

CONTROLLING THE HIV EPIDEMIC WITH
ANTIRETROVIRALS



Having the Courage
of Our Convictions

1 - 2 October 2015 • Paris

HIV in KwaZulu-Natal and the ANRS Treatment as Prevention Trial

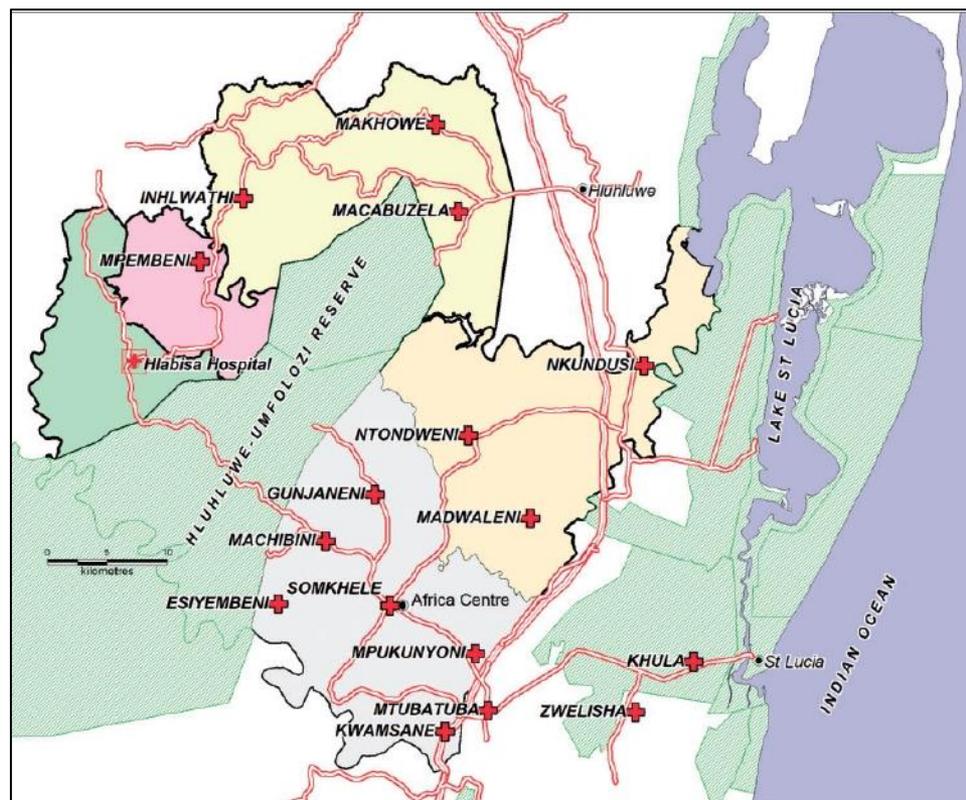
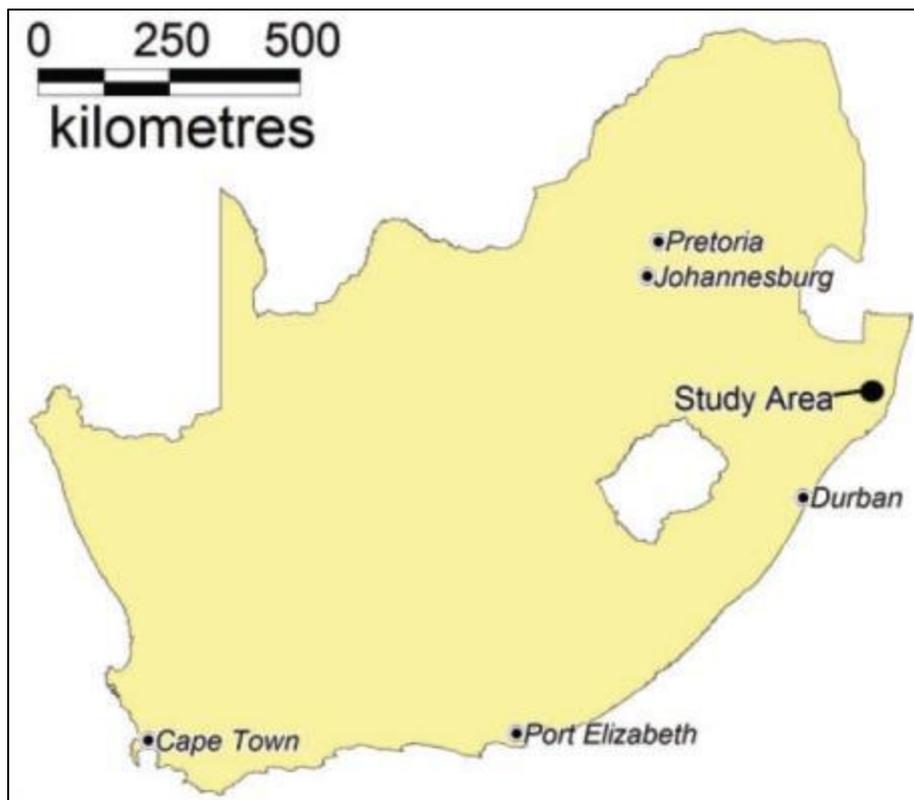
Deenan Pillay

Director, Africa Centre for Population Health, UKZN
Professor of Virology, UCL



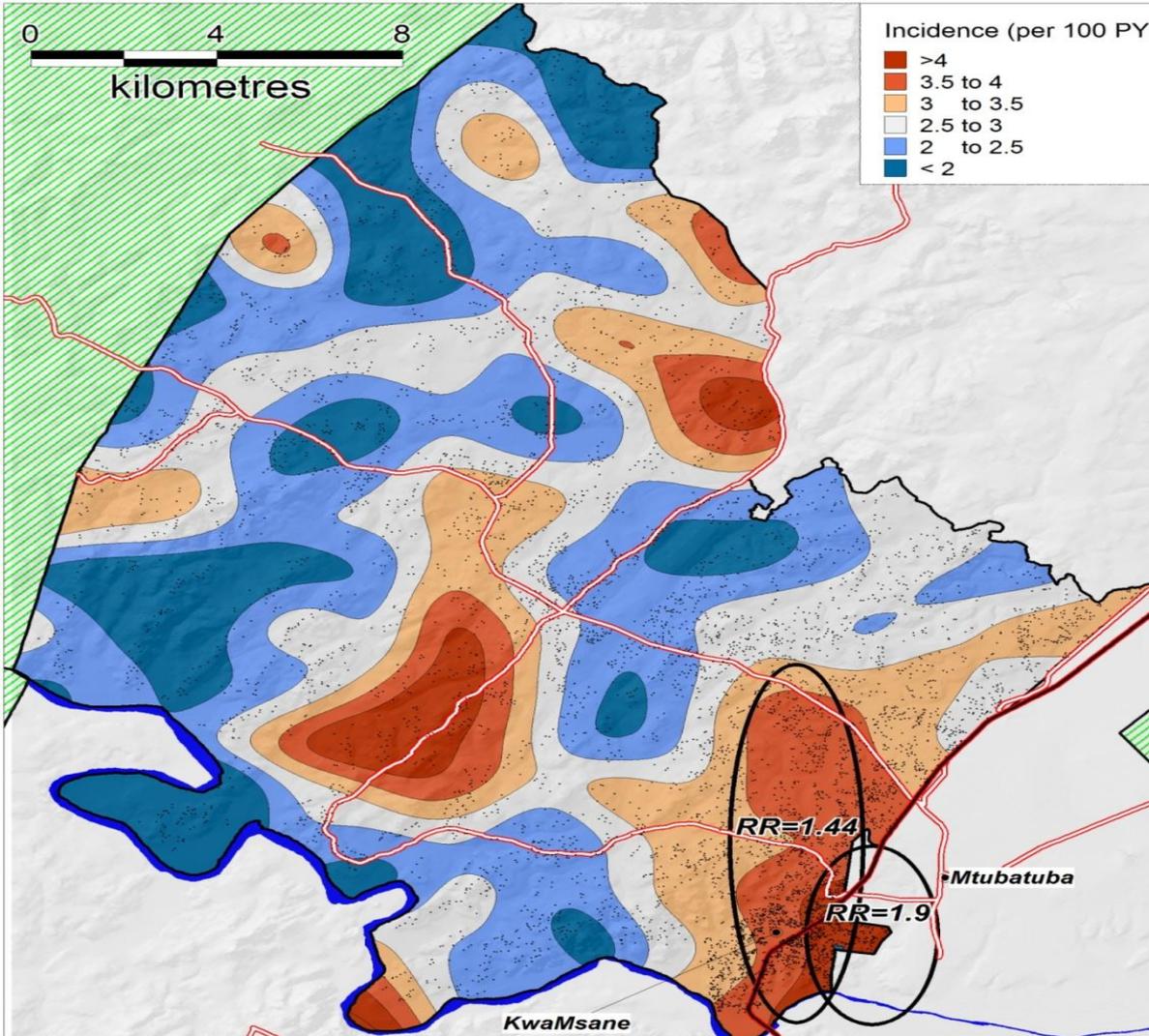


Africa Centre for Population Health



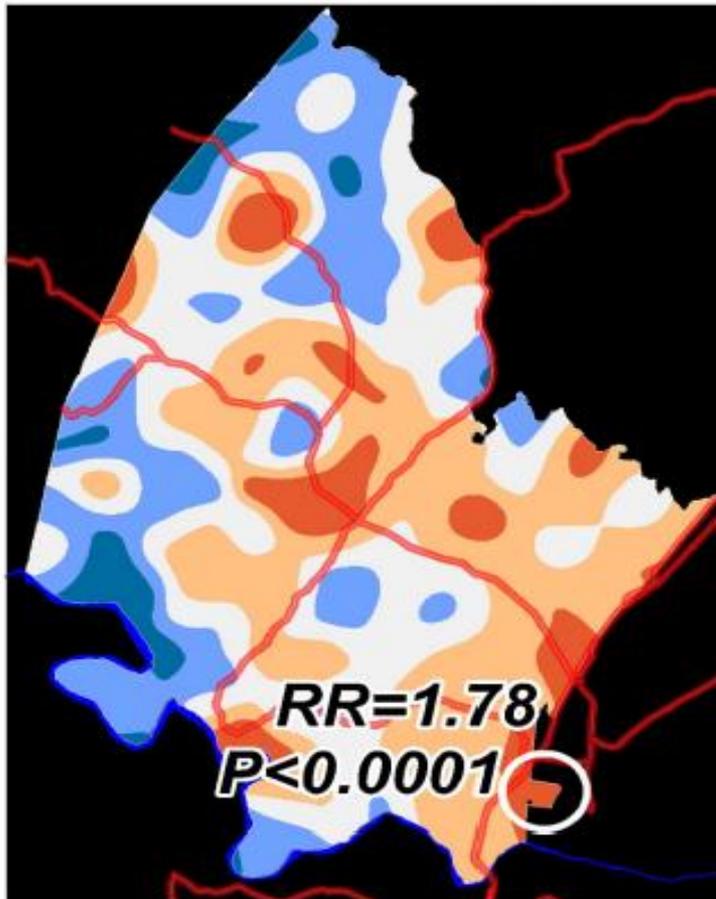


Spatial Clustering of new HIV infections

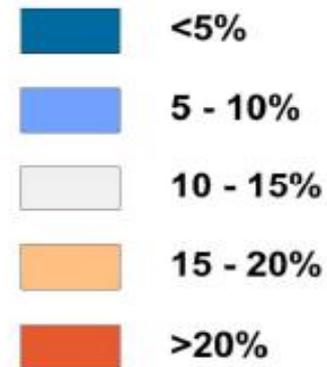


Tanser et al CROI. Boston, MA; 2011.

Population prevalence of detectable virus (PPDV)



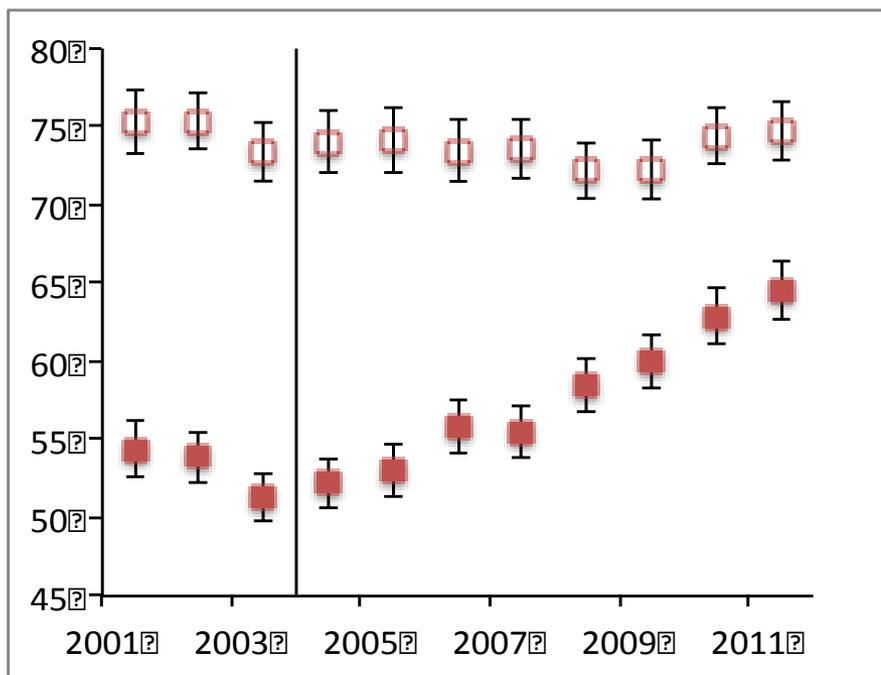
Prevalence(%)



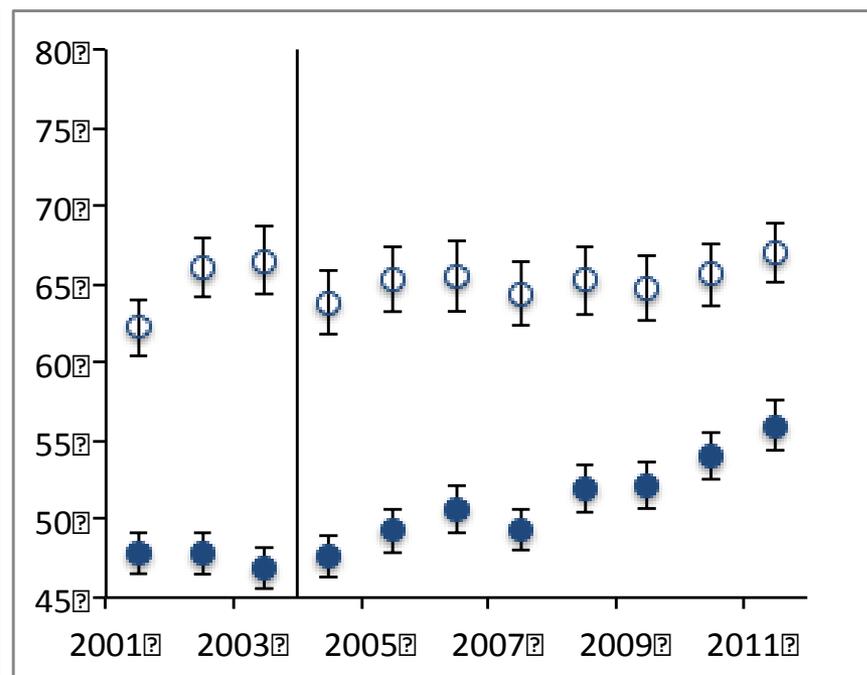


Life expectancy within the AC population

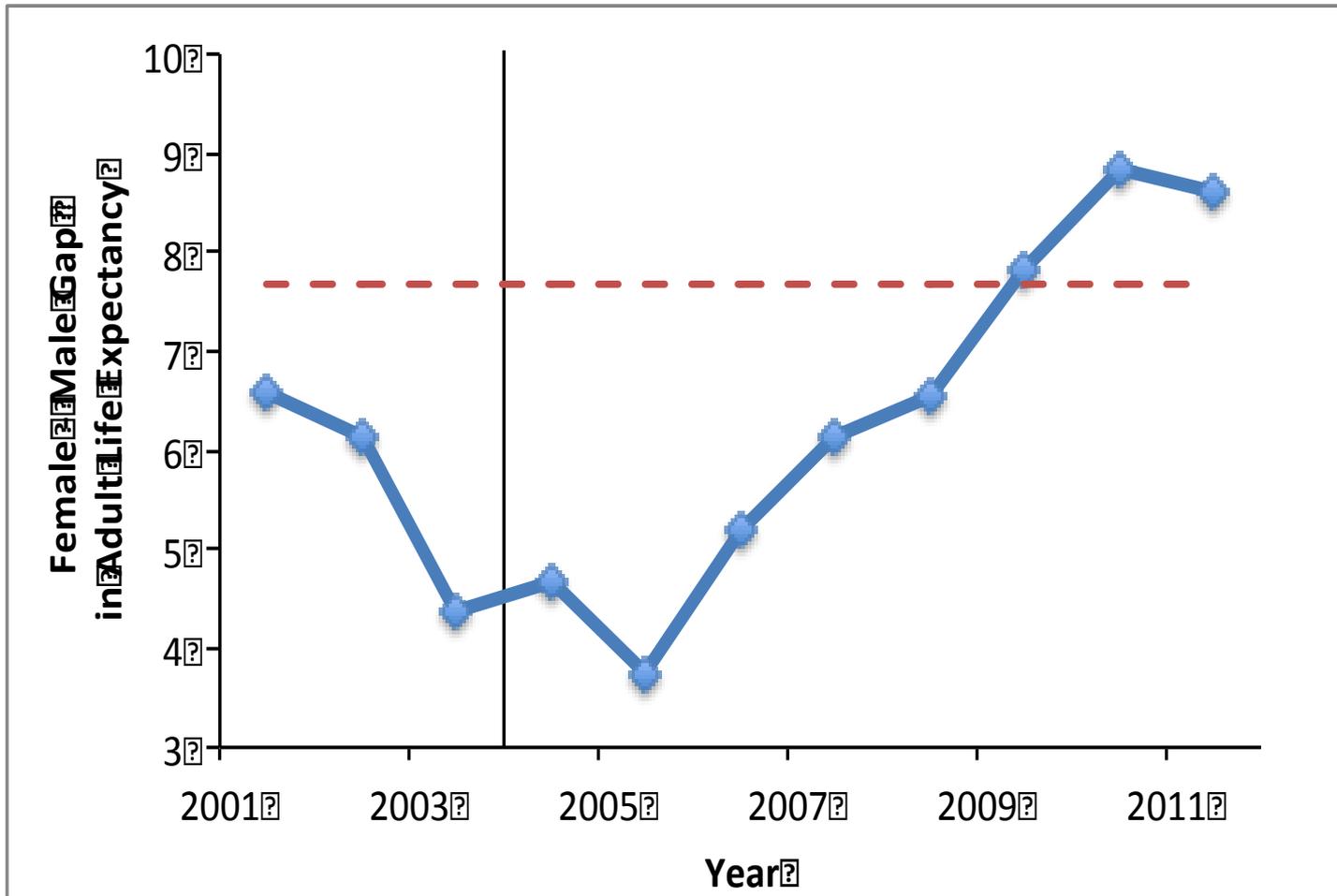
Women



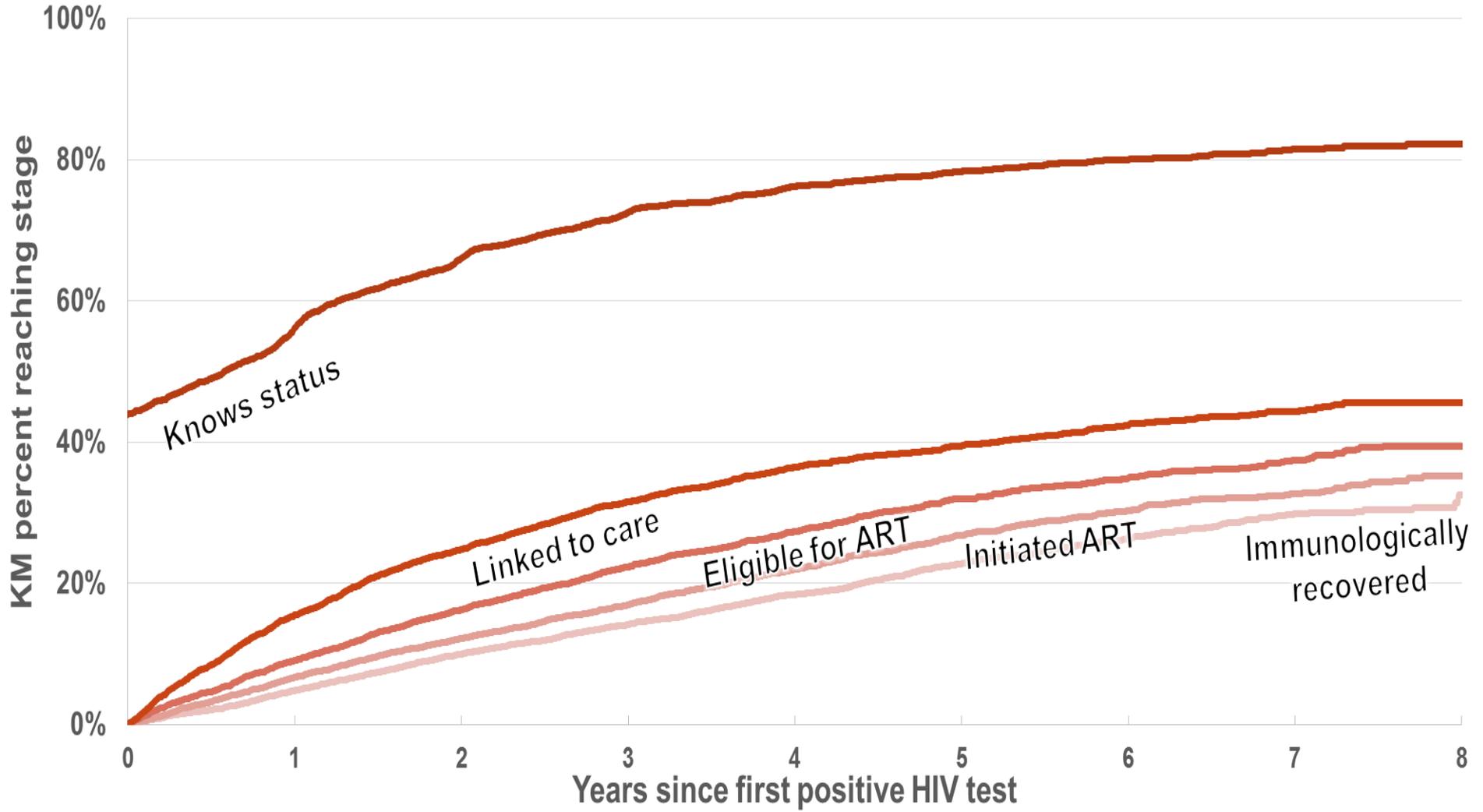
Men



Male-female differences in life expectancy

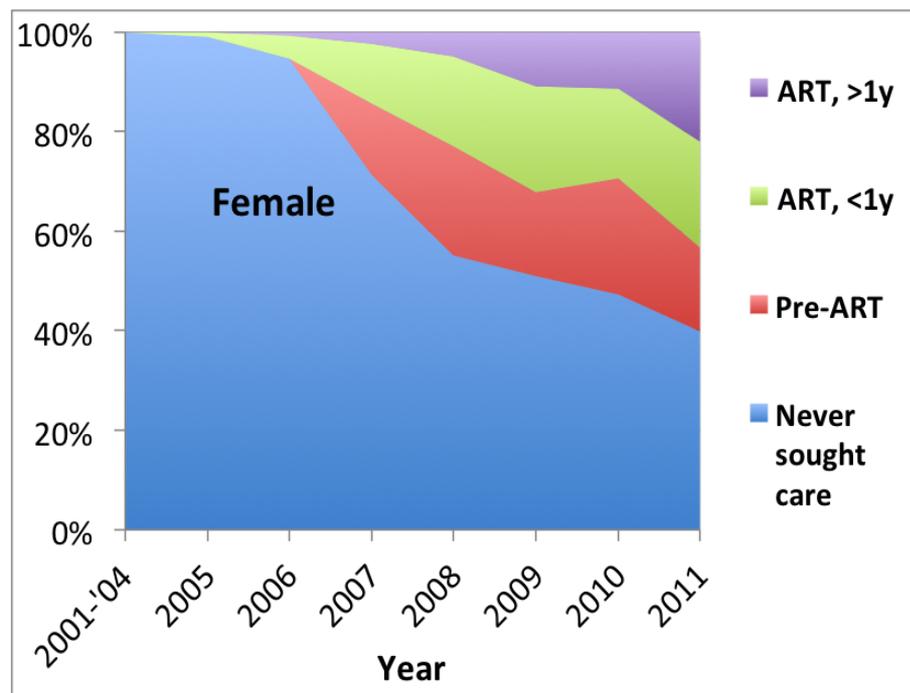
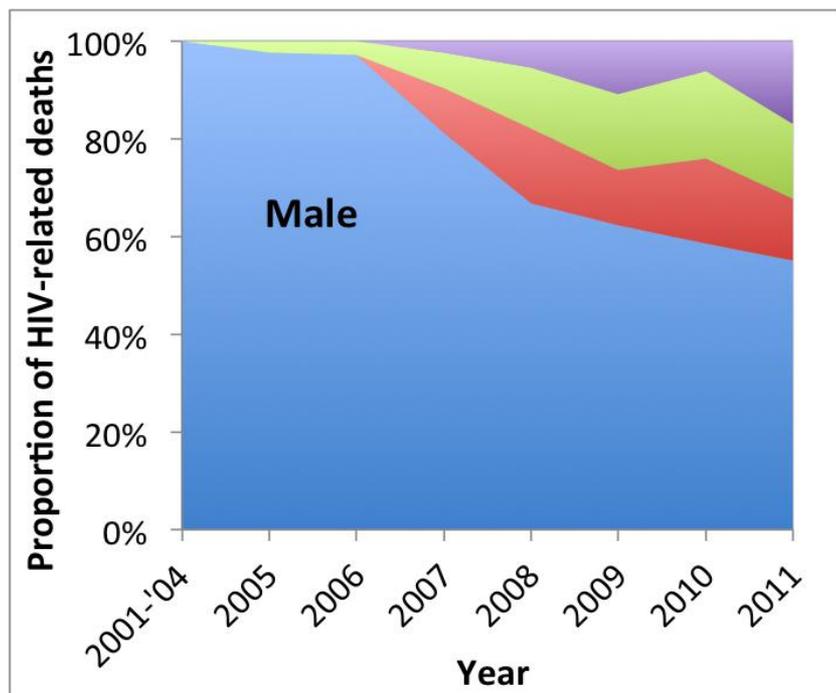


Continuous time treatment cascade





Mortality through the Cascade of Care



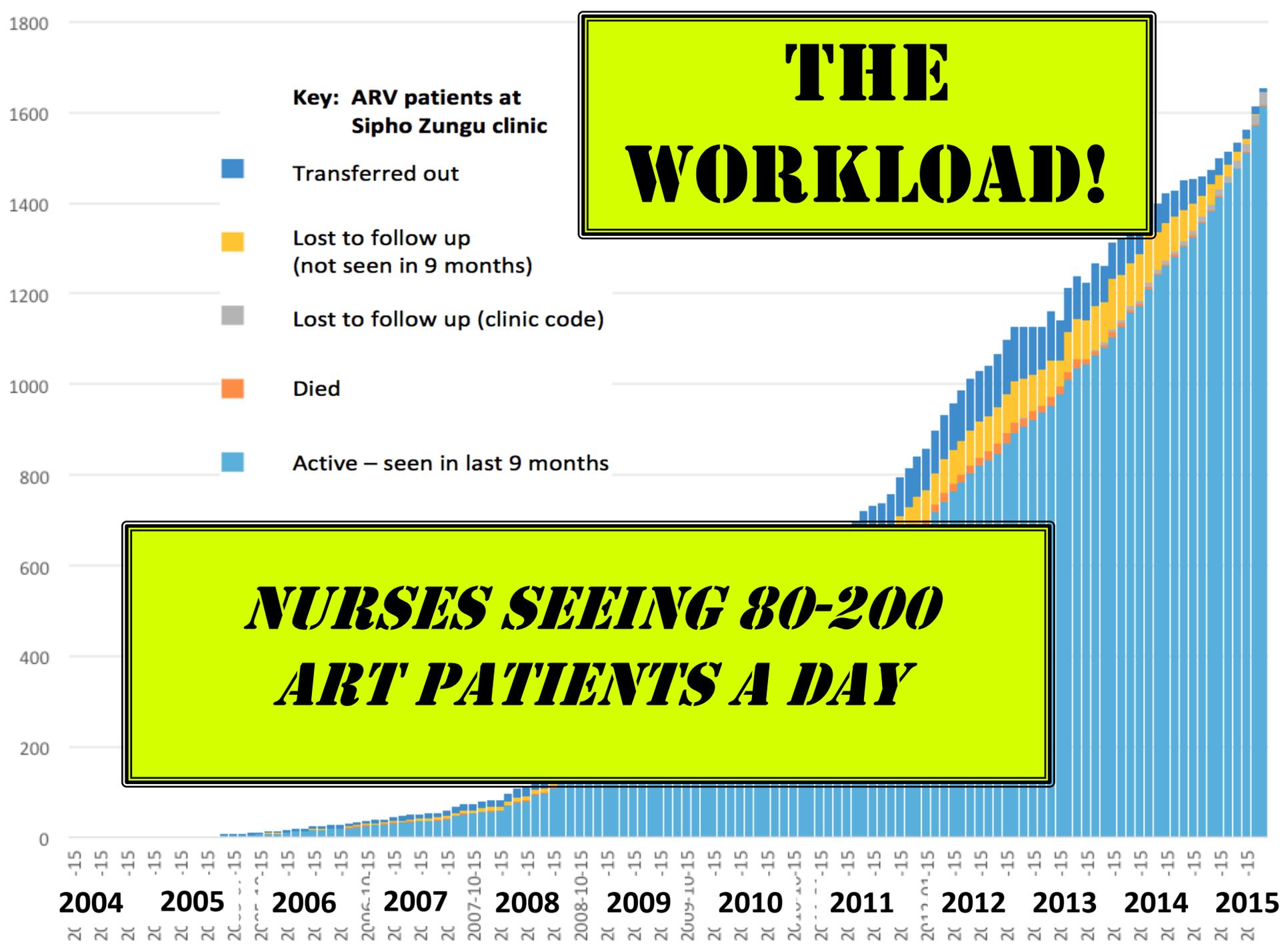
Bor et al PLoS Med (in press)

**THE
WORKLOAD!**

**Key: ARV patients at
Sipho Zungu clinic**

- Transferred out
- Lost to follow up (not seen in 9 months)
- Lost to follow up (clinic code)
- Died
- Active – seen in last 9 months

***NURSES SEEING 80-200
ART PATIENTS A DAY***



The ANRS 12249 TasP trial



- Cluster randomized trial (2011-2016) evaluating the feasibility, acceptability and efficacy of immediate ART on HIV incidence in rural KwaZulu-Natal, South Africa
(*Iwuji C et al, Trials 2013; Orne-Gliemann et al, BMC Publ Health 2015*)

Home-based HIV-testing (6 monthly rounds)

Trial area population: 22,000 individuals

Referral to TasP clinic if identified HIV+

TasP clinics (1/cluster)

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

11 Control clusters: Treat all HIV+ individuals according to South African guidelines

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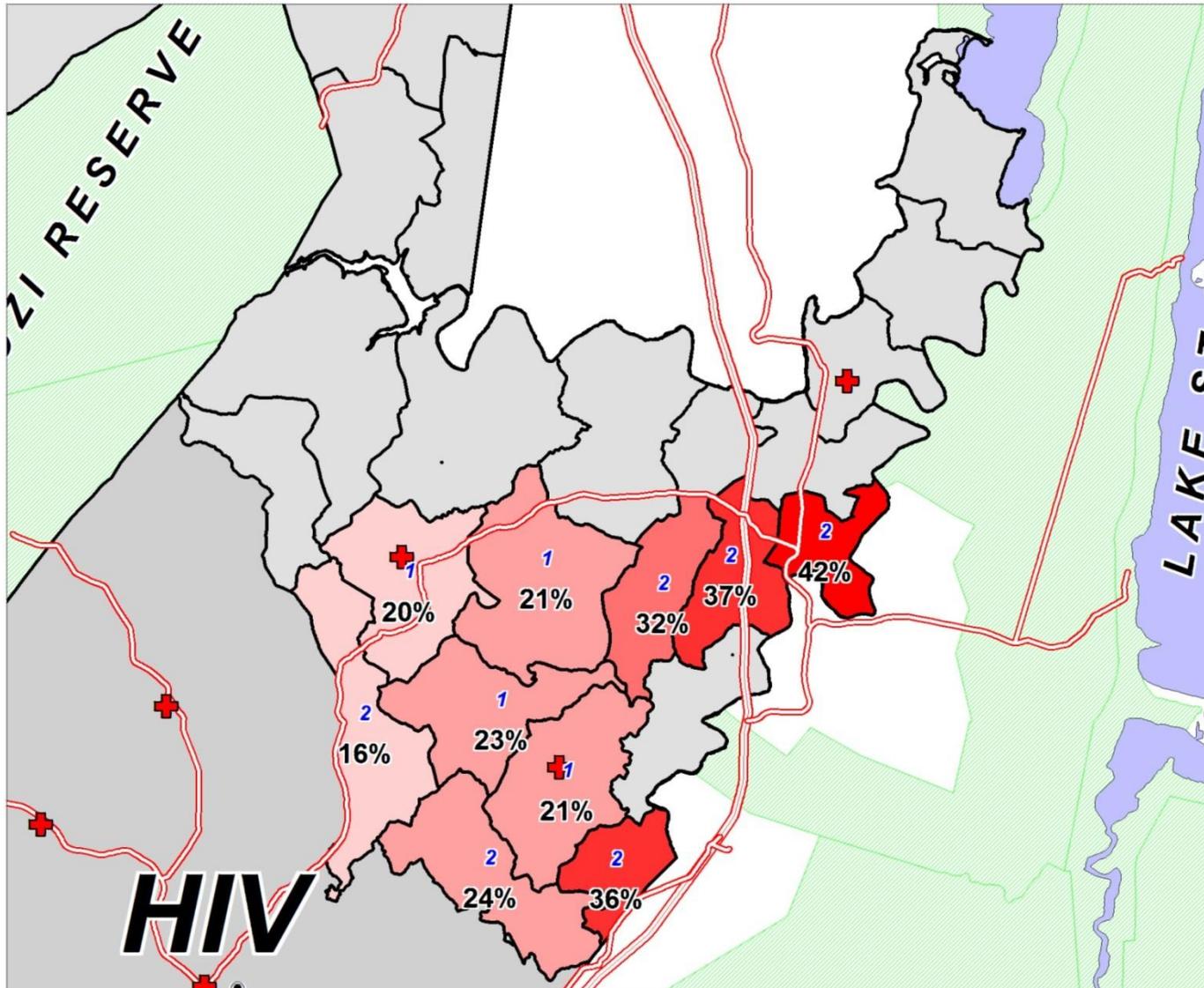
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DoH clinic (3 clinics in trial area)

Treat all HIV+ individuals according to South African guidelines

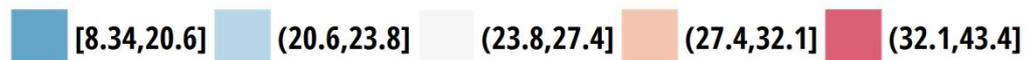
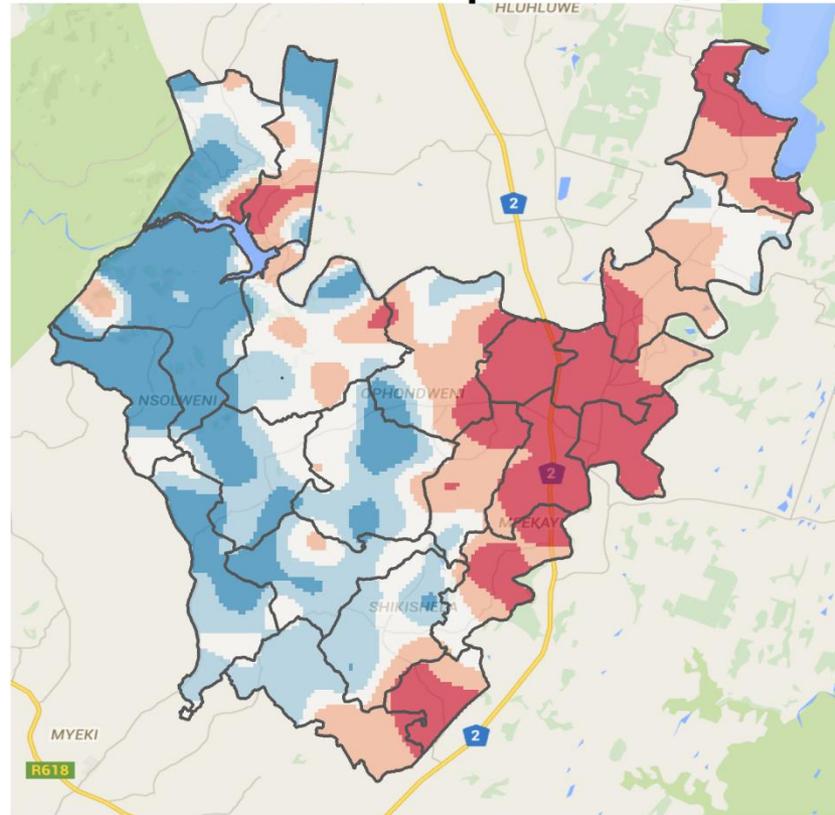
HIV prevalence by cluster – Initial 10 clusters



HIV prevalence - All 22 clusters



First valid DBS HIV prevalence (%)



Description of the study population

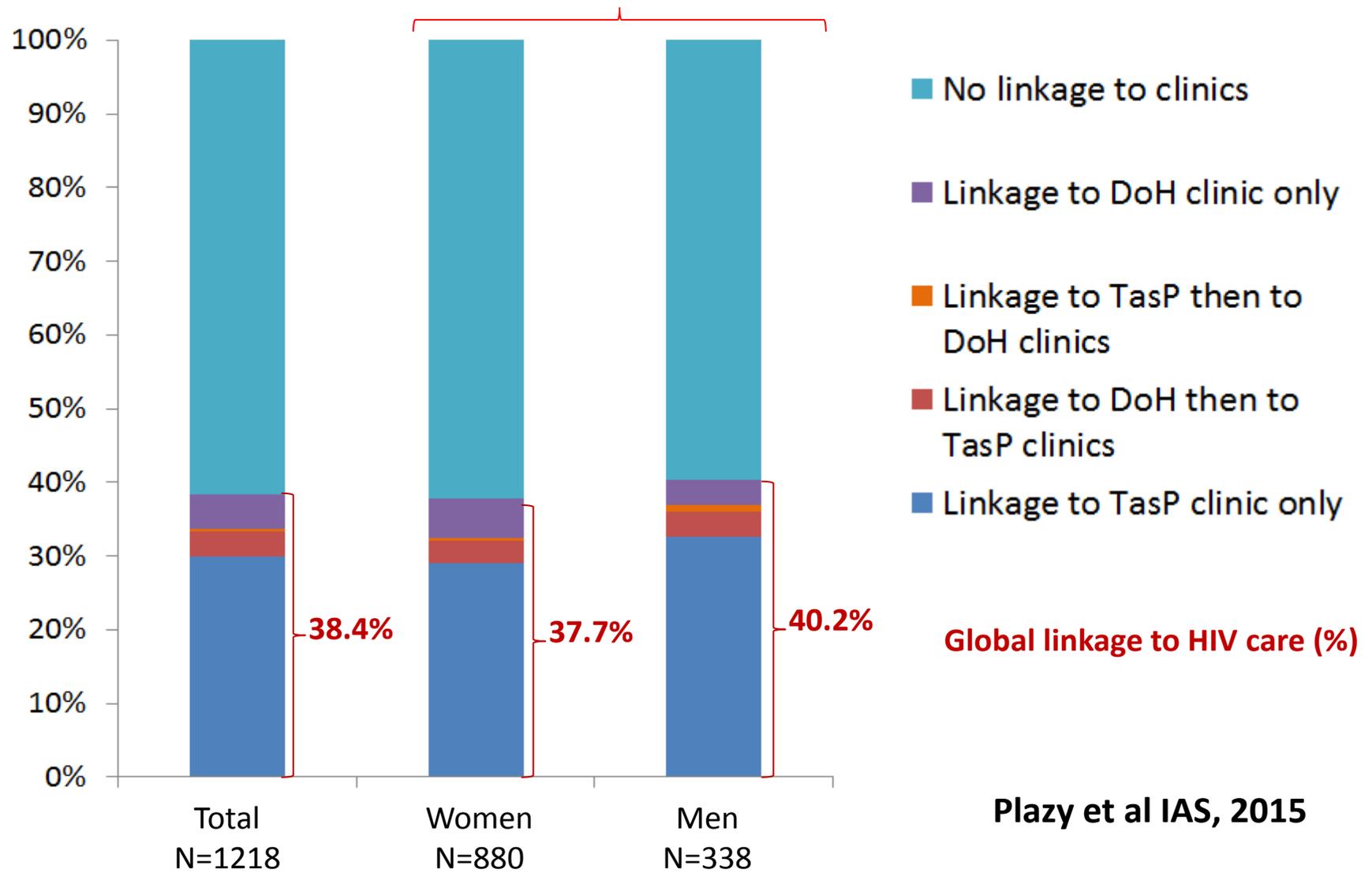


	Total (N=1218)	Women (N=880)	Men (N=338)
Age (years)			
16-29	508 (41.7)	399 (45.3)	109 (32.3)
30-39	340 (27.9)	229 (26.0)	111 (32.8)
40-49	186 (15.3)	123 (14.0)	63 (18.6)
50-84	184 (15.1)	129 (14.7)	55 (16.3)
Education level (n(%))			
Primary or less	457 (37.5)	315 (35.8)	142 (42.0)
Some secondary	404 (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)

Rates of linkage to HIV care within 3 months of referral by sex



P=0.42



Plazy et al IAS, 2015

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



Multivariable analysis (1/3) – Socio-demographic variables

	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												
<i>Primary or less</i>	457	48.4	1.00	-	315	48.9	1.00	-	142	47.2	1.00	-
<i>Some secondary</i>	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]	
<i>Completed secondary</i>	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												
<i>Employed</i>	200	42.5	1.00	-	114	39.5	1.00	-	86	46.5	1.00	-
<i>Student</i>	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]	
<i>Inactive</i>	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



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



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

ANRS 12 249

The way forward



- **Incidence reduction between arms will be measured in the coming 9 months**
- **More comprehensive set of interventions needed to achieve the 90 x 90 x 90 target**

Acknowledgements



- Till Barnighausen, Jacob Bor, Francois Dabis
- Africa Centre staff

ANRS 12249 Study Group: Till Bärnighausen, Sylvie Boyer, Alexandra Calmy, François Dabis (co-PI), Rosemary Dray-Spira, Ken Freedberg, John Imrie, Collins Iwuji (Coordinator South), Sophie Karcher, Joseph Larmarange, France Lert, Richard Lessells, Kevi Naidu, Colin Newell, Marie-Louise Newell, Nonhlanhla Okesola, Tulio de Oliveira, Joanna Orne-Gliemann (Coordinator North), Deenan Pillay (co-PI), Bruno Spire, Frank Tanser, Rodolphe Thiébaud, Johannes Viljoen



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