

# SUPPLEMENTARY MATERIAL

## The impact of population dynamics on the population HIV care cascade: results from the ANRS 12249 Treatment as Prevention trial in rural KwaZulu-Natal (South Africa)

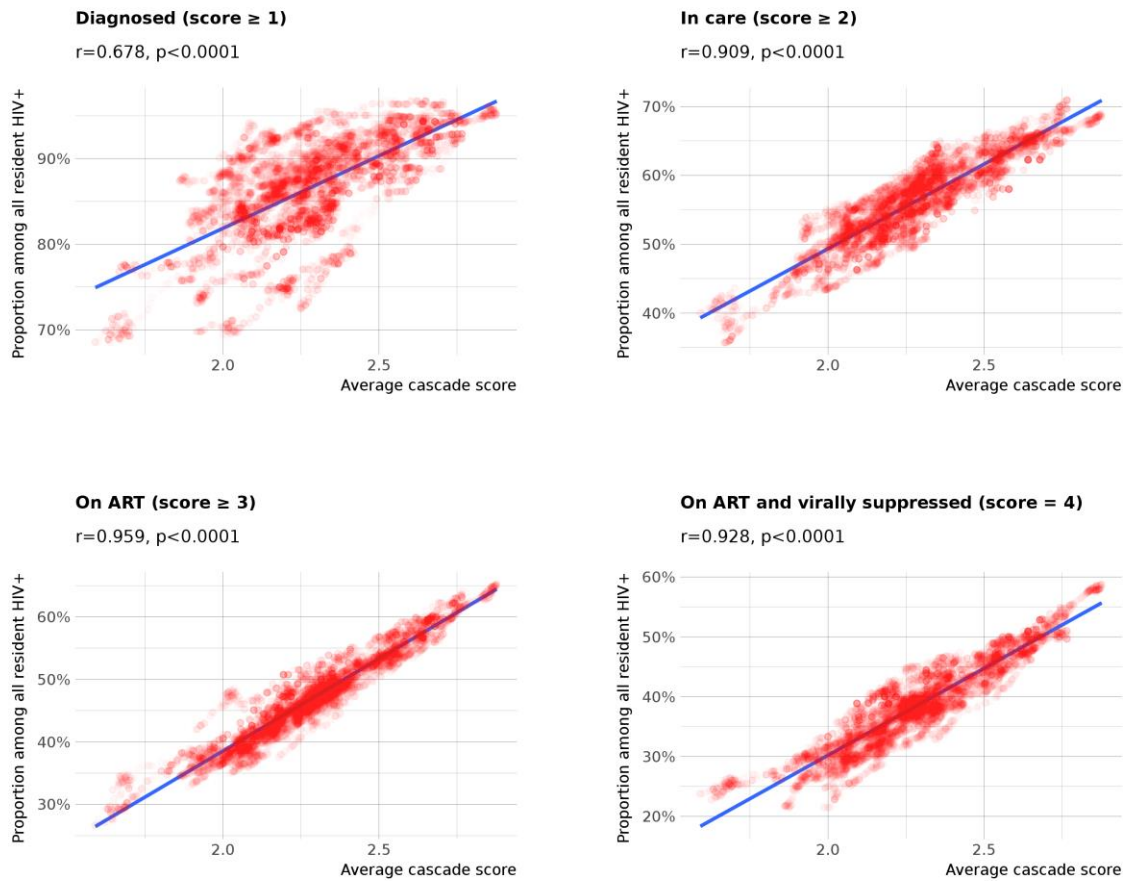
### ANRS 12249 TASP STUDY GROUP

The members of the ANRS 12249 TasP trial group during the course of the study are as follows:

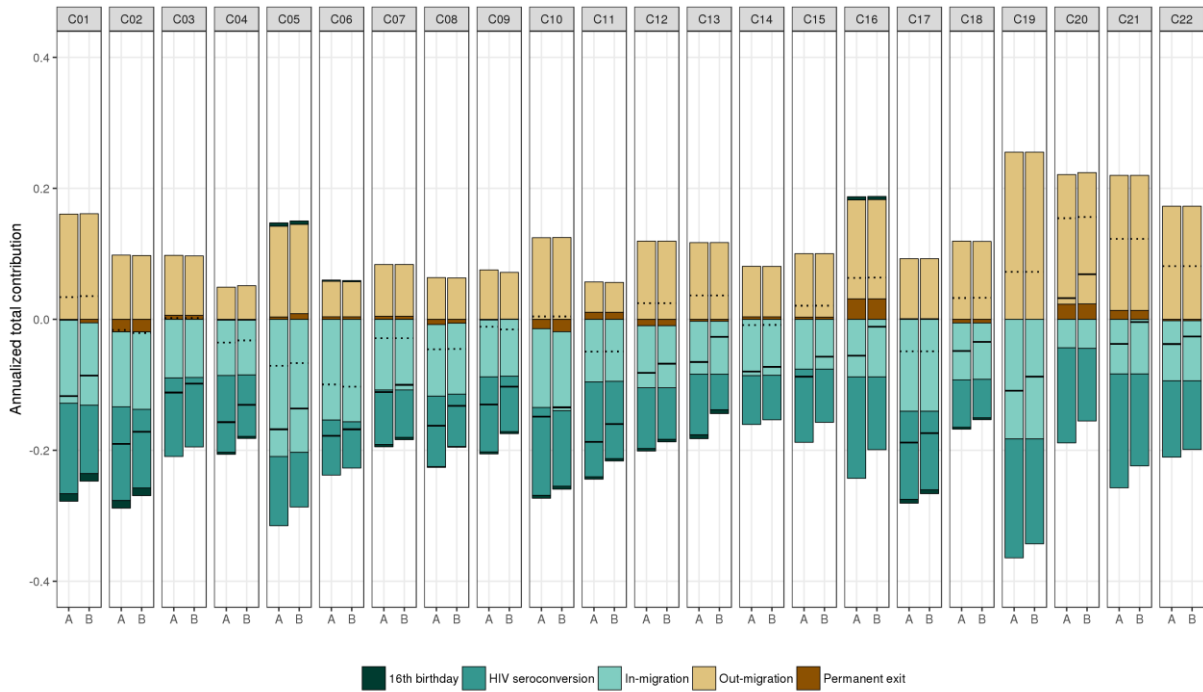
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**Table S1. Sociodemographic characteristics of individuals who entered or exited the resident PLWHIV population, by population change component, ANRS 12249 TasP trial (2012-2016).** Characteristics are computed at the date of entry/exit and by event. Some individuals could contribute several times in this table if they experienced several events (for example, a seroconverter who out-migrated and in-migrated back at a later date). All Chi-square tests are significant ( $p < 0.001$ ).

Column percentage	Entries			Exits	
	16 <sup>th</sup> anniversary (n=29)	HIV seroconversion (n=635)	In-migration (n=2'282)	Out-migration (n=2'763)	Permanent exit (n=216)
<b>Sex</b>					
Female	75.9	82.4	73.7	74.9	55.6
Male	24.1	17.6	26.3	25.1	44.4
<b>Age group</b>					
16-29	100.0	69.4	45.7	49.4	17.6
30-59	0.0	24.6	52.3	49.3	63.4
60 or more	0.0	6.0	2.1	1.3	19.0
<b>Education level</b>					
Primary or less	17.2	19.9	28.4	22.3	51.4
Some secondary	75.9	45.4	42.6	40.9	29.6
At least completed secondary	6.9	34.7	29.1	36.8	19.0
<b>Professional status</b>					
Employed	0.0	7.1	12.3	14.0	7.9
Student	62.1	29.4	6.6	8.3	2.3
Looking for work	13.8	26.8	36.1	39.1	18.1
Other inactive	24.1	36.7	45.0	38.7	71.8
<b>Marital status</b>					
Never been married	100.0	87.3	84.8	88.8	70.4
Engaged	0.0	2.2	6.1	5.2	5.1
Married	0.0	8.8	6.8	4.8	17.1
Divorced / Separated / Windowed	0.0	1.7	2.3	1.2	7.4
<b>Household assets (wealth)</b>					
Low	17.2	27.2	29.9	28.4	33.3
Middle	55.2	45.2	43.7	44.9	40.3
High	27.6	27.6	26.3	26.7	26.4
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>



**Figure S2. Correlation between the average cascade score and proportions of all resident PLWHIV being diagnosed, in care, on ART or virally suppressed at cluster level, ANRS 12249 TasP trial (2012-2016).** Each dot represents a cluster at a given day.  $r$  is the Pearson correlation coefficient and  $p$  the significance of the statistical test evaluating if  $r$  differs from zero.



**Figure S3. Sensitive analysis: comparison of annualized total contribution of population change on cluster average cascade score, by component of population change and per cluster, with (A) and without (B) imputation of potential unobserved seroconversions.** In scenario B, individuals whose first observed HIV status was positive were considered already positive when they entered the trial cohort and individuals whose last observed HIV status was negative were considered still negative at the end of trial follow-up. Dotted lines indicate the sum of the total contribution of in- and out-migration. Black lines indicate the sum of total contribution of all events.