

Effectiveness of Partner Services for HIV in Kenya: A Cluster Randomized Trial

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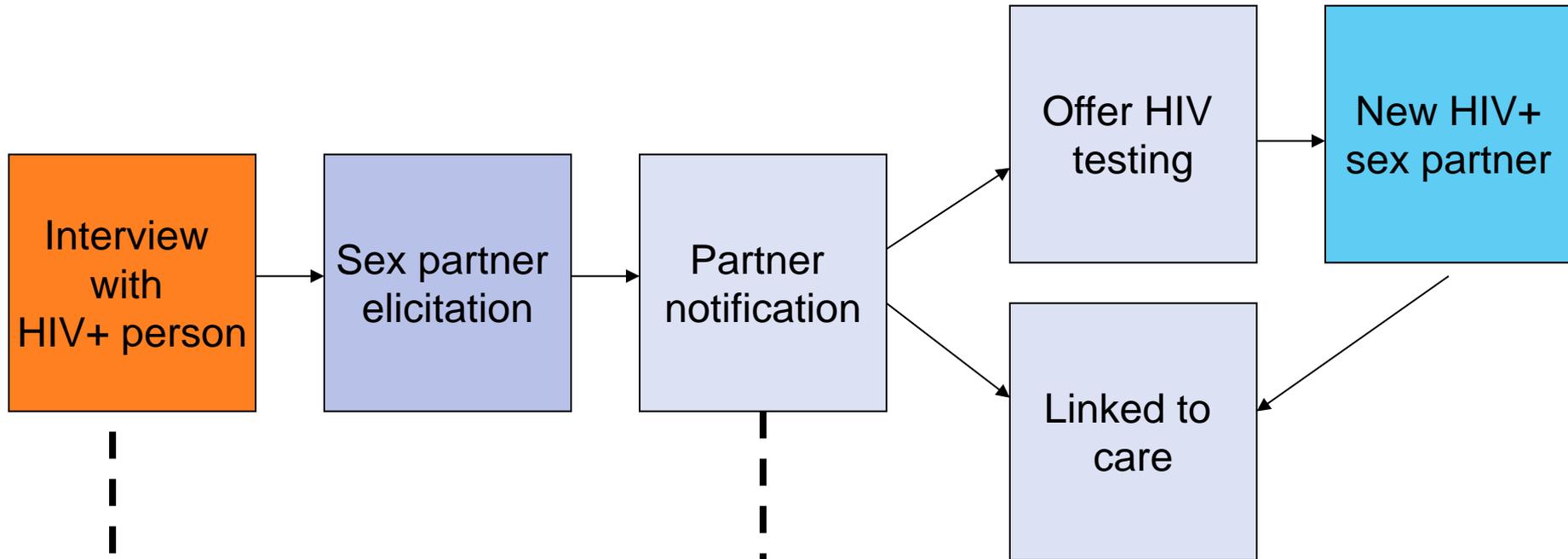


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Conflict of Interest: Peter Cherutich *has no financial relationships with commercial entities to disclose.*

Partner Services Conceptual Framework



Index Case

Strategies

- Patient referral (self discloses HIV+)
- Contract referral
- ***Provider referral (assisted partner services[aPS])***

HIV Partner Services: Current Evidence and Practice

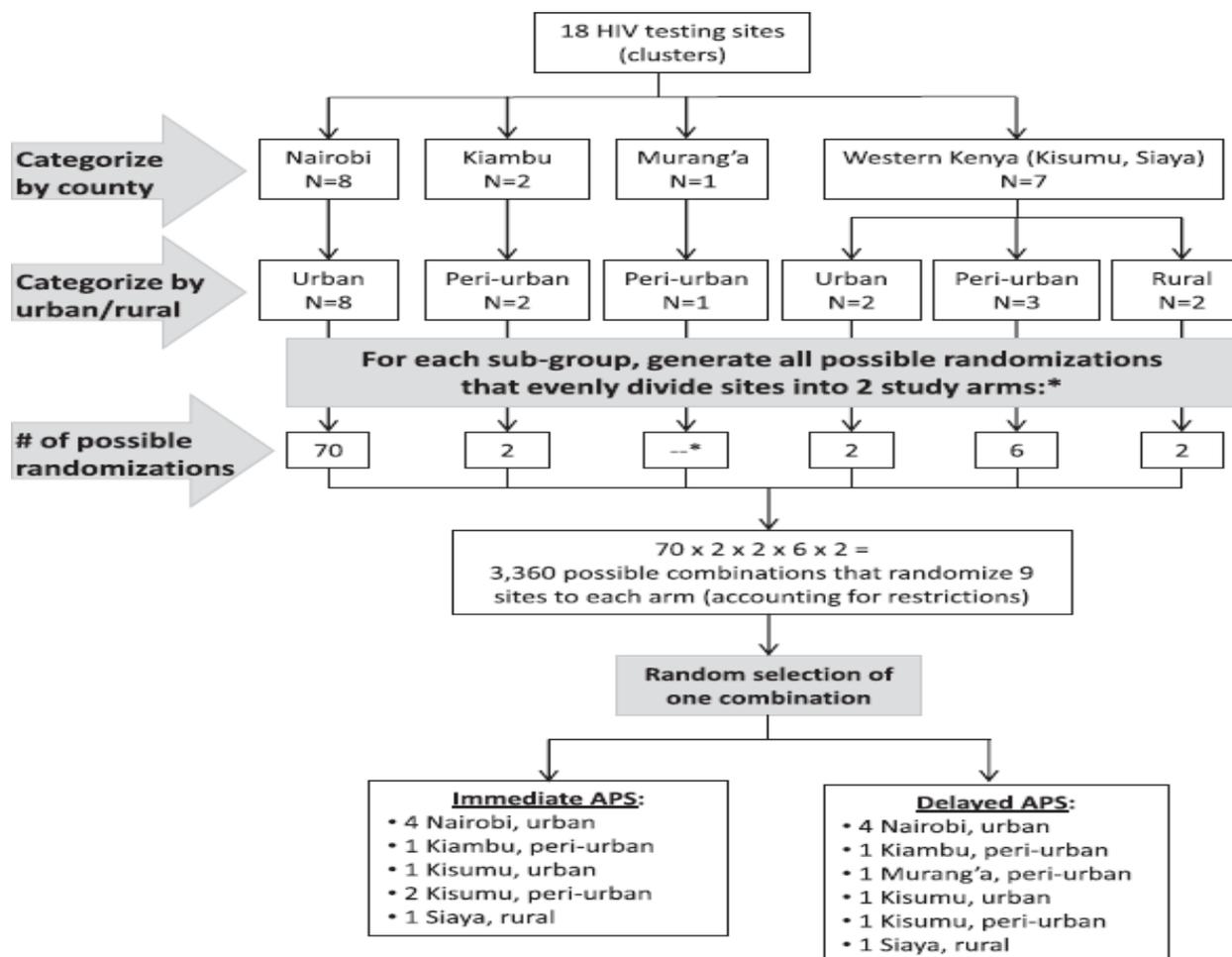
- United States
 - Increased notification rates (50% versus 6.5%, p value <0.001)
- Africa (Malawi)
 - Doubled rates of HIV testing
 - Contract/provider vs patient referral (51% versus 24%)
- Public health practice in US & Europe
 - Less so in Africa
- More data needed
 - Risk of social harms

Methods: Study Aims and Population

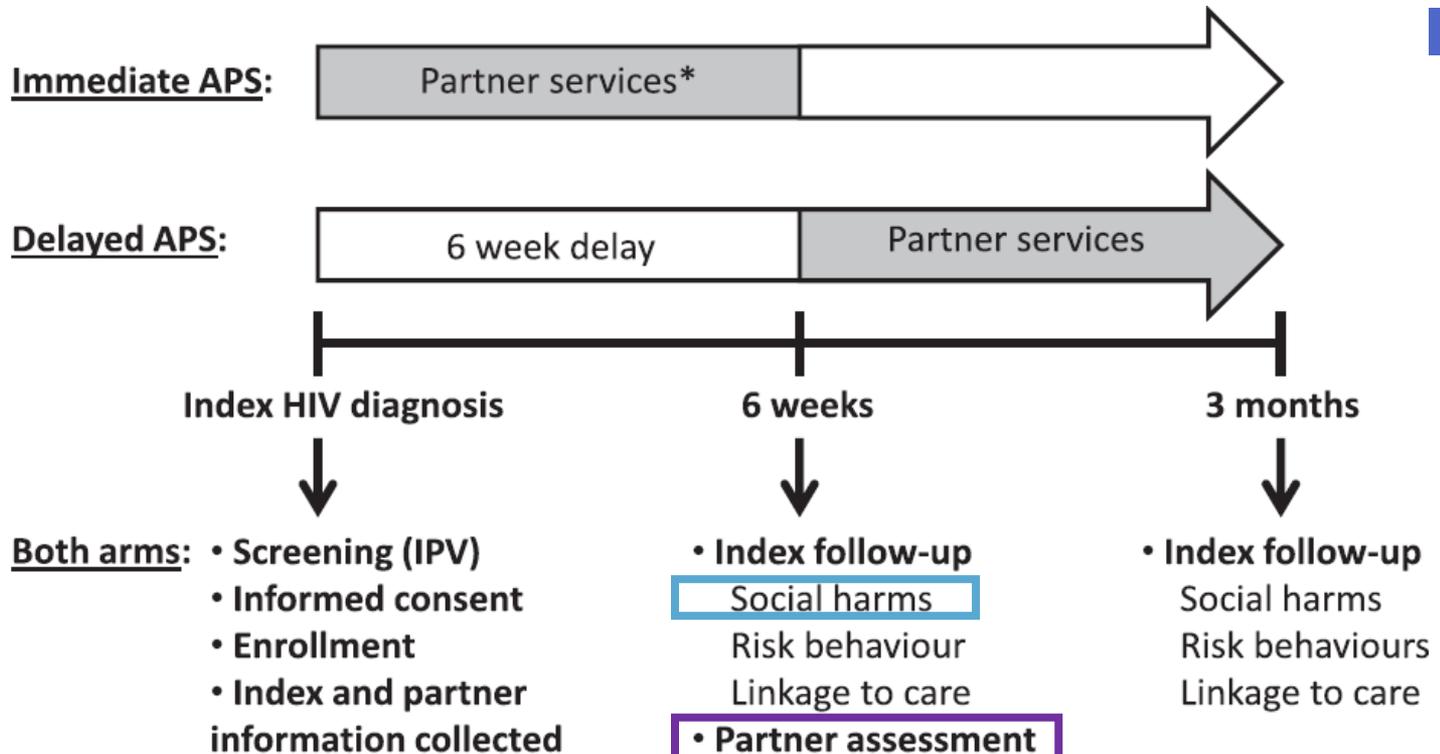
- Primary: Compare the effectiveness of immediate versus delayed assisted partner services in increasing rates of:
 - HIV testing, case-finding and enrollment in HIV care of sexual partners
- Secondary: Evaluate regional and urban/rural differences in:
 - Number of Index Cases Needed to Interview (NNTI) to test, identify HIV infection and enrolment in care for sexual partner
- Tertiary: Compare the incidence of intimate partner violence

Methods: Study Design

Wamuti et al. Assisted partner notification services to augment HIV testing and linkage to care in Kenya: study protocol for a cluster randomized trial; *Implementation Science*, 2015 Feb 13;10:23



Methods: Study Procedures and Outcomes



* **Partner services** include:

- Partner tracing and enrollment
- HIV testing and counselling
- Linkage of HIV-positive partners to HIV care

Statistical Analysis

- Sample size- 60 index cases in each of 18 clusters to detect a 2-fold difference in testing rates assuming $k=0.25$
- Generalized estimating equations with Poisson link
 - Primary outcomes: Offset by number of index cases and accounting for clustering by study site and index case
 - Secondary outcomes: Offset by number of sex partners and accounting for clustering by study site

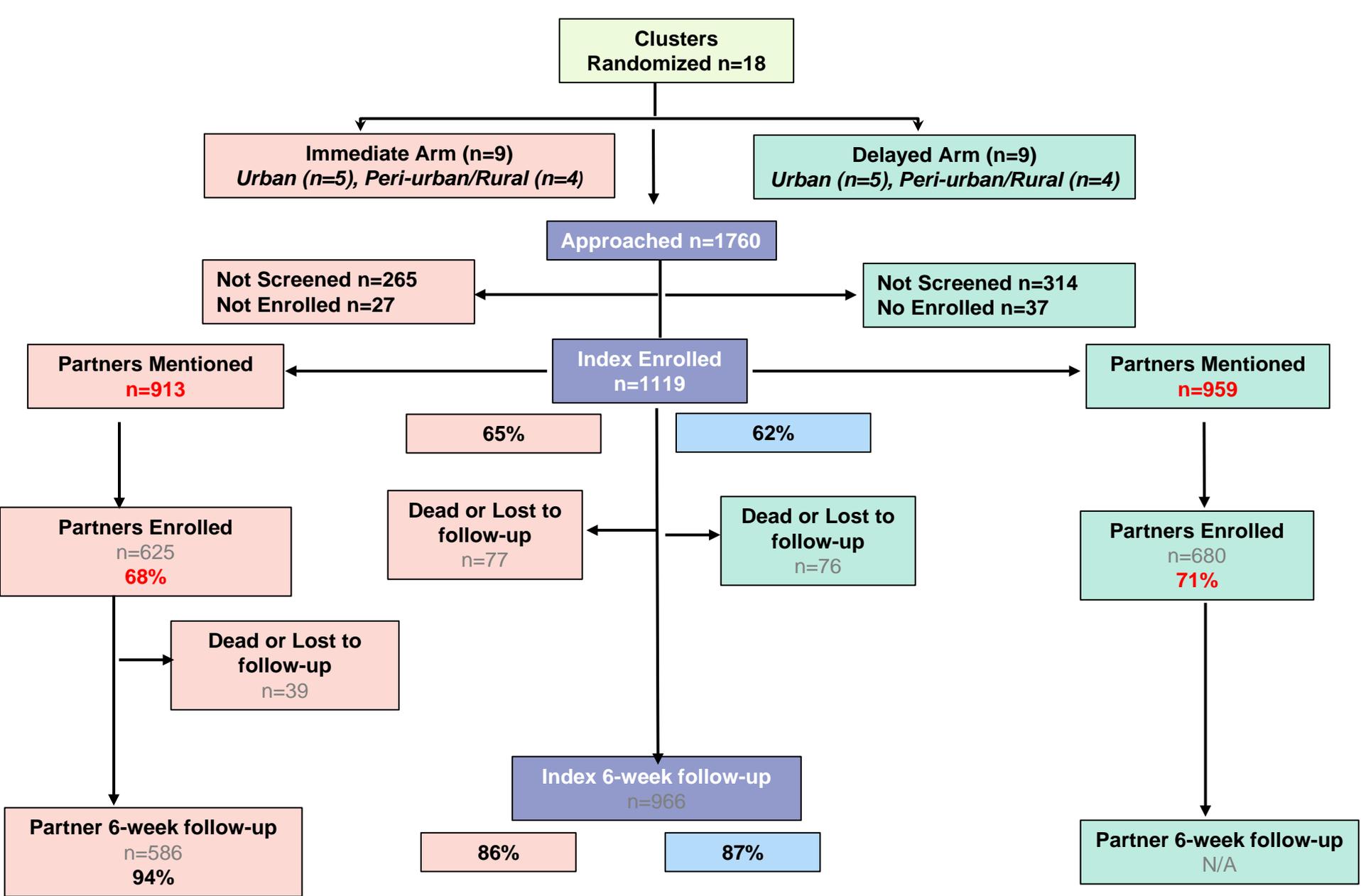


Table 1: Baseline characteristics for enrolled index participants (N=1119)

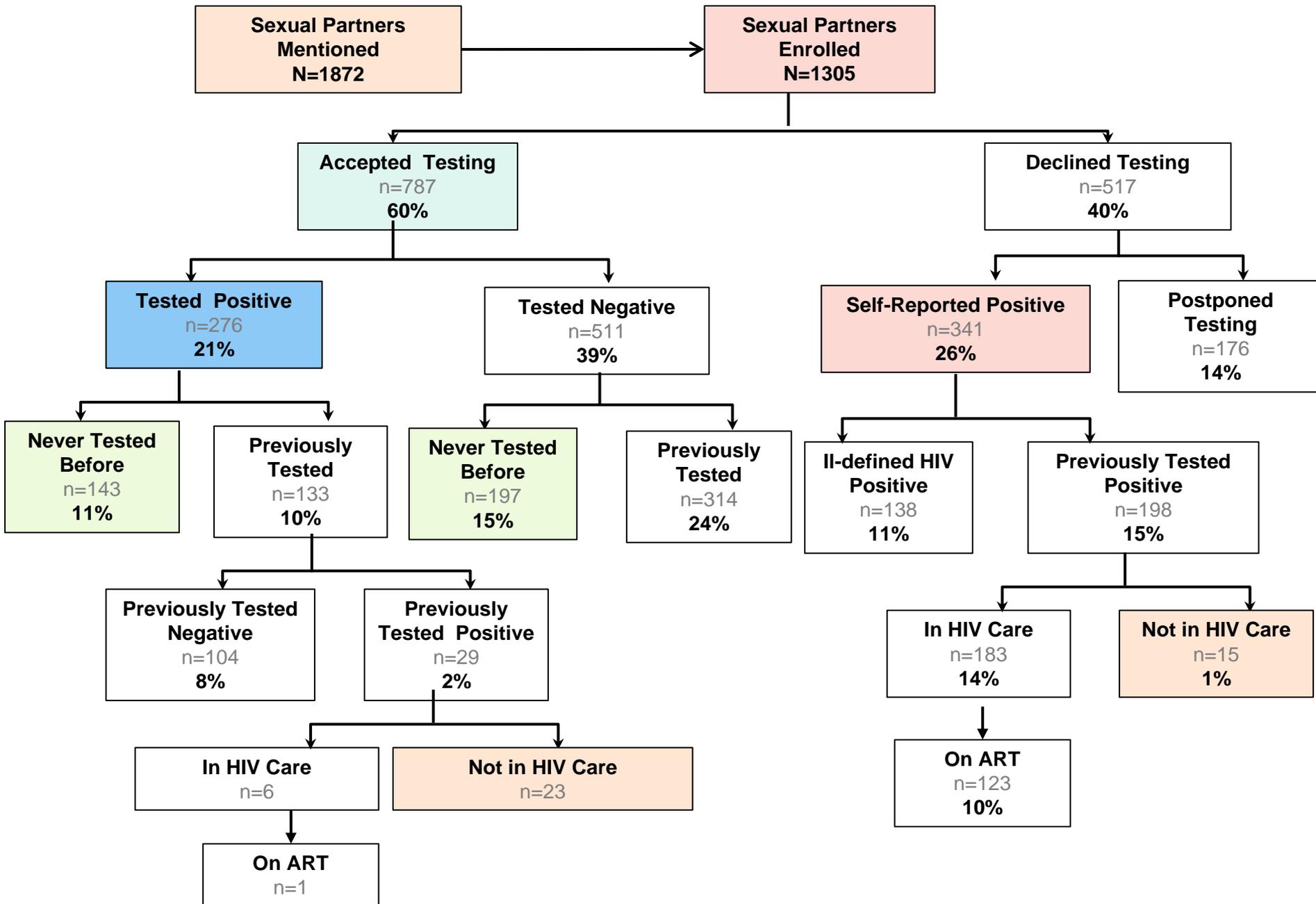
<i>Among those who provided sexual history</i>	<u>Immediate Arm(n=550)</u>		<u>Delayed Arm (n=569)</u>	
	<u>Median (IQR) or n (%)</u>		<u>Median (IQR) or n (%)</u>	
Age (years)	30	(25-37)	31	(26-38)
Sex (Female)	322	(57)	368	(65)
Married Monogamous	305	(55)	308	(54)
Ever Tested for HIV	379	(70)	366	(65)
Heterosexual	536	(98)	561	(99)
Self-reported negative last HIV test	257	(46)	264	(46)
Self-reported positive last HIV test	112	(20)	93	(17)
Testing due to HIV Positive partner	18	(3)	16	(3)
Lifetime sexual partners	4	(2-6)	4	(3-8)
% naming only one sexual partner [□]	547	(60)	566	(60)
Nairobi/Central Region	294	(54)	388	(68)
Urban/Peri-Urban	487	(88)	508	(89)
Rural	63	(12)	61	(11)

Table 3: Effectiveness of aPS on HIV testing outcomes

Outcome	Immediate Arm(N=550 index cases)	Delayed Arm(N=569 index cases)	IRR (95% CI)
	Number (Rate per index)		
Number tested [§]	392 (0.713)	85 (0.149)	4.83 (3.66-6.39)
Number newly tested [§]	81 (0.147)	4 (0.007)	14.80 (5.35-40.93)
Number newly HIV + [§]	136 (0.247)	28 (0.049)	5.00 (3.18-7.86)
Newly enrolled in HIV Care	88 (0.160)	19 (0.033)	4.43 (2.64-7.43)

IRR=Incidence Rate Ratio. CI=Confidence Interval. IRR estimated using generalized estimating equations Poisson regression with independent correlation matrix and index cases as offset variable

[§] Number tested at enrollment in the Immediate arm compared to the number tested between Index and Partner enrollment in the Delayed arm





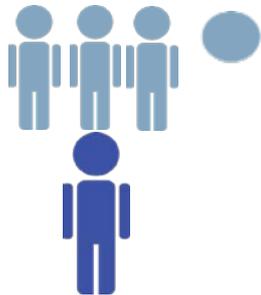
4.2 index cases to find...

NNTI: Number Needed to Interview

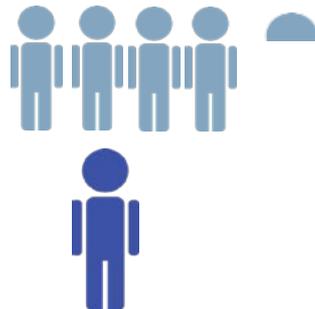


...1 partner test positive

Western NNTI=3.34

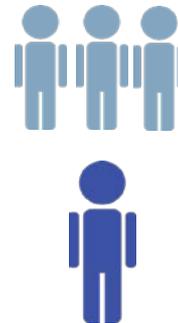


P=<0.001

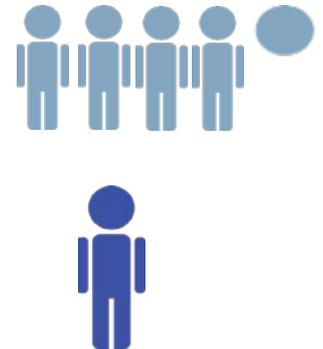


NNTI=4.77 **Nairobi/Central**

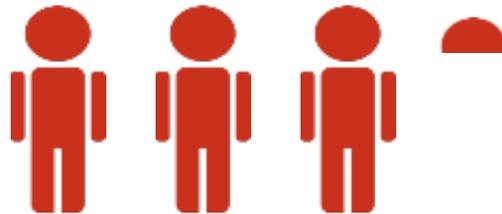
Rural NNTI=2.95



P=0.02



NNTI=4.29 **Peri-Urban/Urban**



3.3 index cases to find...

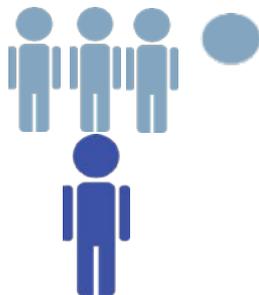
NNTI: Number Needed to Interview



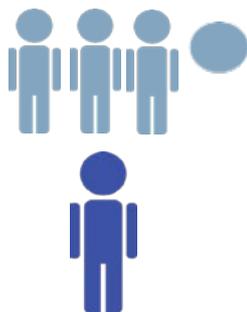
...1 partner newly testing

Western

NNTI=3.55



P=0.143

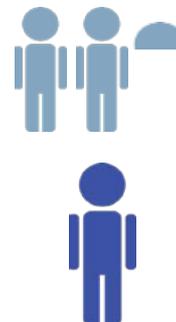


NNTI=3.22

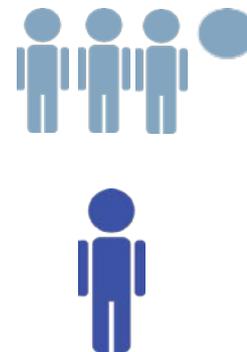
Nairobi/Central

Rural

NNTI=2.25



P=<0.001



NNTI=3.55

Peri-Urban/Urban

Intimate Partner Violence (IPV)

- At baseline 126 (11.3%) self-reported to be at moderate risk of IPV
 - 67(12.2%) immediate arm and 59(10.4%) delayed arm
- At 6 weeks, there were 37(3.3%) new IPV and 54(4.8%) repeat IPV
- Two of these were possibly study related
 - One in each study arm
 - However, these incidents occurred before notification of partner

Discussion

- First cluster randomized trial of aPS services in Africa
 - ▣ Detailed sexual history
 - ▣ Community tracing and testing of partners
- Partner services are effective and feasible in Africa
 - ▣ Validates previous African studies
- aPS is not associated with IPV but this question needs further evaluation

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