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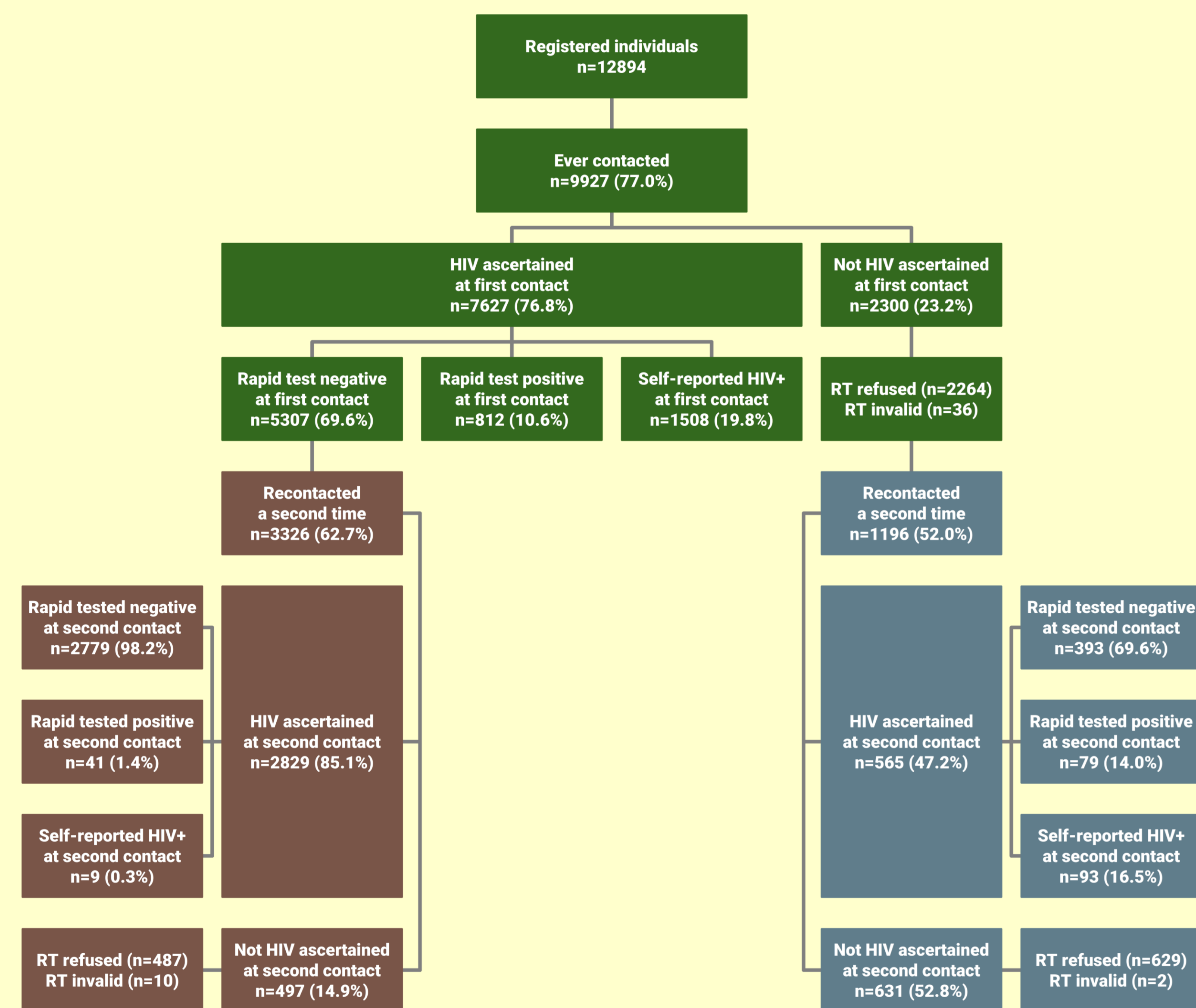
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HIV ASCERTAINMENT THROUGH REPEAT HOME-BASED TESTING IN THE CONTEXT OF A TREATMENT-AS-PREVENTION TRIAL (ANRS 12249 TASP) IN RURAL SOUTH AFRICA

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FLOWCHART



Among the 12,894 registered individuals, 9,927 (77.0%, 95% CI: 72.6% - 80.9%) have been contacted at least once; of these, 76.8% (95% CI: 73.0% - 80.3%) have been HIV ascertained at first contact.

A second contact creates an opportunity to find individuals not ascertained at first contact, the 'ever ascertained rate' increased from 76.8% after one contact to 89.2% after two contacts (+12.4, 5237/5868, 95% CI: 86.7% - 91.3%).

Among individuals tested negative at first contact, repeat ascertainment rate at second contact was 85.1% (95% CI: 82.2% - 87.5%).

CONTEXT

The ANRS 12249 TasP trial evaluates whether HIV testing of all members of a community, followed by immediate antiretroviral treatment (ART) for infected people, will prevent onward sexual transmission and reduce HIV incidence at population level. Ascertaining the HIV status of a high proportion of the population regularly and repeatedly is key to the success of any universal test and treat strategy, as the first step of the HIV cascade.

HIV ascertainment, defined as having taken a rapid HIV test (invalidate and indeterminate results excluded) or self-reporting being HIV-positive, is a process indicator measuring the capacity of the trial to identify the HIV status of the participants and, if required, to refer them to a dedicated trial clinic.

A cluster-randomised trial is being implemented using a phased-approach in the Hlabisa sub-district (KwaZulu Natal, South Africa) where more than 20% of adults are living with HIV. The trial started in March 2012 and is implemented in 10 clusters (5x2) for the first phase to assess the feasibility and acceptability of the test and treat strategies. The HIV testing strategy consists of the implementation of 6-monthly rounds of home-based HIV counselling and testing by dedicated counsellors.

Between March 2012 and March 2014, we have implemented three rounds of home-based HIV counselling and testing in four local communities (clusters) and two rounds in six additional clusters (opened in 2013). At each home visit, individual questionnaires are administered to each consenting participant aged 16 years old or more, who is also offered rapid HIV test.

We report on preliminary results of HIV ascertainment rates at first and second contact, and individual and household-level associated factors.

DISCUSSION / CONCLUSION

Acceptance of regular and frequent HIV testing is key to the community-based efficacy of treatment-as-prevention initiatives (universal test and treat) in settings with very high incidence.

Our preliminary data show that, as long as individuals are successfully re-contacted, acceptability of repeat home-based HIV testing is high (85%) among individuals previously tested negative at home. It is important to stress that only two to three rounds of home-based HIV testing have been implemented to date and it is possible that a participation fatigue will emerge over time.

Our factors analysis show that home-based testing may not capture and enroll young and active populations, especially men. Lower chance of HIV ascertainment among adults aged 20 to 40 years and among the higher educated suggests that this strategy might be less acceptable among people who can possibly access HIV testing elsewhere.

Although statistical significance of the associations at second contact is less, patterns looks similar between ascertainment at first contact and at second contact among individuals not ascertained at first contact.

Differences between those ascertained and not ascertained at second contact among those tested negative at first contact are minimized: one of the keys to engaging individuals on a repeat HIV testing pathway within the trial remains the acceptability of the first home-based HIV test.

The effect of risky sexual behaviour seems to depend on sex: among men, a more self-reported risky behaviour is associated with increased test refusal, while the opposite is observed among women. Additional analyses are required to improve our understanding of the sexual activity and behaviour of these individuals who declined home-based HIV testing despite several attempts at contacting them and were thus never ascertained. This will help assess to what extent repeated home-based HIV testing campaigns could be an efficient strategy to reach the populations most at risk of transmitting HIV, in particular mobile individuals.

Repeat home-based HIV testing appears as one of the effective strategies to achieve a high level of testing coverage in these high prevalence rural areas. However, combined HIV testing approaches could be required to achieve universal testing in socially heterogeneous communities.

FACTORS ASSOCIATED WITH HIV ASCERTAINMENT

	Ascertainment at 1 st contact (n=9,927)			Ascertainment at 2 nd contact among tested negative at first contact (n=3,326)			Ascertainment at 2 nd contact among not ascertained at first contact (n=1,196)		
	%	aOR	95% CI	%	aOR	95% CI	%	aOR	95% CI
Sex	***	**		**	***		-		
♂ men	74.1	1		82.3	1		46.6		
♀ women	78.1	2.52	1.54-4.11	86.2	1.29	1.05-1.59	47.5		
Age at 1st contact	***	***		**	***		***	**	
15-19	78.5	1		81.7	1		53.8	1	
20-29	70.4	0.66	0.55-0.79	81.2	0.94	0.70-1.26	37.7	0.63	0.41-0.98
30-39	77.0	0.77	0.62-0.95	83.9	1.12	0.74-1.68	54.6	1.16	0.70-1.91
40-49	85.1	0.95	0.74-1.23	87.1	1.44	0.98-2.11	48.3	0.61	0.34-1.10
50-59	85.4	0.89	0.68-1.18	87.5	1.49	1.05-2.11	50.0	0.56	0.29-1.05
60+	86.3	0.98	0.75-1.30	87.7	1.55	1.15-2.08	61.7	0.96	0.52-1.78
missing	39.2	0.57	0.41-0.79	90.6	2.24	0.86-5.83	23.4	0.52	0.20-1.37
Educational level	***	***		**			***	***	
completed secondary / higher	71.8	1		81.5			37.6	1	
some secondary	78.5	1.32	1.15-1.50	83.2			54.1	1.89	1.33-2.69
primary or less / don't know	87.6	2.23	1.87-2.67	87.4			61.0	2.81	1.72-4.59
missing	9.8	1.55	0.75-3.22	77.8			4.2	0.87	0.14-5.54
Household's assets score category	-			-			*		
low	77.2			85.7			51.3		
middle	77.0			84.4			47.8		
high	75.8			85.1			38.9		
missing	86.8			70.0			25.0		
HIV test before first contact ‡	***	***							
< 6 months	68.4	1							
6 to 12 months	85.3	2.57	2.18-3.03						
> 12 months	86.0	2.54	2.22-2.90						
never tested	81.2	1.67	1.42-1.96						
missing / refused	19.1	1.69	1.05-2.71						
Sexual partner(s) last 12 months	***	**		-			***		
2 sexual partners or more	75.5	1		81.9			43.1		
1 sexual partner†	80.7	♂ 1.34 ♀ 0.55	1.08-1.67 0.35-0.85	85.7			49.4		
none / never had sex	82.0	♂ 2.25 ♀ 0.39	1.38-3.68 0.24-0.63	85.5			52.8		
missing / refused / don't know	44.9	♂ 0.93 ♀ 0.35	0.58-1.50 0.21-0.59	80.6			30.4		
Condom use at last intercourse	***	**		-			***		
yes	76.8	1		82.8			43.8		
no †	82.1	♂ 0.97 ♀ 1.08	0.75-1.25 0.92-1.26	86.1			52.3		
never had sex †	78.0	♂ 3.21 ♀ 1.53	1.74-5.91 1.10-2.14	83.0			49.1		
missing †	42.1	♂ 0.74 ♀ 1.08	0.37-1.49 0.77-1.52	83.0			26.3		
Knowing someone HIV+ in family	***	***		*			***	*	
no	79.1	1		84.3			49.8	1	
yes	83.4	1.29	1.14-1.46	87.3			50.4	1.04	0.77-1.40
missing	1.8	0.01	0.01-0.02				1.5	0.03	0.00-0.43

‡: HIV ascertainment rate within modality (univariable analysis). aOR: adjusted odd ratio (multivariable analysis). CI: confidence interval (add ratio). - p > 0.05 ; * 0.01 < p ≤ 0.05 ; ** 0.001 < p ≤ 0.01 ; *** p ≤ 0.001 (Chi² test for univariable; Wald or log likelihood test for multivariable) † stratified by sex (multivariable analysis); ‡ variable used only for first contact analysis.
 Only variables with p ≤ 0.20 in univariable analysis have been included in multivariable logistic models using a step-by-step backwards method (Wald criterion). Interactions between sex and others risk factors were tested and potential confounding were checked. Clusters effect was taken into account by using random effects models (except for first model who did not converge).