

HIV Treatment as Prevention: How Clinical and Public Health Priorities are in Sync

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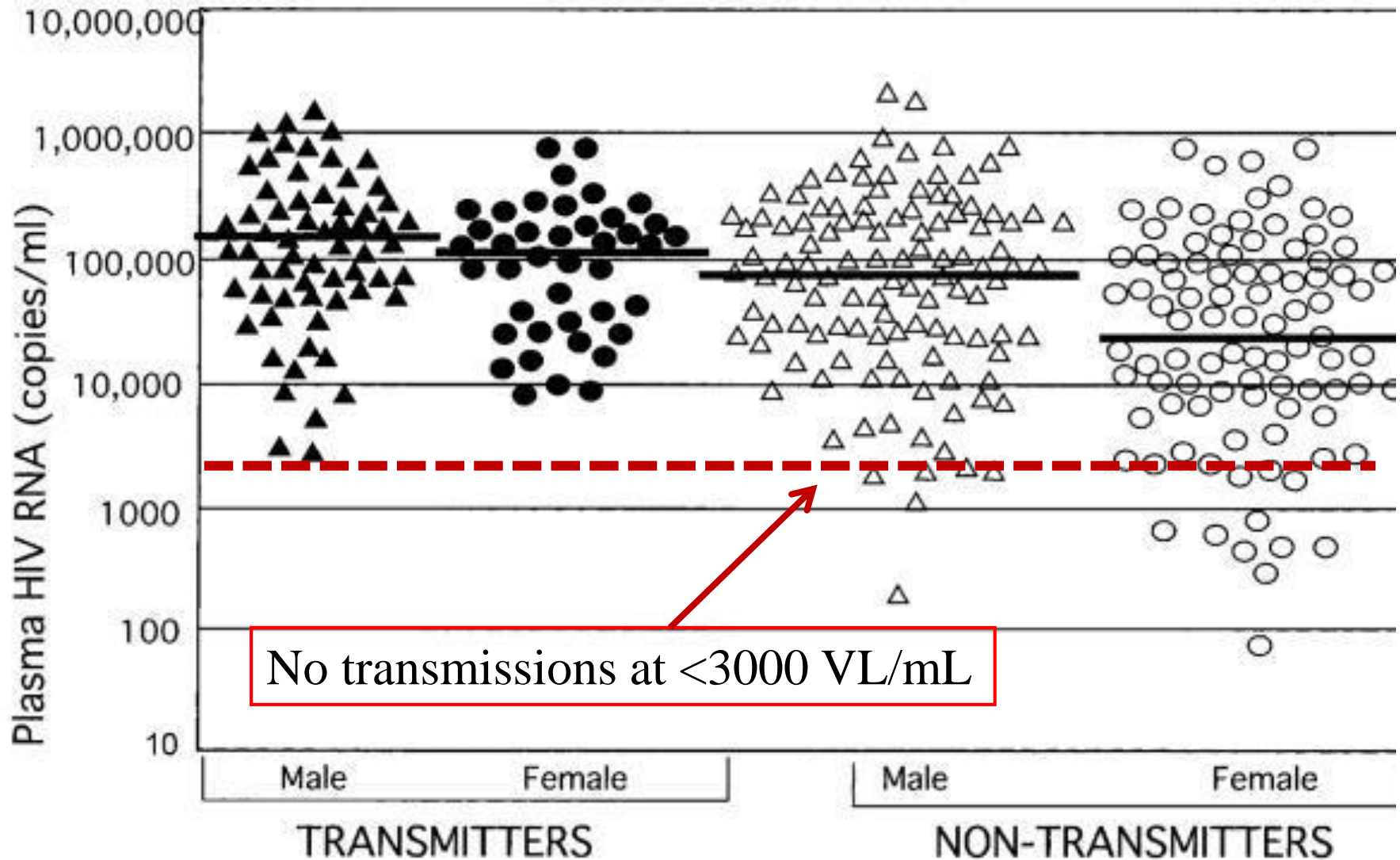
Global Health & Innovation Conference

(Unite For Sight)

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REF: Perriat D, et al. Comparative assessment of five trials of universal HIV testing and treatment in sub-Saharan Africa. *JIAS* 2018

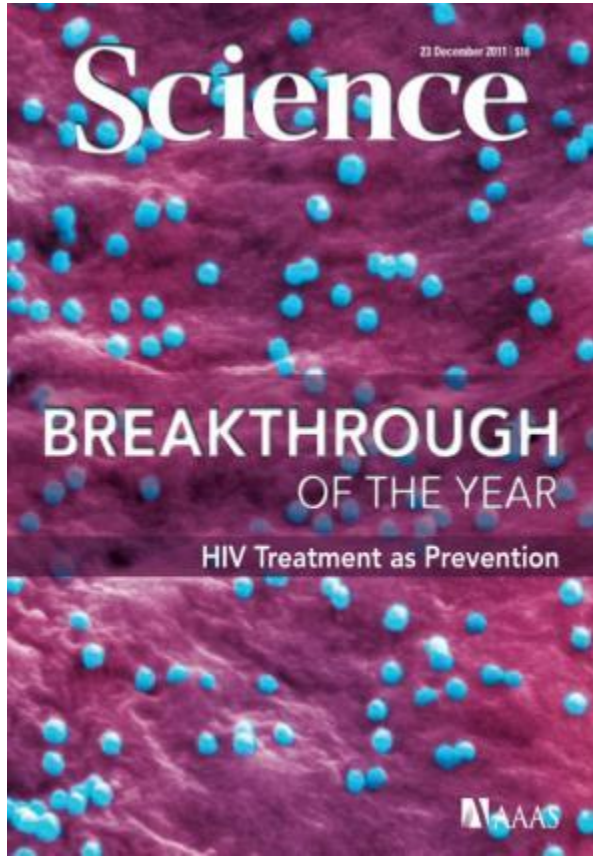
Zambian discordant couples (linked tx only)



No transmissions at <3000 VL/mL

REF: Fideli U, Allen S, Musonda R, *et al.* *AIDS Res Hum Retrovir* 2001;
Same result as Quinn TC, *et al.* *N Engl J Med* 2000 from Uganda.

Selected studies for TasP - I



- HTPN 052
 - Cohen MS, Chen YQ, et al; HPTN 052 Study Team. *N Engl J Med* 2016; 375:830-9 and *N Engl J Med* 2011; 365:493-505
 - Grinsztejn B, Hosseinipour MC, et al; HPTN 052-ACTG Study Team. *Lancet Infect Dis* 2014; 14:281-90
 - Walensky RP, Ross EL, et al, Freedberg KA. *N Engl J Med* 2013; 369:1715-25

Partner Infections (ITT)

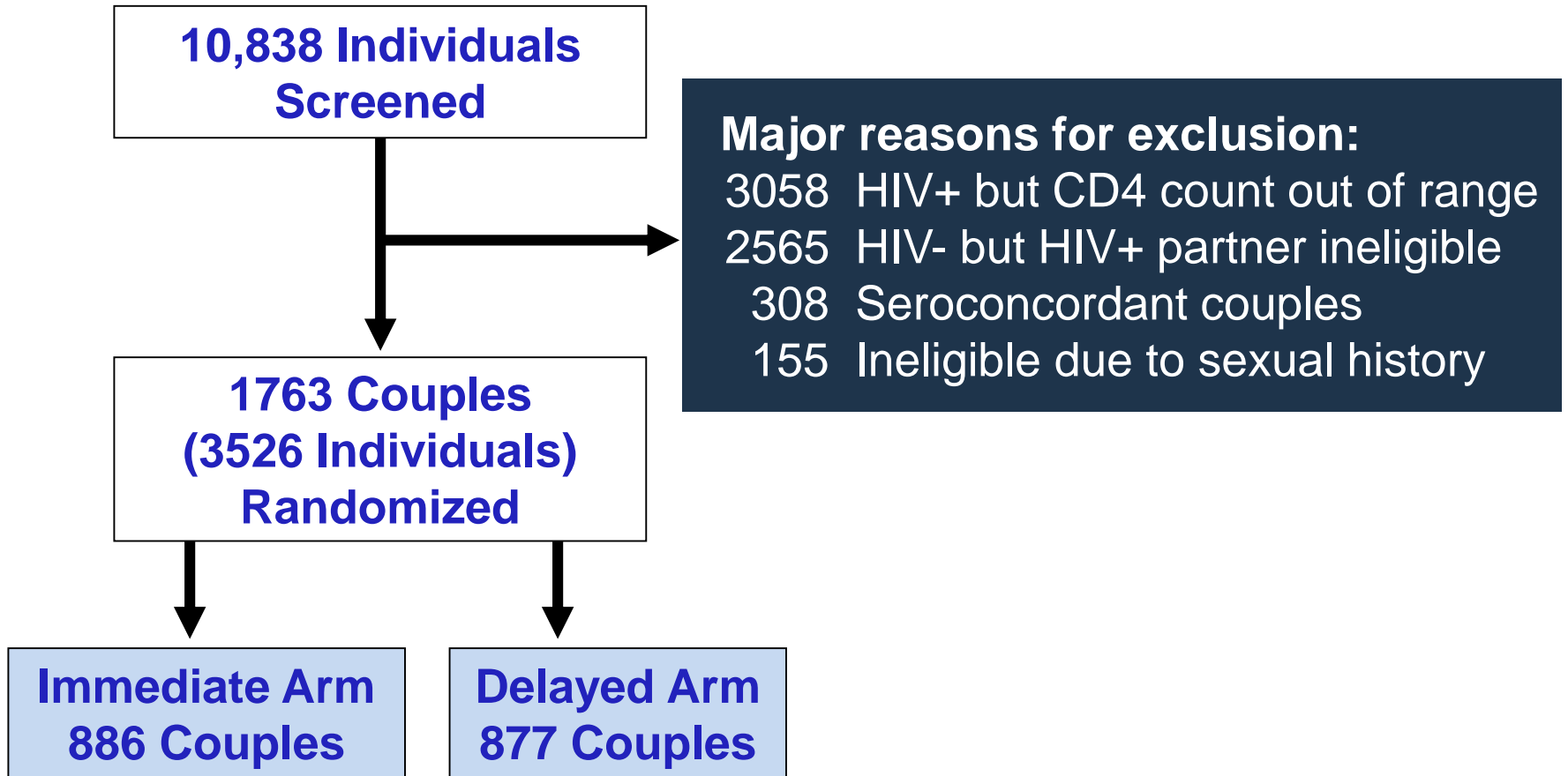
	April 2005-May 2011			May 2011-May 2015			Overall		
	PY f/u	All partner infections # (rate)	Linked partner infections # (rate)	PY f/u	All partner infections # (rate)	Linked partner infections # (rate)	PY f/u	All partner infections # (rate)	Linked partner infections # (rate)
Total	3482	46 (1.32)	37 (1.06)	5012	32 (0.64)	9 (0.18)	8494	78 (0.92)	46 (0.54)
Early arm	1751	4 (0.23)	1 (0.06)	2563	15 (0.59)	2 (0.08)	4314	19 (0.44)	3 (0.07)
Delayed arm	1731	42 (2.43)	36 (2.08)	2449	17 (0.69)	7 (0.29)	4180	59 (1.41)	43 (1.03)
Rate ratio		0.09	0.03		0.86	0.28		0.31	0.07
Risk reduction		91%	97%		14%	72%		69%	93%

Rate = # of events / 100 PY
 Risk reduction = 1 – rate ratio

Linked = index-to-partner transmission likely

Selected studies for TasP - II

- ANRS TasP (South Africa)
 - Iwuji CC, Orne-Gliemann J, et al; ANRS 12249 TasP trial group. *PLoS Med* 2016; 13:e1002107
- Search Study (Kenya, Uganda)
 - Petersen M, Balzer L, et al, Havlir D. *JAMA* 2017; 317:2196-2206
- Botswana Combination Prevention Project (*Ya Tsie*): Botswana MoH, Harvard School of Public Health, CDC
 - Gaolathe T, Wirth KE, et al; Botswana Combination Prevention Project study team. *Lancet HIV* 2016; 3:e221-30
- Project Shikamana (Iringa, Tanzania)
 - Kerrigan D, Mbwambo J, et al. *JAIDS* 2017; 74(suppl 1):S60-8
- Max ART (Swaziland)
 - Walsh FJ, Bärnighausen T, et al, Okello V. *Trials* 2017; 18:383



Selected studies for TasP - III

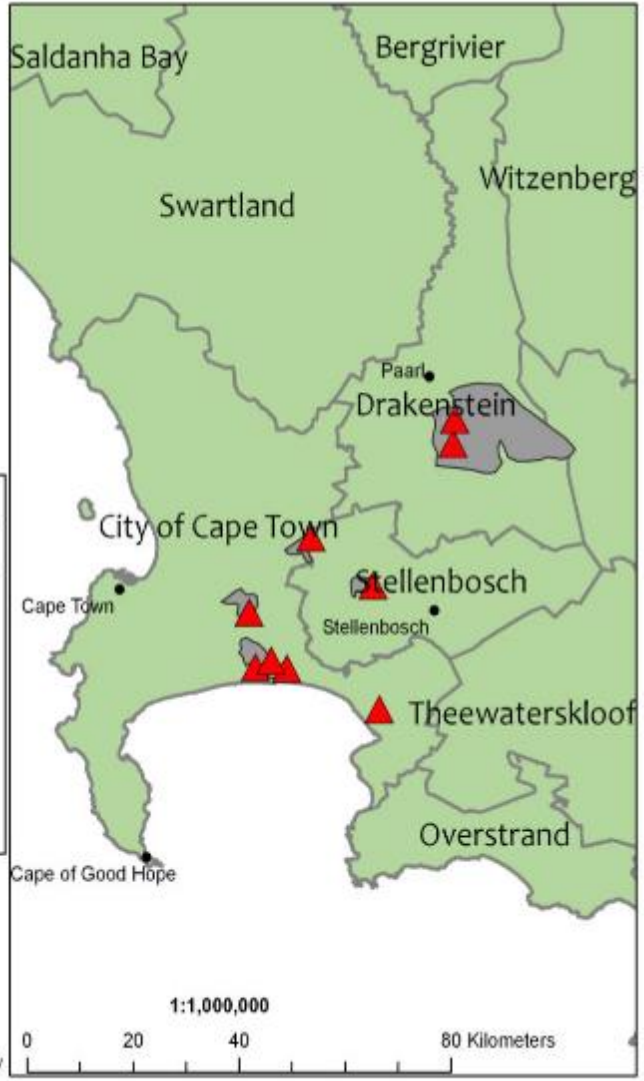
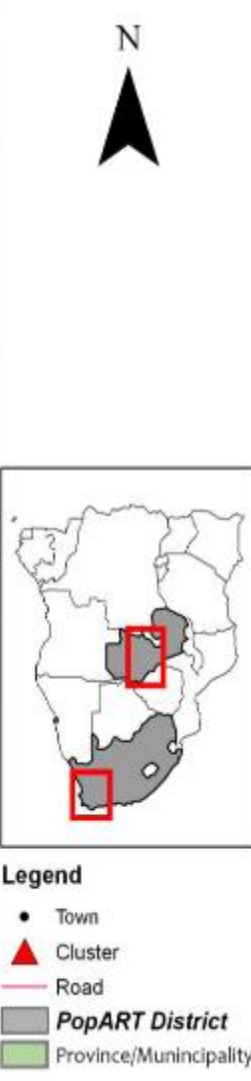
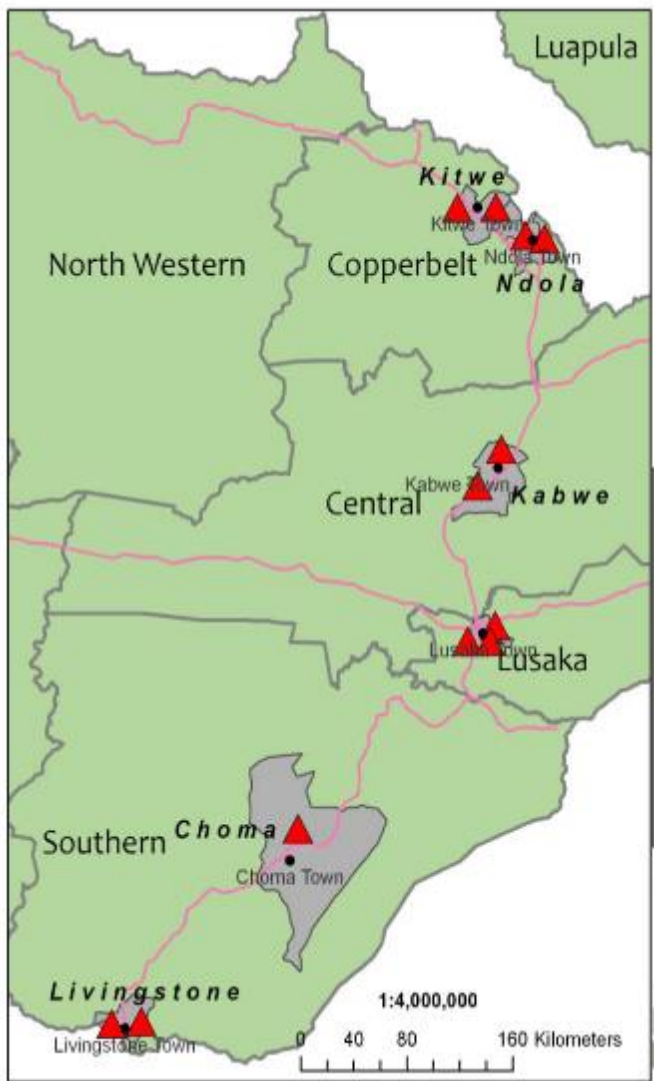


HPTN 071 / PopART

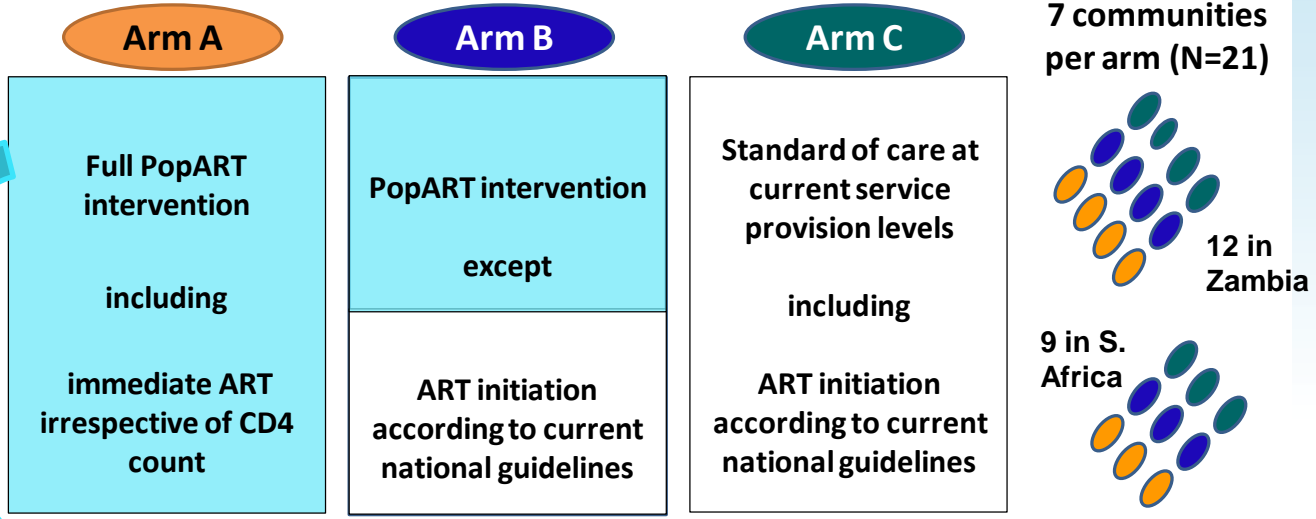
- Hayes R, Floyd S, et al; HPTN 071 (PopART) Study Team. *PLoS Med* 2017; 14:e1002292
- Shanaube K, Schaap A, et al; HPTN 071 (PopART) Study Team. *AIDS* 2017; 31:1555-64
- Hayes R, Ayles H, et al; HPTN 071 (PopART) Study Team. *Trials* 2014; 15:57
- Vermund SH, Fidler SJ, et al; *JAIDS* 2013; 63 (suppl 2): S221-7.

HPTN 071 / PopART

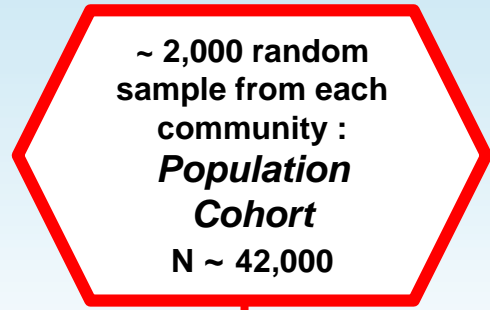
- Can we increase HIV testing and ART coverage/adherence enough to actually drop community-level HIV transmission?
 - WHO/UNAIDS 90-90-90 goal by 2020
- A cluster randomized trial, but in real world conditions



3 arm cluster-randomised trial with 21 communities



Total Population ~ 1M



Primary outcome: HIV incidence at 36 months

PopART intervention package

- Annual rounds of Home Based Voluntary HIV Testing by Community HIV-care Providers (CHiPs)
- Health promotion, Active Referral and/or Retention in Care support by CHiPs for the following:
 - Voluntary Medical Male Circumcision (VMMC) for HIV negative men
 - Prevention of Mother to Child Transmission (PMCT) for HIV positive women
 - HIV treatment and care for all HIV positive individuals
 - Promotion of sexual health and TB services
 - Condom provision
- ART irrespective of CD4-count or immune-status provided at the local health centre in Arm A

Electronic data capturing (EDC) by CHiPs (Community HIV-care Providers)

- Enumerate households
- HIV education
- Self-reported status/ART-number
- Offer HIV testing
- Condom Provision
- Referral for care at clinic
 - HIV/ART
 - PMTCT
 - TB
 - STI
 - VMMC
- Active follow-up



PUBLIC RELEASE: 4-MAR-2019

HIV prevention study finds universal 'test and treat' approach can reduce new infections

NIH-sponsored trial suggests home-based HIV testing and referral to care works at population level

NIH/NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES

New HIV infections declined by 30 percent in southern African communities where health workers conducted

The HPTN 071 (PopART) study involved >1 M people living in 21 communities in Zambia and South Africa, making it the largest HIV prevention trial to date.

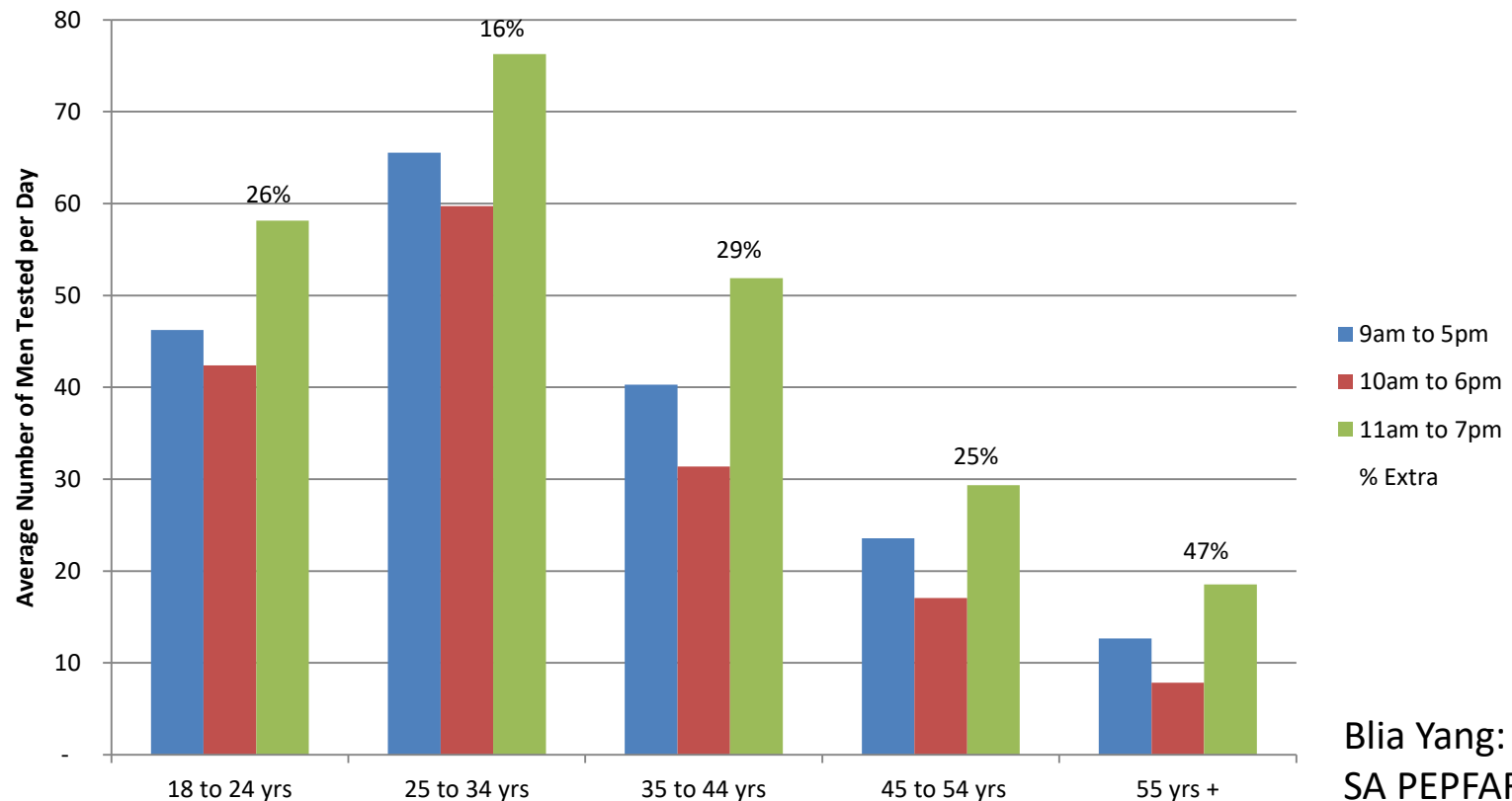
The study measured the effects of two HIV combination prevention strategies offering HIV testing to people in their homes annually, with linkage to HIV care and treatment at the local health facility for those living with HIV.

A to C arm: No difference seen

B to C arm: Highly significant 30% decrease in new HIV infections with a prevention strategy where HIV treatment was started according to in-country guidelines

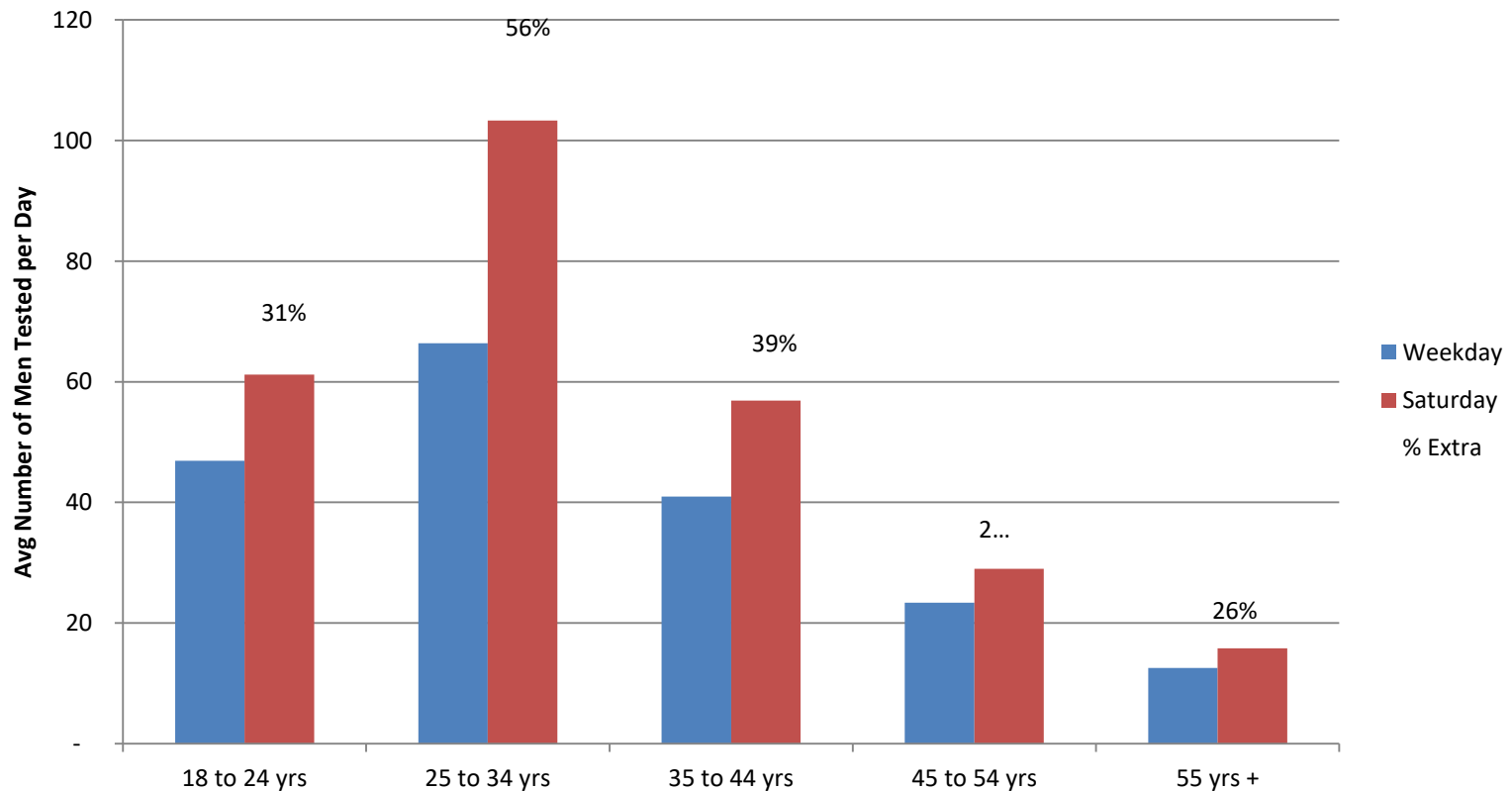
Where are the men? -- not home during the day

16% MORE MEN (25 TO 34 YRS) & 29% MORE MEN (35 TO 44 YRS) ARE REACHED DURING 11AM - 7PM COMPARED TO 9AM - 5PM



Find men at a time and day that suits them.....

56% MORE (25 TO 34 YRS) & 39% MORE (35 TO 44 YRS) ARE REACHED ON A SATURDAY



Community outreach: What worked.....what didn't?

- Lots of people came
- Accessed many health services
- Registration of people into their households very challenging and time consuming
- Very costly
- Few additional men and households
.....but is value in numbers or in reaching the “last 20%”



Challenges in keeping people retained in care

Challenges

- Long waiting times for clinical review and pharmacy for refills
- Pharmacy capacity; storage space and staffing issues
- Stigma, attitudes especially towards adolescents and men
- Migration in and out of communities

Lessons

- Explore alternative ART delivery for stable clients
- Enhanced staff provision & storage space
- Staff training, adolescent “spaces” & times in clinic
- Higher than anticipated (~20%) change in address, need for repeat household visits

The bottom line

Four community-randomized trials (CRTs) in sub-Saharan Africa addressed these questions with HIV endpoints

- TasP and SEARCH reported no impact of UTT on HIV incidence
 - Iwuji CC, et al. (TasP). *Lancet HIV* 2018;5:e116-e25.
 - Havlir D, et al. (SEARCH). 22nd IAS 2018; Abstr. no WEAX0106LB
- *Ya Tsie* (BCPP) reported a 30% reduction in incidence, of borderline statistical significance.
 - Makhema MJ, et al. (*Ya Tsie*-Botswana). 22nd IAS 2018; Abstract no WEAX0105LB.
- HPTN 071 (PopART) results suggested no effect in one comparison arm, but 30% protection in another

Questions and comments?

Thanks to Drs. Aliyu, Allen, Cohen, & Hayes.

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- Vermund SH. (TasP in China). *Lancet* 2013; 382:1159-61.

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