



Centre Population  
et Développement



Antiretroviral Treatment as Prevention • ANRS 12249  
Ukaphila Kwami, ukaphila kwethu (my health for our health)



Life history research  
society conference 2018

# From home-based HIV testing to viral suppression: HIV care trajectories in the context of Universal Test-and-Treat in rural South Africa



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Infectious diseases in lower-  
income countries (IDLIC)  
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# Context: the Hlabisa sub-district

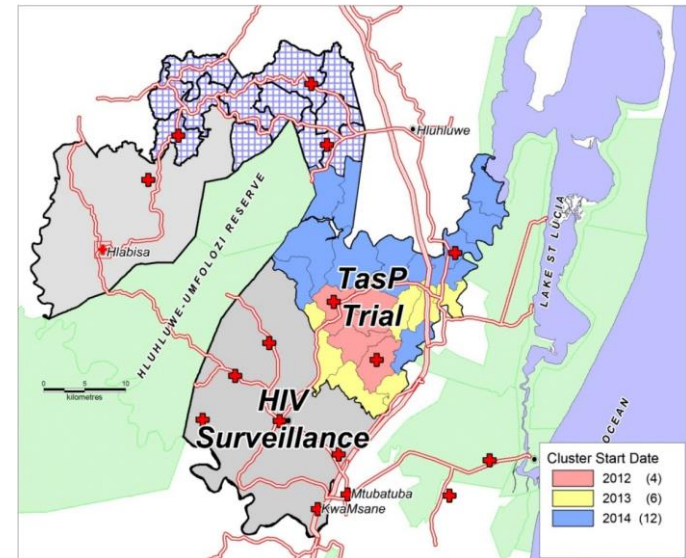


- ✓ rural area, poor, high migration rate
- ✓ 1 430 km<sup>2</sup>
- ✓ 248 000 inhabitants
- ✓ 29% of people HIV+ (2011) (1)

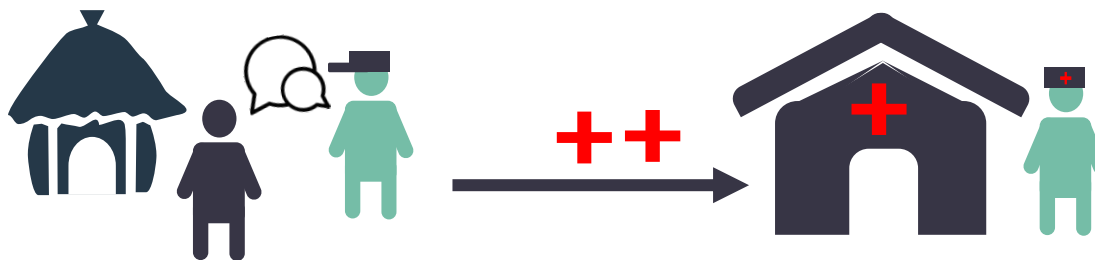
# The ANRS 12249 Tasp trial (2012-2016)

**Trial design:** Cluster-randomized controlled trial (2 x 11; 1,250 adults)

**Objective :** Evaluate the impact of universal antiretroviral treatment (ART) on HIV incidence in the general population



HIV testing every 6 months



Support for entry and retention in care

ART

According to national recommendations

Control

Universal

Intervention

# Objective

**to describe the timing and sequencing of individual HIV care statuses from clinic referral to viral suppression in rural South Africa, by identifying groups of individuals with similar trajectories and identifying factors associated with each care trajectories group.**

# Methods (1)

**Study design:** prospective cohort

**Données d'étude:** Data from the TasP trial and the governmental clinic in the Hlabisa sub-district (March 2012-June 2016)

**Study population :** Participants to the TasP trial, HIV+, not in HIV care at time of clinic referral

**Statistical analysis :** Sequence analysis

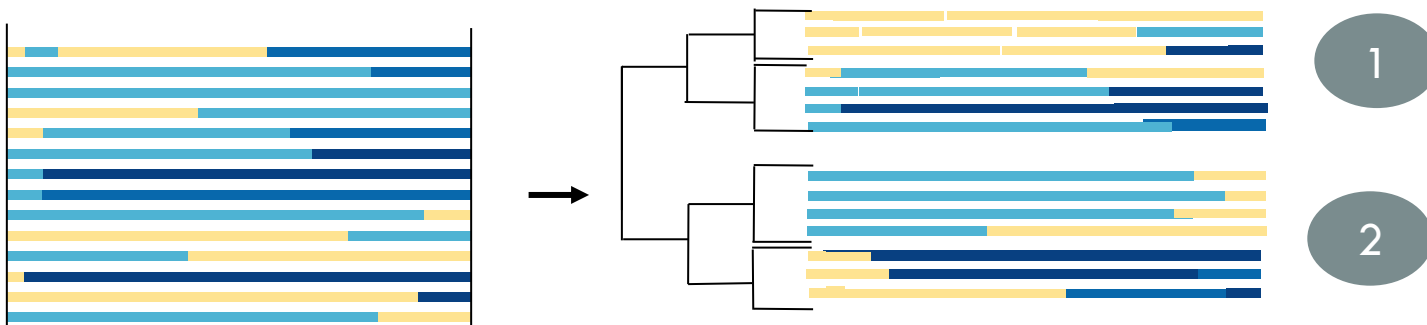
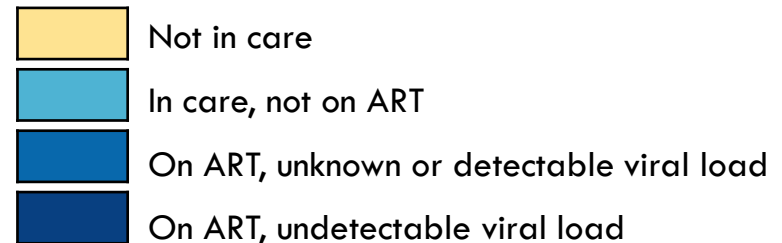
# Methods (2)

## Sequence analysis

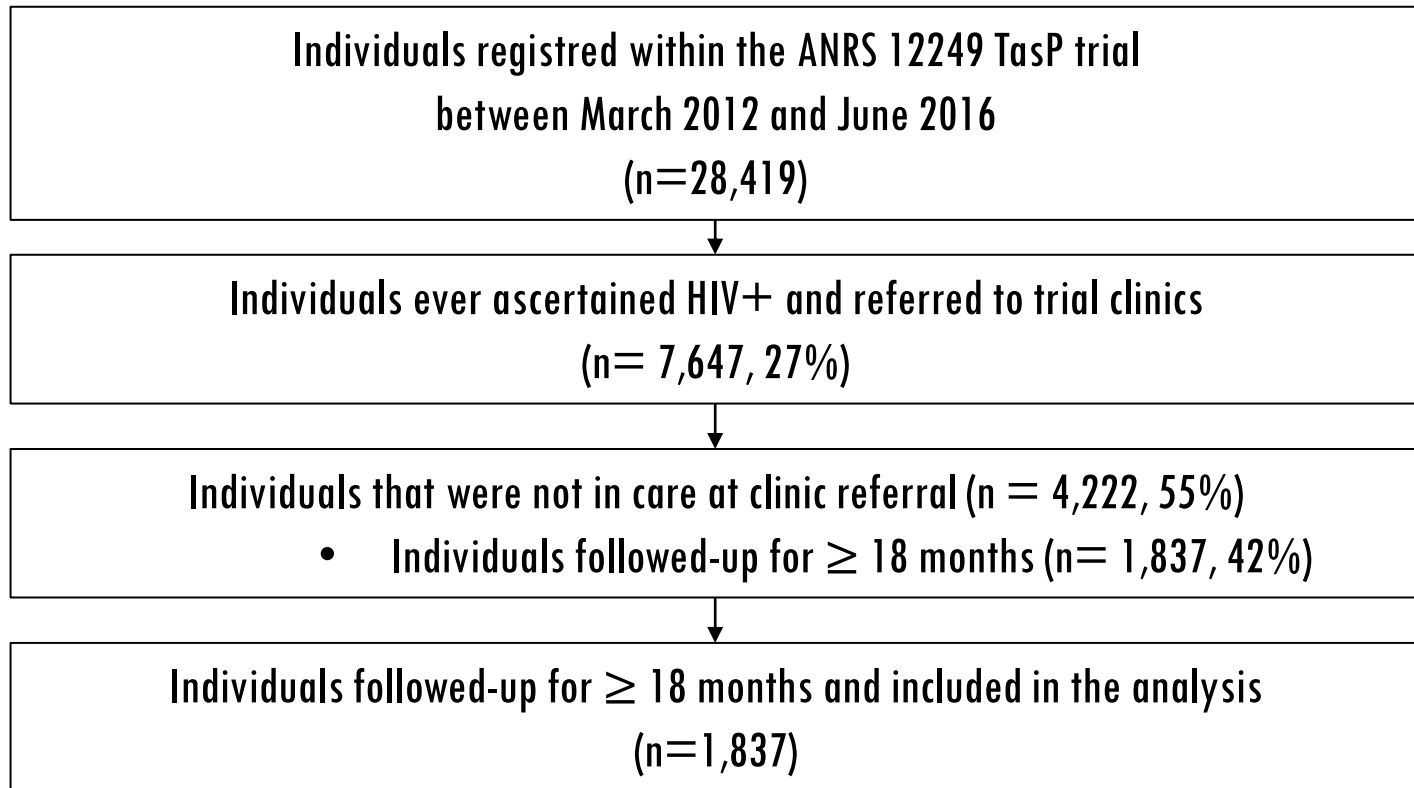
1. Creating the individual care trajectories
2. Measuring the differences between trajectoires (Optimal Matching)
3. Determining homogeneous trajectories groups (Hierarchical classification)
4. Describing trajectories groups
5. Analyzing the factors that are associated to trajectories groups (multinomial logistic regression)



Clinic referral



# Selection of the study population



# Description of the study population (n=1,837)

## Demographic characteristics

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- 74% of women
- Median age: 34 years old [27-45]

## Socio-economic characteristics

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- 77% unemployed

## HIV care status at clinic referral

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- 30% lost to follow-up
- 57% already diagnosed, have never entered care
- 13% newly diagnosed

## Perceptions of antiretroviral treatment (ART)

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- 89% are less worried now that ART have improved
- 84% think that ART make people less infectious

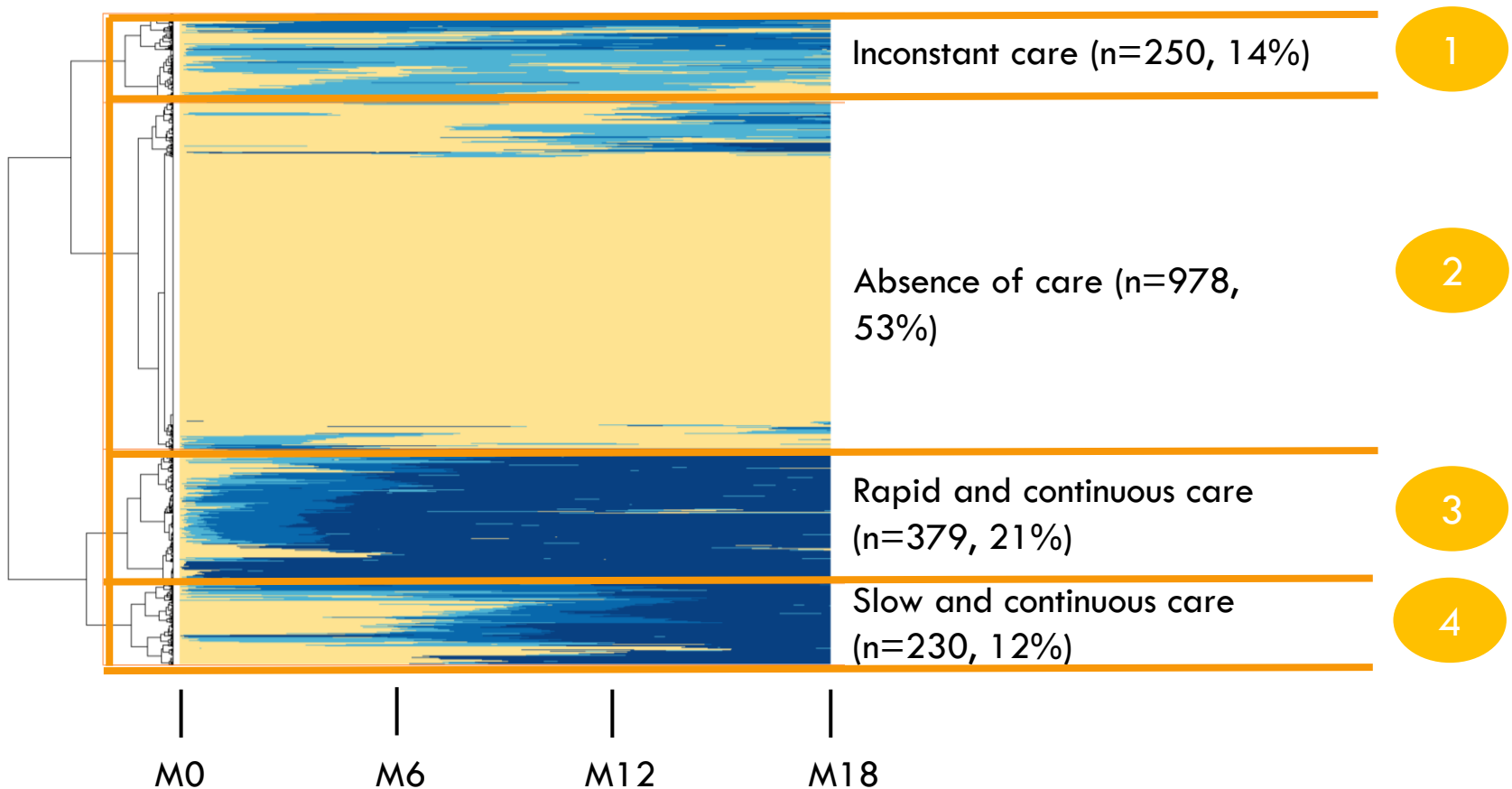
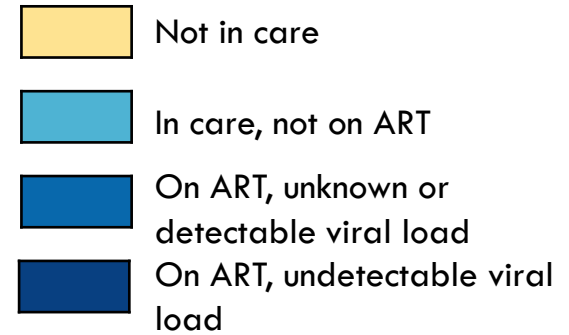
## Health system

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- Median HIV prevalence 35% [29-39]
- Median ART coverage 38% [33-43]



# 4 groups



# 4 groups



Not in care



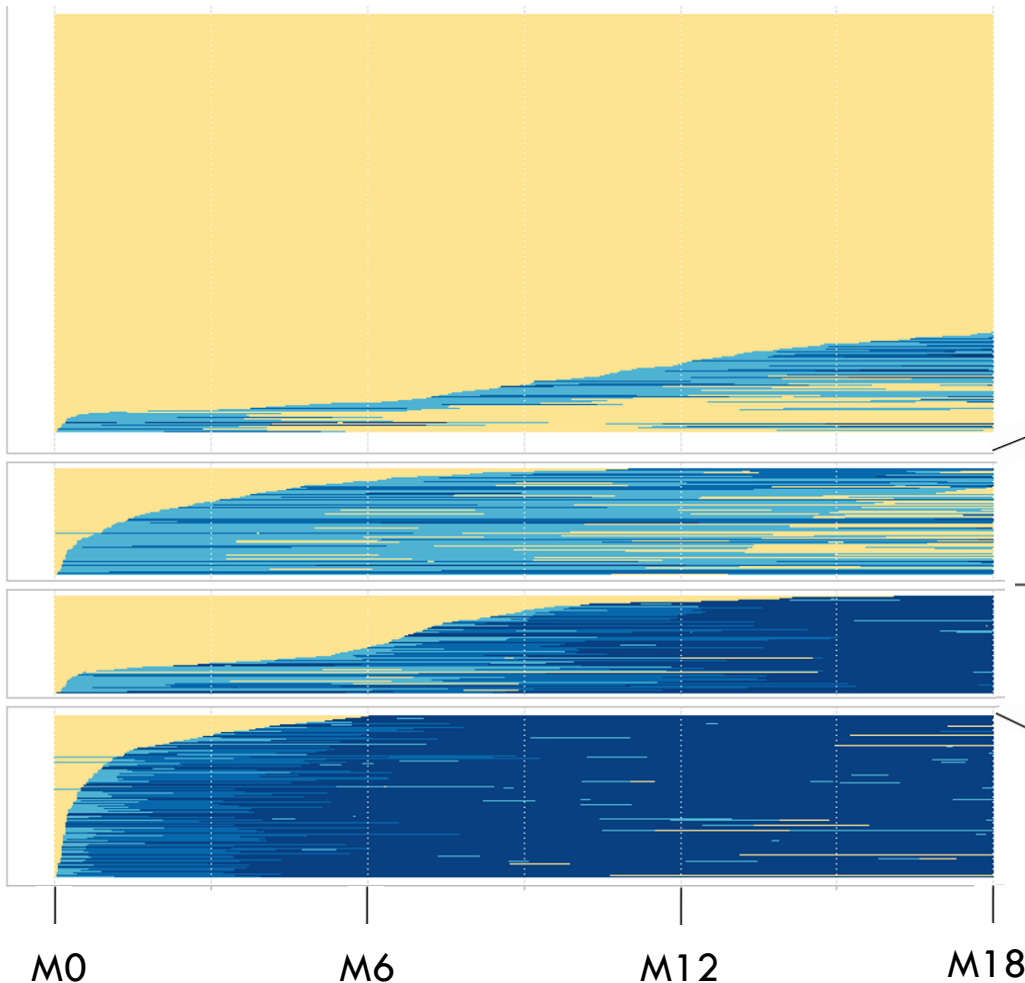
In care, not on ART



On ART, unknown or detectable viral load



On ART, undetectable viral load



Absence of care (n=978, 53%)

Inconstant care (n=250, 14%)

- 50% initiated ART
- 63% exited care

Slow and continuous care (n=230, 12%)

- 6 months to enter care
- 8 months to initiate ART

Rapid and continuous care (n=379, 21%)

- 15 days to enter care
- 1 month to initiate ART

Reference

# Adjusted multinomial regression (n=1,835)

Explicative variables at clinic referral	Absence of care (n= 976) vs Rapid and continuous care (n=379)		Inconstant care (n= 250) vs Rapid and continuous care (n=379)		Slow and continuous care (n= 230) vs Rapid and continuous care (n=379)	
	aOR [CI95%]	p	aOR [CI95%]	p	aOR [CI95%]	p
<b>HIV care status at clinic referral</b>						
Never in care, newly diagnosed in TasP	1		1		1	
Never in care, already diagnosed	0.25 [0.14-0.43]	<0.01	0.31 [0.16-0.60]	<0.01	1.19 [0.49-2.88]	0.70
Previously in care ut lost to follow-up	0.14 [0.08-0.25]	<0.01	0.36 [0.18-0.71]	<0.01	1.40 [0.57-3.43]	0.47
<b>Age (years)</b>						
16-19	1		1		1	
20-29	1.37 [0.69-2.69]	0.37	1.10 [0.48-2.52]	0.82	1.04 [0.42-2.56]	0.86
30-39	0.85 [0.43-1.66]	0.63	0.70 [0.31-1.61]	0.40	0.99 [0.41-2.40]	0.97
40-49	0.67 [0.34-1.32]	0.77	0.45 [0.19-1.07]	0.07	0.57 [0.22-1.42]	0.22
≥ 50	0.40 [0.20-0.78]	<0.01	0.27 [0.11-0.64]	<0.01	0.35 [0.14-0.88]	0.02
<b>Local HIV prevalence (%)</b>						
< 35.3	1		1		1	
≥ 35.3	1.03 [0.77-1.34]	0.87	0.99 [0.77-1.64]	0.55	0.63 [0.42-0.95]	0.02
<b>Distance to a TasP clinic (km)</b>						
< 1	1		1		1	
[1-2[	1.03 [0.61-1.74]	0.91	0.76 [0.46-1.26]	0.26	0.76 [0.46-1.26]	0.26
≥ 2	1.33 [0.81-2.17]	0.24	0.76 [0.46-1.26]	0.26	0.76 [0.46-1.26]	0.26
<b>Distance to a governmental clinic (km)</b>						
<3	1		1		1	
[3,5[	0.63 [0.42-0.95]	0.03	1.04 [0.60-1.80]	0.89	1.36 [0.78-2.38]	0.28
[5,7[	0.47 [0.32-0.69]	<0.01	0.65 [0.38-1.12]	0.12	1.06 [0.62-1.81]	0.82
≥ 7	0.53 [0.34-0.82]	< 0.01	0.75 [0.41-1.38]	0.4	0.88 [0.47-1.64]	0.69
<b>Trial arm</b>						
Control arm	1		1		1	
Intervention arm	0.61 [0.47-0.80]	<0.01	0.31 [0.22-0.44]	< 0.01	0.72 [0.51-1.01]	0.06

- Newly diagnosed  
- < 50 years old  
- Control arm

- < 50 years old  
- Control arm

aOR: adjusted odd ratio, CI95: 95% confidence interval

# Discussion

## » The longitudinal approach of our work:

- » highlighted the high heterogeneity of care trajectories in terms of speed and care utilization patterns
- » identified typical patterns in the trajectories

## » In the era of UTT,

- » entry into care is a complex process that encompasses the multiple care steps of an individual until s/he receives a chronic care
- » the most important factor that promises successful care trajectories is the suppression of the pre-ART period
- » the first medical appointments contacts can be leveraged to encourage people to embrace care in the long run, therefore maximizing ART preventive potential.

# Conclusion

## » Strengths and limits

- + Prospective longitudinal research with a person-centred approach
- Strong hypotheses to build the individual care statuses

To maximise the impact of UTT strategies, differentiated care and support should be scaled-up, especially between diagnosis and ART initiation, which constitutes the main bottleneck of HIV programs in this South African rural study area

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