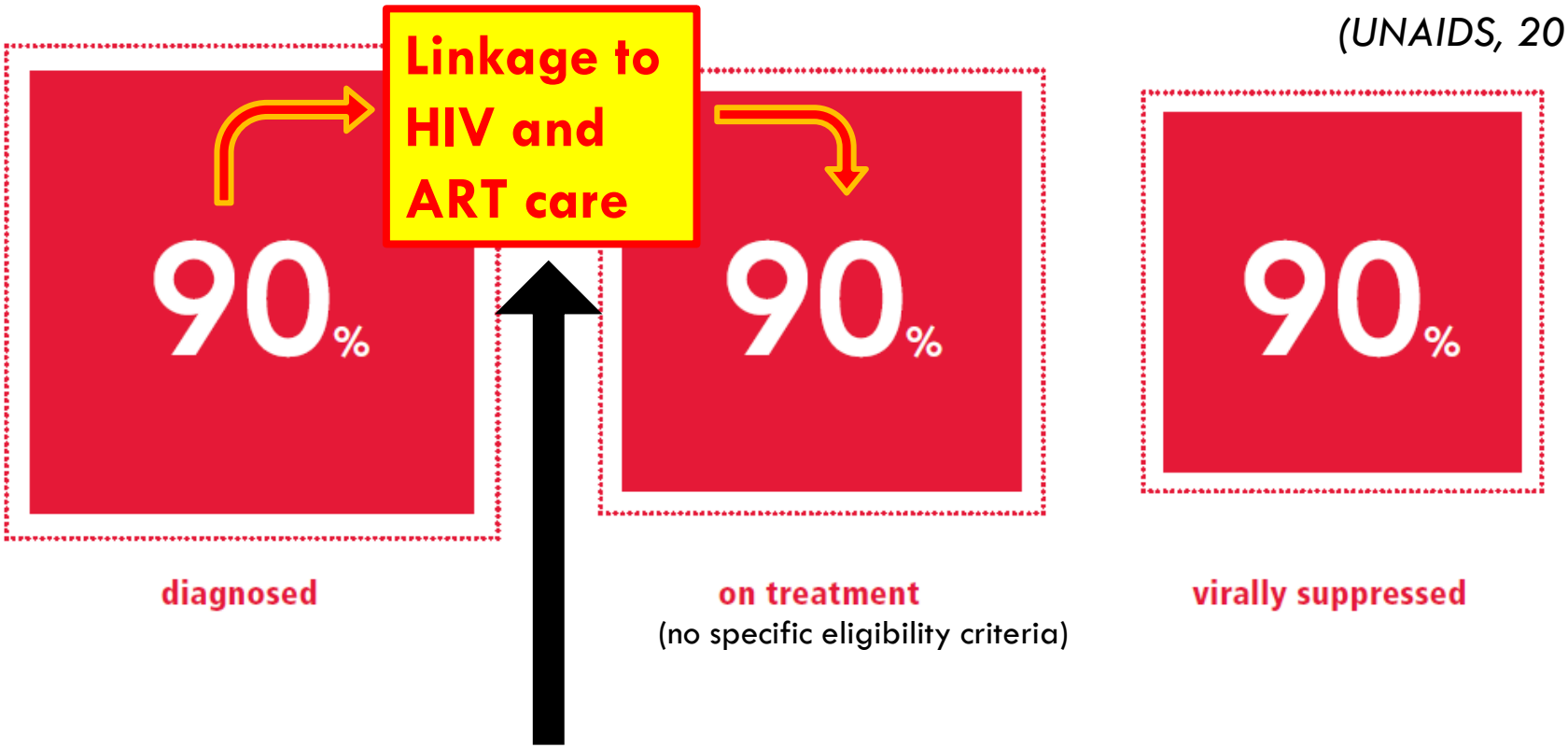
Towards the "Universal Test and Treat" strategy: the 90-90-90 UNAIDS target (2)

(UNAIDS, 2014)



Towards the "Universal Test and Treat" strategy: the 90-90-90 UNAIDS target (3)

(UNAIDS, 2014)



Many individuals lost-to-follow-up between HIV diagnosis and linkage to HIV and ART care *(Mugglin et al, Trop Med Int Health 2012; Rosen et al, PLoS Med 2011)*

Early linkage to care after home-based HIV counselling and testing (HBHCT) (1)

- **HBHCT:** strategy evaluated as **acceptable and effective** for increasing HIV testing coverage in regions of high HIV prevalence

Early linkage to care after home-based HIV counselling and testing (HBHCT) (2)

- **HBHCT:** strategy evaluated as **acceptable and effective** for increasing HIV testing coverage in regions of high HIV prevalence

- **BUT are people properly linked to care after being diagnosed HIV-positive through HBHCT?**
  - Limited data available
  - Large differences of rates of linkage to care within three months of referral in South African studies *(Genberg, Lancet HIV 2015; J Int AIDS Soc, Naik et al, 2015; Van Rooyen et al, J Acquir Immune Defic Syndr 2013)*

Objectives

- To describe the rate of linkage to HIV care within three months of referral following HBHCT in a rural area with high HIV prevalence

- To explore the factors associated with linkage to HIV care

Methods

The ANRS 12249 TasP trial (1)

- Cluster randomized trial (2011-2016) evaluating the feasibility, acceptability and efficacy of immediate ART on HIV incidence in rural KwaZulu-Natal, South Africa

Iwuji et al, Trials 2013

Orne-Gliemann et al, BMC Publ H 2015

IAS 2015: Iwuji et al (abstract n° MOAC0104)

The ANRS 12249 TasP trial (2)

Home-based HIV-testing (6 monthly rounds)

Trial area population: 22000 individuals

Referral to TasP clinic <u>if identified HIV+</u>

TasP clinics (1/cluster)

<u>11 Intervention clusters</u>: Treat all HIV+ individuals regardless of CD4 count /clinical stage

<u>11 Control clusters</u>: Treat all HIV+ individuals according to South African guidelines

The ANRS 12249 TasP trial (3)

Home-based HIV-testing (6 monthly rounds)

Trial area population: 22000 individuals

Referral to TasP clinic <u>if identified HIV+</u>

TasP clinics (1/cluster)

<u>11 Intervention clusters</u>: Treat all HIV+ individuals regardless of CD4 count /clinical stage

<u>11 Control clusters</u>: Treat all HIV+ individuals according to South African guidelines

DoH clinics

Treat all HIV+ individuals according to South African guidelines

Study population (2x5 clusters)

- **Individuals ≥16 years old**
  - identified HIV+ during HBHCT and referred to a TasP clinic from March 2012 and June 2014
  - not actively in care at referral (= no visit to the local HIV programme within the past 13 months)

- **Exclusion criteria**
  - Inconsistent dates (death, out-migration or clinic visit)
  - Period of observation <3 months if no linkage to care
  - Death or out-migration before linkage to a TasP or local HIV programme clinic within three months of referral
  - Incomplete data

Statistical analysis

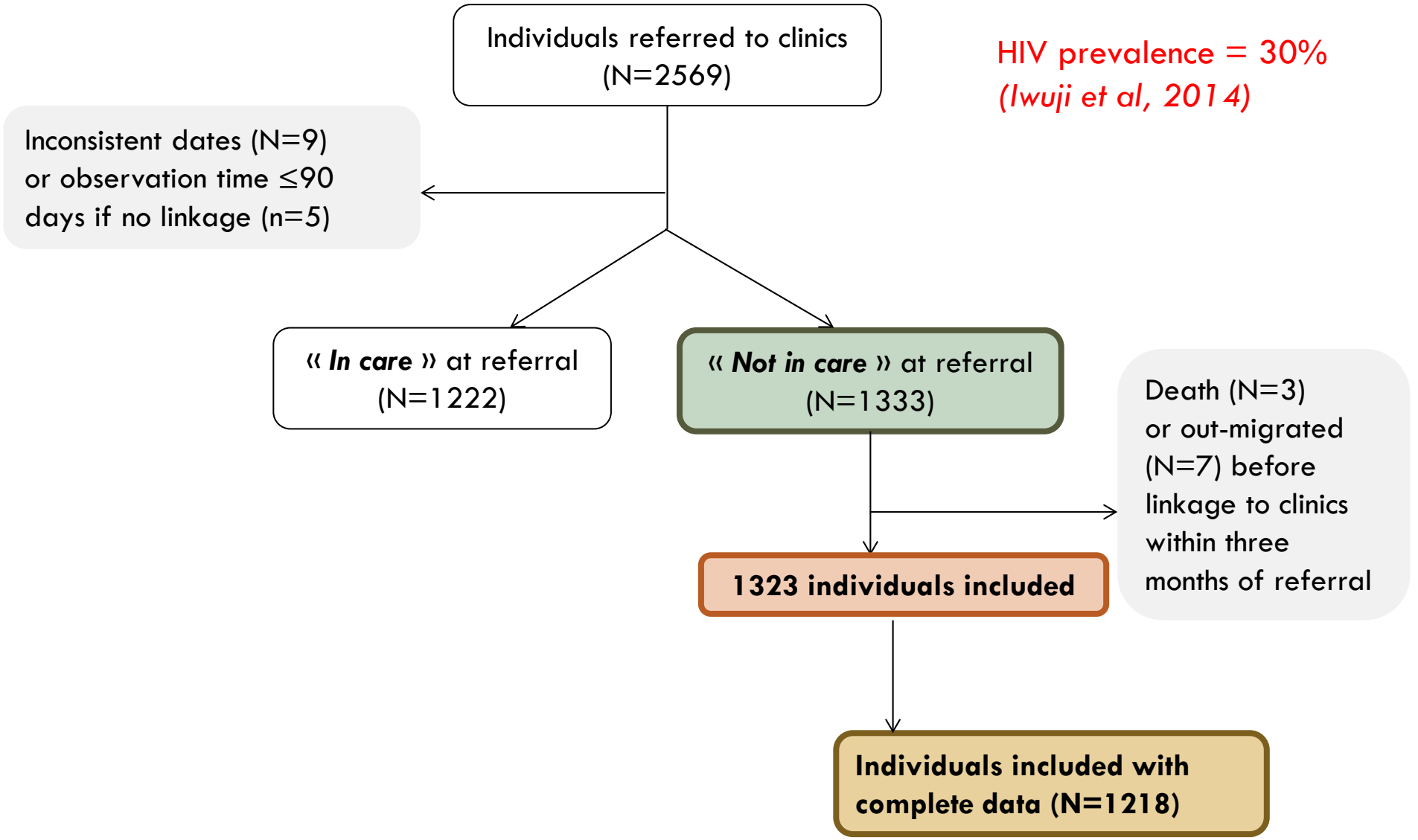
- **Outcome :** Linkage to HIV care within three months of referral
  - Linkage to care: attending a TasP or a DoH clinic

- **Explanatory covariates:** collected at referral (before HIV identification)
  - Socio-demographic
  - HIV-related
  - Trial-related

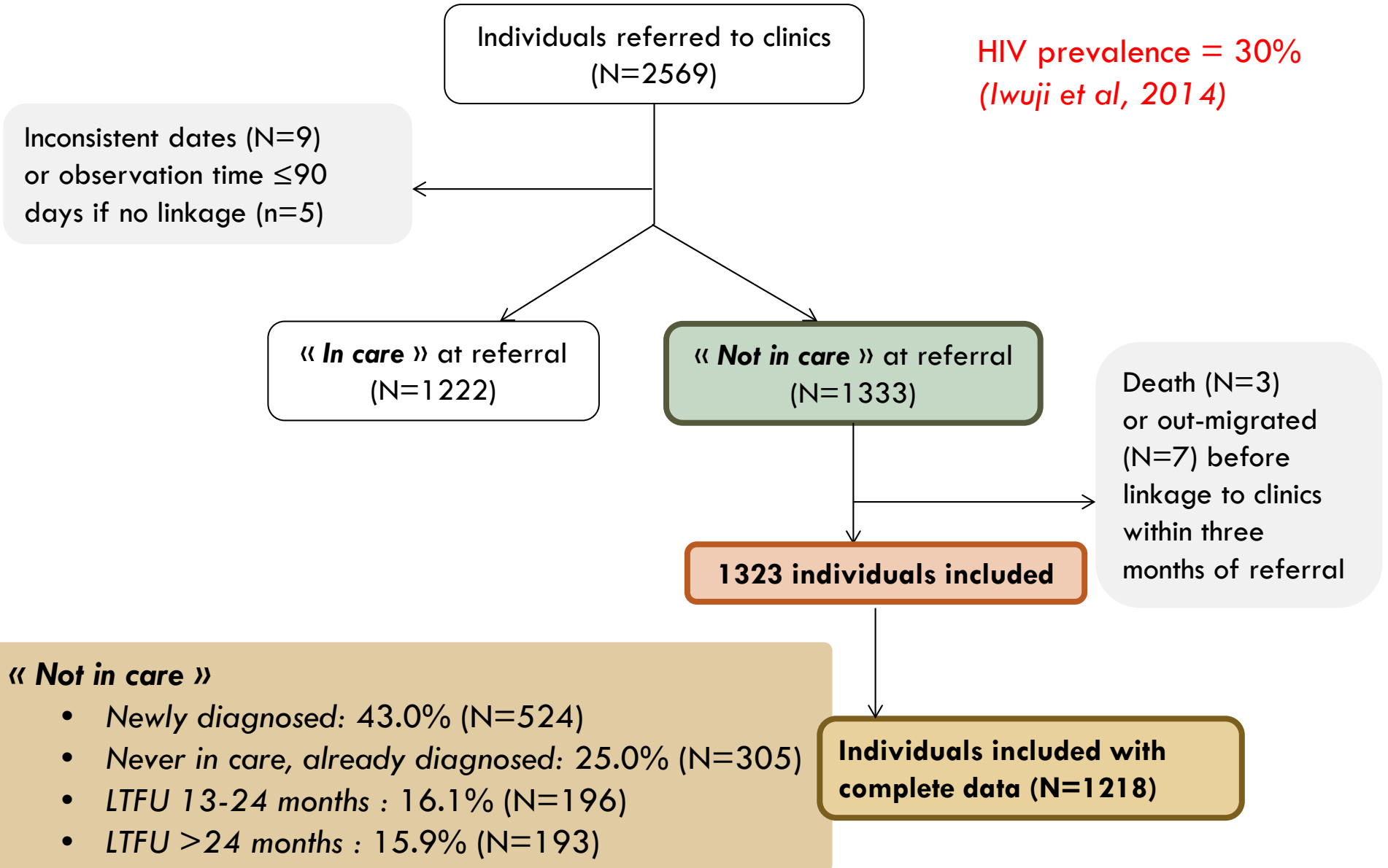
- **Statistical method:** multivariable logistic regression

Results

Selection of the study sample (1)



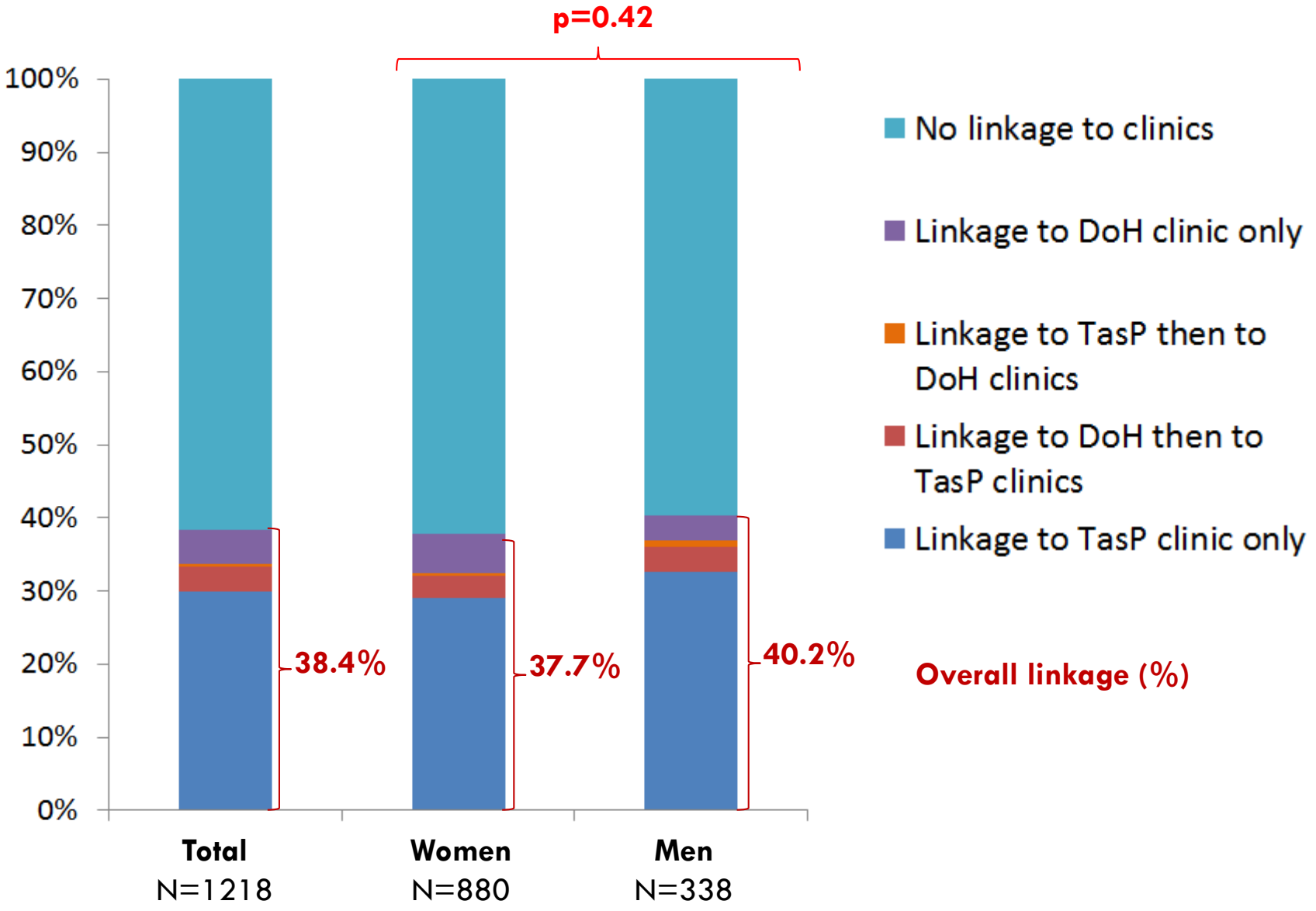
Selection of the study sample (2)



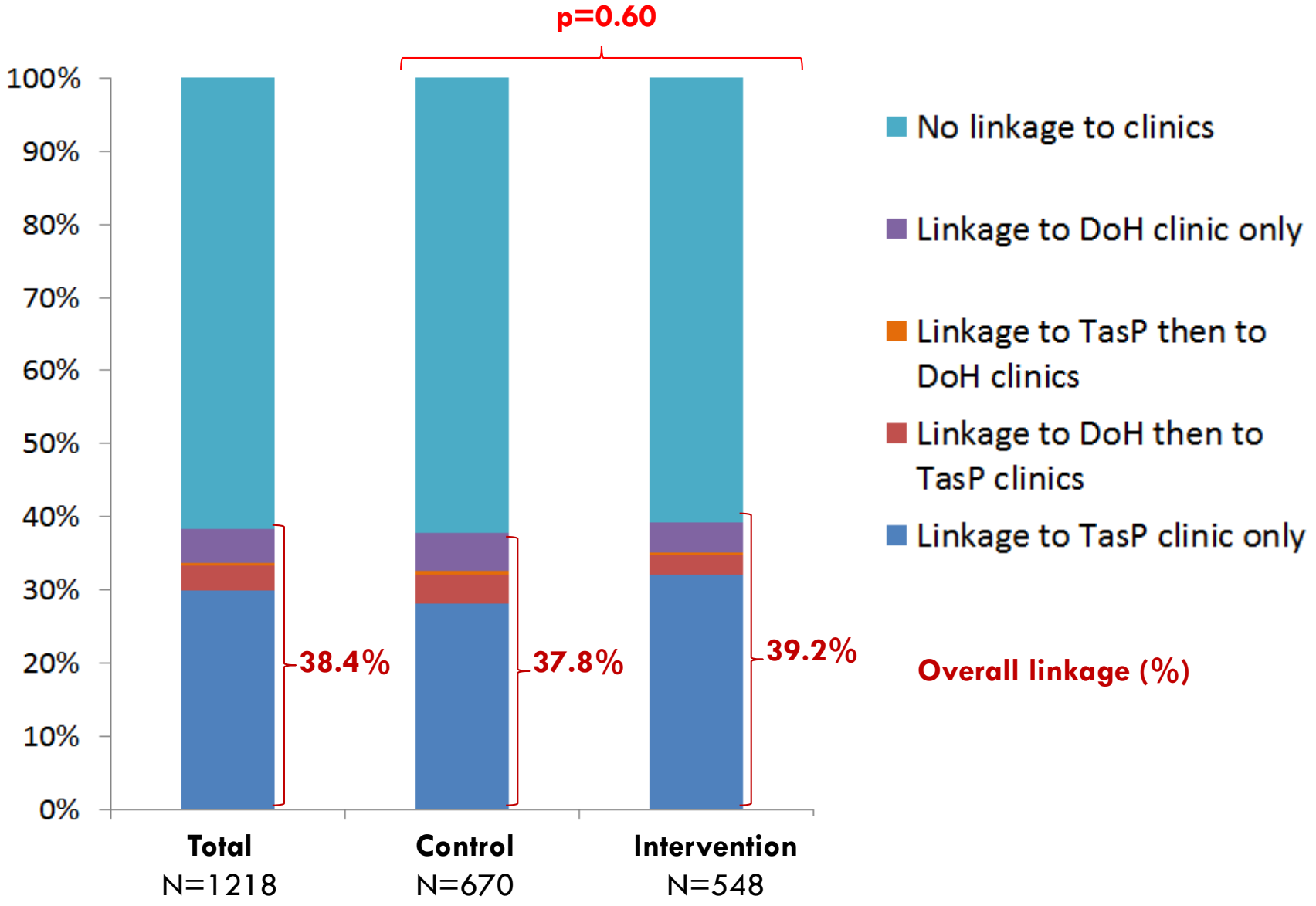
Description of the study sample

	Total (N=1218)		Women (N=880)		Men (N=338)	
Age (years)						
16-29	**508**	**(41.7)**	**399**	**(45.3)**	**109**	**(32.3)**
30-39	340	(27.9)	229	(26.0)	111	(32.8)
40-49	186	(15. 3)	123	(14.0)	63	(18.6)
50-84	184	(15.1)	129	(14.7)	55	(16.3)
Education level (n(%))						
Primary or less	**457**	**(37.5)**	**315**	**(35.8)**	**142**	**(42.0)**
Some secondary	404	(33.2)	293	(33.3)	111	(32.8)
At least completed secondary	357	(29.3)	272	(30.9)	85	(25.2)
Occupational status (n(%))						
Employed	200	(16.4)	114	(13.0)	86	(25.4)
Student	99	(8.1)	81	(9.2)	18	(5.3)
Other inactive	**919**	**(75.5)**	**685**	**(77.2)**	**234**	**(69.2)**
Knowing HV+ family member (n(%))						
Yes	**459**	**(37.7)**	**364**	**(41.4)**	**95**	**(28.1)**
No	759	(62.3)	516	(58.6)	243	(71.9)

Linkage to HIV care within three months of referral – SEX



Linkage to HIV care within three months of referral – ARM



Factors associated with linkage to HIV care within three months of referral (1)

***Multivariable* analysis (1/3) – Socio-demographic characteristics**

	Total (N=1218)			Women (N=880)			Men (N=338)		
	N	% link.	aOR [95%CI]	N	% link.	aOR [95%CI]	N	% link.	aOR [95%CI]
Education level									
Primary or less	457	48.4	1.00 -	315	48.9	1.00 -	142	47.2	1.00 -
Some secondary	404	**34.7**	**0.67 [0.48-0.95]**	293	**33.8**	**0.65 [0.43-0.98]**	111	**36.9**	0.73 [0.40-1.32]
Completed secondary	357	**30.0**	**0.57 [0.40-0.82]**	272	**29.0**	**0.56 [0.37-0.89]**	85	**32.9**	0.60 [0.44-1.27]
Occupational status									
Employed	200	42.5	1.00 -	114	39.5	1.00 -	86	46.5	1.00 -
Student	99	**18.2**	**0.48 [0.26-0.90]**	81	**18.5**	0.54 [0.26-1.14]	18	**16.7**	0.38 [0.09-1.53]
Inactive	919	**39.7**	0.96 [0.69-1.34]	685	**39.7**	1.10 [0.71-1.70]	234	**39.7**	0.74 [0.44-1.27]

Multivariable model including age, education level, occupational status, assets, distance to clinic, ARV perceptions, HIV care status at referral, stigma, round of HIV testing, trial arm

Factors associated with linkage to HIV care within three months of referral (2)

Multivariable analysis (2/3) – HIV knowledge and perception

	Total (N=1218)			Women (N=880)			Men (N=338)		
	N	% link.	aOR [95%CI]	N	% link.	aOR [95%CI]	N	% link.	aOR [95%CI]
Knowing HIV+ family member									
No	759	35.7	1.00 -	516	34.5	1.00 -	243	38.3	1.00 -
Yes	459	42.9	**1.44 [1.12-1.85]**	364	42.3	**1.49 [1.11-2.00]**	95	45.3	1.22 [0.73-2.05]
Would take ARVs if HIV+									
No/DKN	78	26.9	1.00 -	64	26.6	1.00 -	14	28.6	1.00 -
Yes	1140	39.2	**2.00 [1.16-3.45]**	816	38.6	**2.09 [1.12-3.88]**	324	40.7	1.71 [0.51-5.76]

Multivariable model including age, education level, occupational status, assets, distance to clinic, ARV perceptions, HIV care status at referral, stigma, round of HIV testing, trial arm

Factors associated with linkage to HIV care within three months of referral (3)

Multivariable analysis (3/3) – Trial-related characteristics

	Total (N=1218)			Women (N=880)			Men (N=338)		
	N	% link.	aOR [95%CI]	N	% link.	aOR [95%CI]	N	% link.	aOR [95%CI]
Distance to the closest TasP clinic									
0-1 km	443	45.8	1.00 -	323	46.4	1.00 -	120	44.2	1.00 -
1-2 km	431	34.3	**0.58 [0.44-0.78]**	314	32.8	**0.53 [0.38-0.75]**	117	38.5	0.77 [0.44-1.35]
2-5 km	344	34.0	**0.57 [0.42-0.78]**	243	32.5	**0.52 [0.36-0.75]**	101	37.6	0.77 [0.42-1.38]
HIV care status at referral									
LTFU 13-24 months	196	57.1	1.00 -	145	54.5	1.00 -	51	64.7	1.00 -
LTFU >24 months	193	**43.0**	**0.57 [0.38-0.87]**	152	**42.1**	**0.61 [0.38-0.98]**	41	**46.3**	0.49 [0.20-1.20]
Already diagnosed	305	32.8	**0.40 [0.27-0.59]**	236	32.2	**0.40 [0.26-0.63]**	69	34.8	**0.38 [0.17-0.84]**
Newly diagnosed	524	33.0	**0.40 [0.28-0.57]**	347	32.6	**0.43 [0.28-0.65]**	177	33.9	**0.33 [0.16-0.66]**

Multivariable model including age, education level, occupational status, assets, distance to clinic, ARV perceptions, HIV care status at referral, stigma, round of HIV testing, trial arm

Discussion

Summary of results

- **< 40% linkage to HIV care within three months of referral after home-based HIV testing, irrespective of gender**

- **Factors associated with lower linkage to HIV care**
  - **Socio-demographic:** high education level, being a student
  - **HIV knowledge and perception:** don't know HIV+ family member, would not take ARV's if HIV+
  - **Trial related characteristics:** longer distance to clinic, never been in HIV care before referral

- For men: the pattern of associations with linkage to HIV care were similar to those seen in women, but few reached statistical significance
  - Lack of statistical power?

Interventions to increase linkage to HIV care (1)

- Students
- High education level
- Would not take ARVs if HIV+
- Don't know HIV+ family member
- Never been in HIV care before referral
- Long distance to clinic

Less likely to be linked to care within three months of referral

Interventions to increase linkage to HIV care (2)

***Intervention 1*. SMS reminders to all enrollees**

Students

High education level

Would not take ARVs if HIV+

Don't know HIV+ family member

Never been in HIV care before referral

Long distance to clinic

Interventions to increase linkage to HIV care (3)

***Intervention 1*. SMS reminders to all enrollees**

For those not linked within one month of referral

- Students
- High education level
- Would not take ARVs if HIV+
- Don't know HIV+ family member
- Never been in HIV care before referral
- Long distance to clinic

Intervention 2.

Counselling and motivational support with Health System Navigators

- Phone
- Face to face visits at home or in a neutral place
- Escort to clinic

Interventions to increase linkage to HIV care (4)

***Intervention 1*. SMS reminders to all enrollees**

- Students
- High education level
- Would not take ARVs if HIV+
- Don't know HIV+ family member
- Never been in HIV care before referral
- Long distance to clinic

For those not linked within one month of referral

Intervention 2.

Counselling and motivational support with Health System Navigators

- Phone
- Face to face visits at home or in a neutral place
- Escort to clinic

For those not linked after Intervention 2

Intervention 3.

Home-based ART initiation and care with CD4 point-of-care (with the aim to encourage people to go to clinic)

Acknowledgements

- Trial participants
- Africa Centre staff
- Traditional Authorities
- Department of Health, South Africa
- Merck/Gilead

ANRS 12249 Study Group: François Dabis (co-PI), Marie-Louise Newell (co-PI), Deenan Pillay (co-PI), Collins Iwuji (South coordinator), Joanna Orne-Gliemann (North coordinator), Till Bärnighausen, Eric Balestre, Sylvie Boyer, Alexandra Calmy, Vincent Calvez, Marie-Laure Chaix, Rosemary Dray-Spira, Kamal El Farouki, Kenneth Freedberg, Kobus Herbst, John Imrie, Sophie Karcher, Joseph Larmarange, France Lert, Richard Lessells, Thembisa Makowa, Anne-Geneviève Marcelin, Laura March, Nuala McGrath, Kevi Naidu, Colin Newell, Nonhlanhla Okesola, Tulio de Oliveira, Melanie Plazy, Tamsen Rochat, Bruno Spire, Frank Tanser, Rodolphe Thiébaut, Johannes Viljoen, Thembelile Zuma.