HPTN
HIV Prevention
Trials Network

PopART
HPTN 071

HPTN 071 (PopART)
Population Effects of Antiretroviral Therapy to Reduce HIV Transmission

IMPACT OF UNIVERSAL TESTING AND TREATMENT IN ZAMBIA AND SOUTH AFRICA: RESULTS OF A COMMUNITY-RANDOMIZED TRIAL

CROI: SEATTLE

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PEPFAR

3ie International Initiative for Impact Evaluation

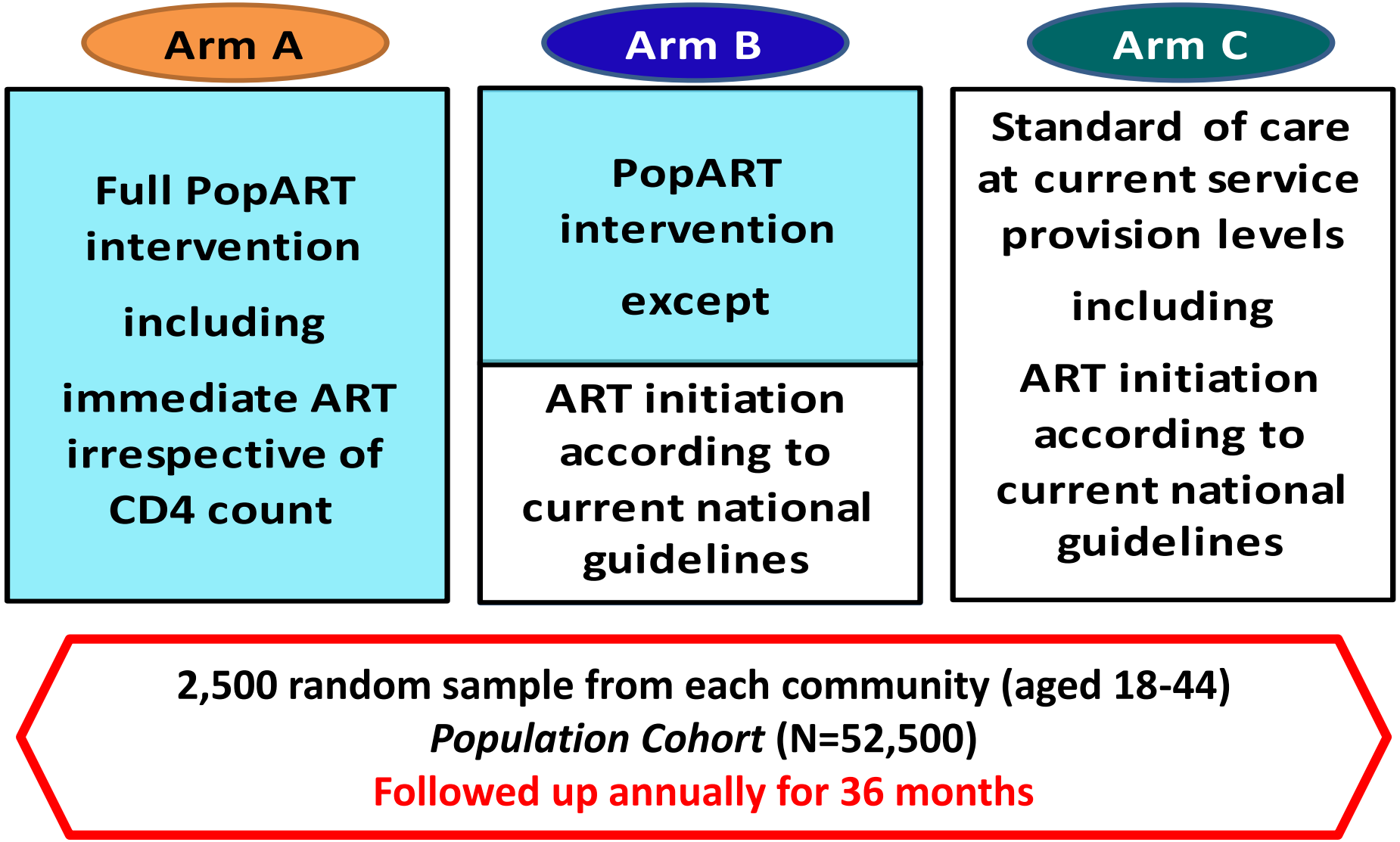
BILL & MELINDA GATES foundation

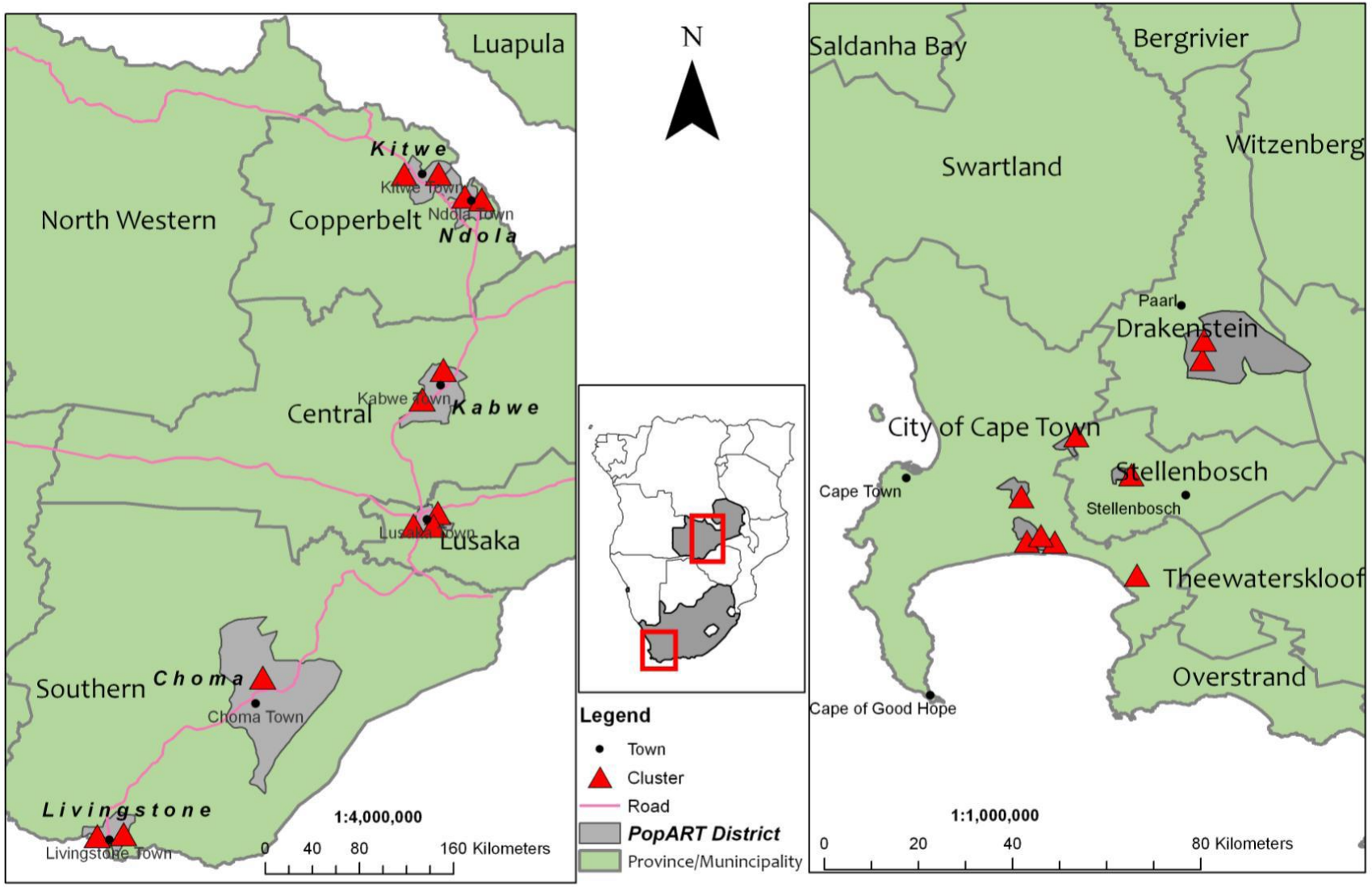
U.S. NATIONAL INSTITUTES OF HEALTH:
National Institute of Allergy and Infectious Diseases
National Institute of Mental Health
National Institute on Drug Abuse

Background

- Universal testing and treatment (UTT) proposed as strategy to achieve steep reductions in HIV incidence
- Can UTT be delivered in practice in generalized epidemics in sub-Saharan Africa?
- What impact on HIV incidence can be achieved?
- Previous UTT trials have shown inconclusive results
  - SEARCH & TasP trials found no impact
  - BCPP found 30% reduction (borderline significance)
- We report primary results of HPTN 071 (PopART)

Study Design





21 Communities

7 per arm (A, B & C)

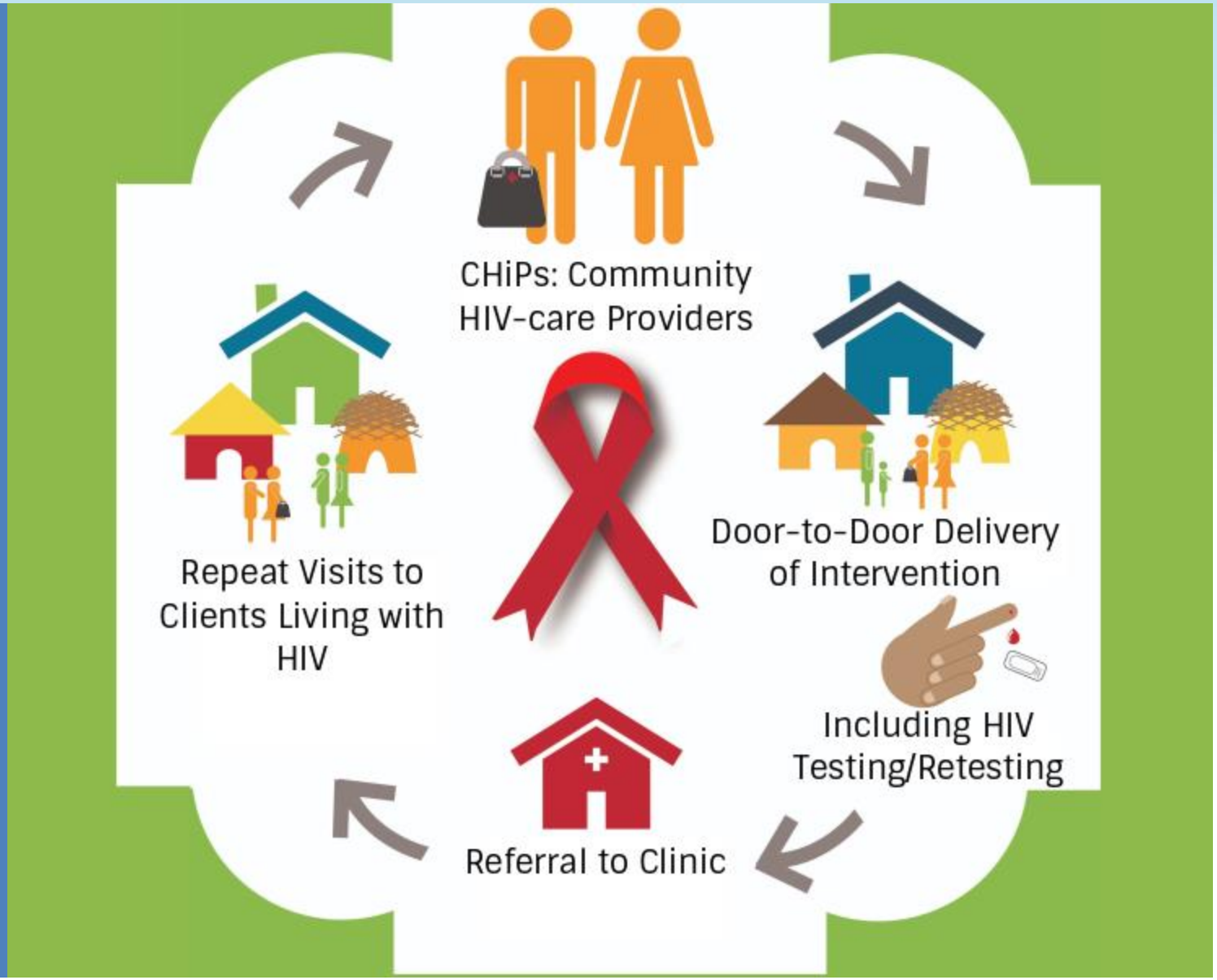
12 in Zambia

9 in S Africa

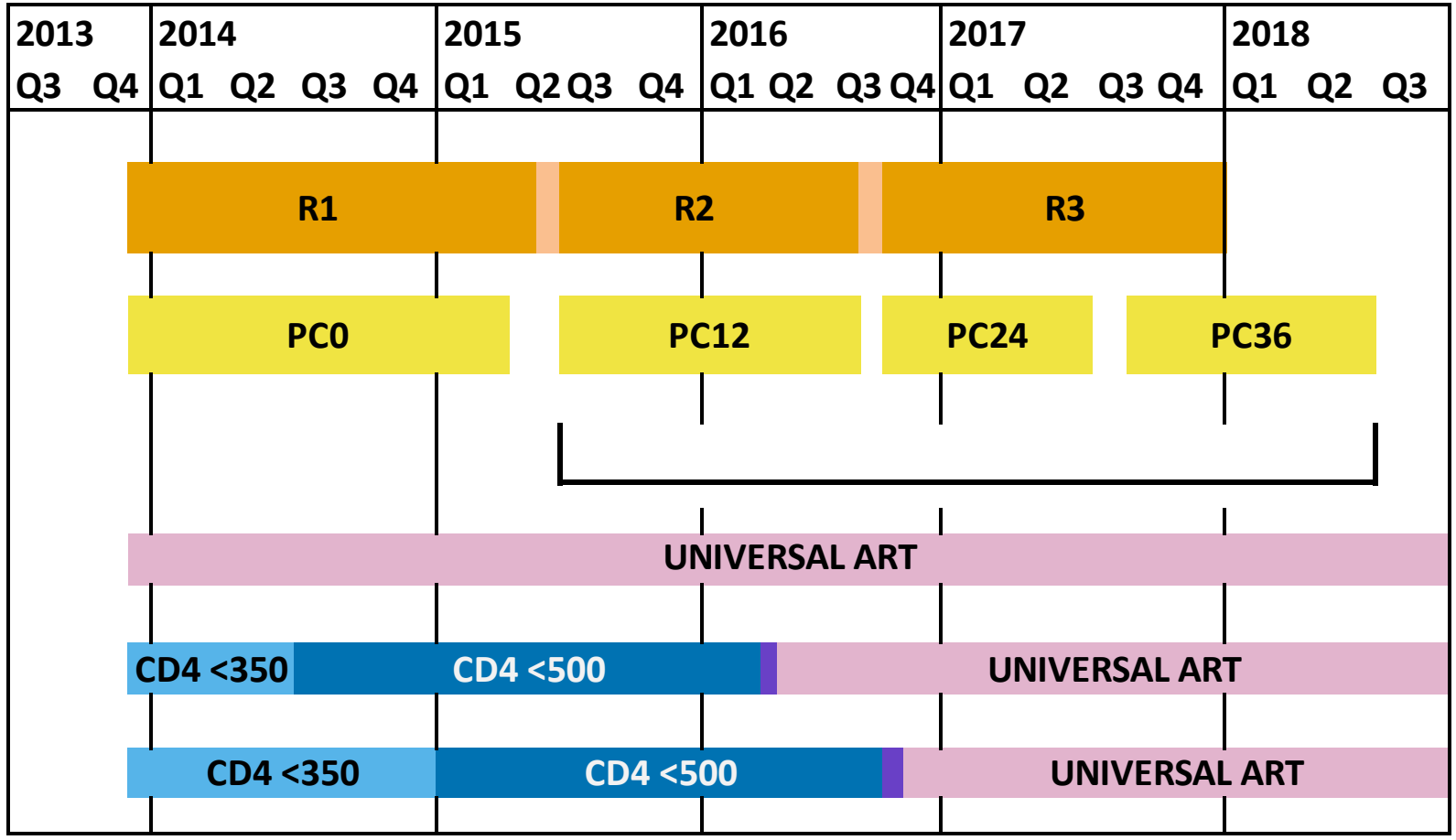
Total population ~1M

CHiPs Door-To-Door Intervention

- Universal HIV counselling and testing
- VMMC referral
- PMTCT referral
- STI screening
- TB screening
- Condoms



Study Timeline



PC enrolment and follow-up

PC0

Enrolled
38,474

PC12

Terminated
5,191 (13%)

Retained
25,289 (66%)

Missed
7,994 (21%)

PC12N
Enrolled
5,014

PC24

Terminated
5,043 (13%)

Retained
25,195 (66%)

Missed
8,059 (21%)

PC24N
Enrolled
4,813

PC36

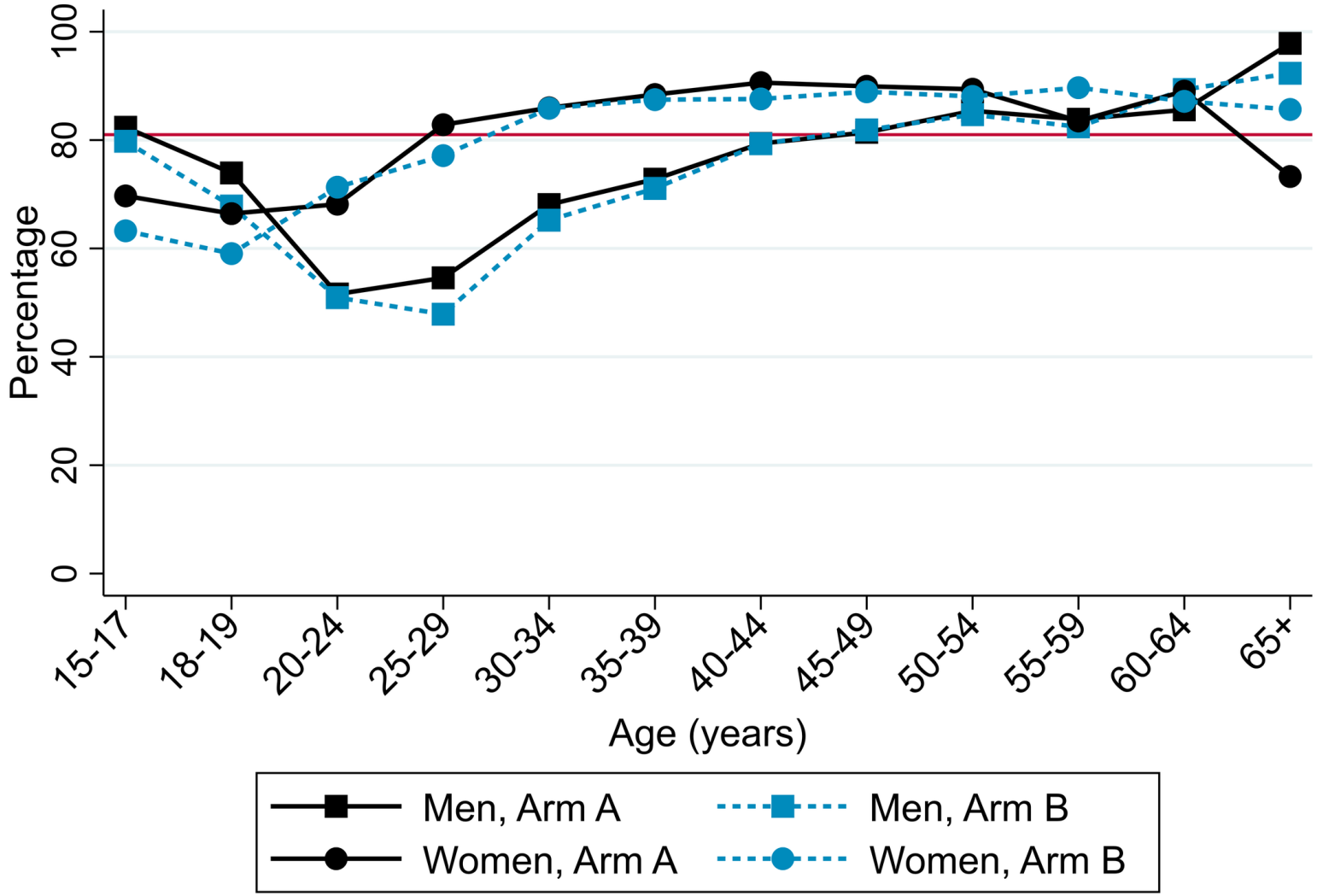
Terminated
10,566 (28%)

Retained
27,501 (72%)

Baseline characteristics of Population Cohort (PC0)

	Arm A N = 12,671	Arm B N = 13,404	Arm C N = 12,399
Male	28%	29%	30%
Age: 18 – 24	40%	39%	40%
25 – 34	39%	39%	38%
35 – 44	21%	23%	22%
HIV Prevalence: Overall	21%	21%	22%
Men	12%	11%	12%
Women	25%	25%	27%
HSV2 Prevalence: Overall	44%	43%	46%
ART (self-reported coverage in HIV+)	33%	41%	35%
Viral suppression (HIV+; 75/community)	56%	57%	54%
Medical Male Circumcision	17%	16%	19%

Delivery of intervention: ART coverage in arm A & B communities at end of trial



90-90 target = 81%

Overall Coverage

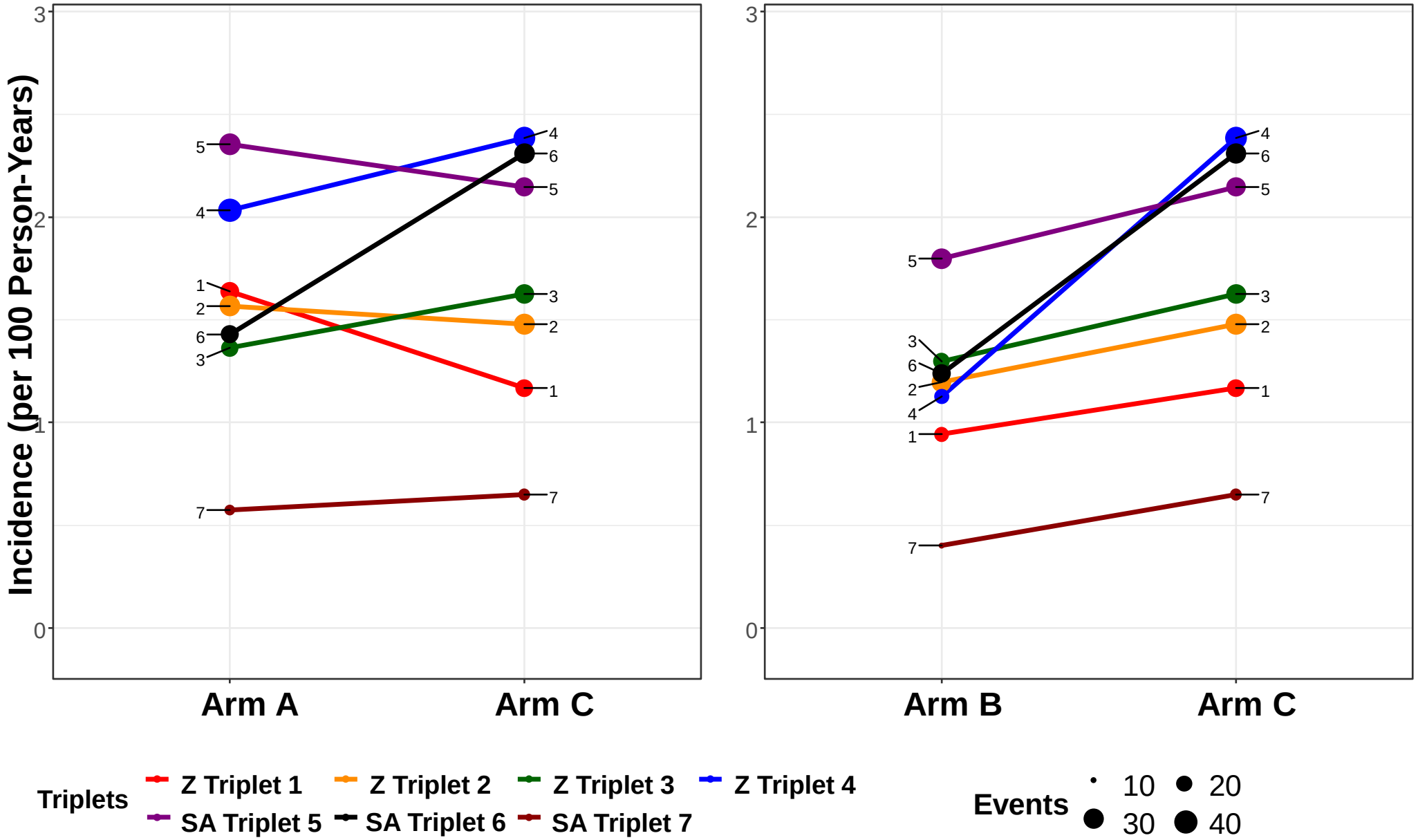
Arm A: 81%

Arm B: 80%

Primary outcome

- HIV incidence in Population Cohort
- Between PC12 and PC36 (pre-specified)
- Time of infection imputed for seroconverters who were not seen at PC12 and/or PC24
- Impact comparing Arm A vs C, and Arm B vs C
- Using methods for matched cluster-randomized trials

HIV Incidence by community (PC12-PC36)



Primary analysis: Incidence in PC12-PC36

	Arm A	Arm B	Arm C
HIV Incidence (geometric mean of community incidence rates)	198/12,990 (1.45%)	157/14,149 (1.06%)	198/12,563 (1.55%)
Adjusted Rate Ratio (95% CI)	0.93 (0.74, 1.18)	0.70 (0.55, 0.88)	1
Incidence compared to Arm C	7% reduction	30% reduction	
P value	0.51	0.006	

Adjusted for age category, sex and baseline community HIV prevalence.
Reported numbers include imputation for PC12 and PC24 missed visits

Viral suppression at PC24

	Arm A	Arm B	Arm C
Viral suppression (Geometric mean of community %)	1531/2159 (72%)	1318/1891 (68%)	1480/2183 (60%)
Adjusted prevalence ratio (95% CI)	1.16 (0.99, 1.36)	1.08 (0.92, 1.27)	1
VS compared to Arm C	16% increase	8% increase	
P value	0.07	0.30	

Adjusted for age category, sex.

HPTN 071 (PopART) Summary

- PopART achieved the first two UNAIDS 90-90 targets in arms A and B
- High rates of viral suppression achieved
- PopART with ART according to local guidelines (Arm B) reduced HIV incidence by 30% in these high burden settings (from 1.6% to 1.1%).
- Lack of an effect in the full intervention arm (Arm A), where universal treatment was delivered ahead of change in guidelines, was surprising and not explained by lower rates of viral suppression.
- Further analysis of quantitative, qualitative and phylogenetic data in progress to explore and explain this dissonant finding.
- **Community-based services for *universal* HIV testing and linkage are a key component of combination prevention in the global effort to achieve effective HIV control.**

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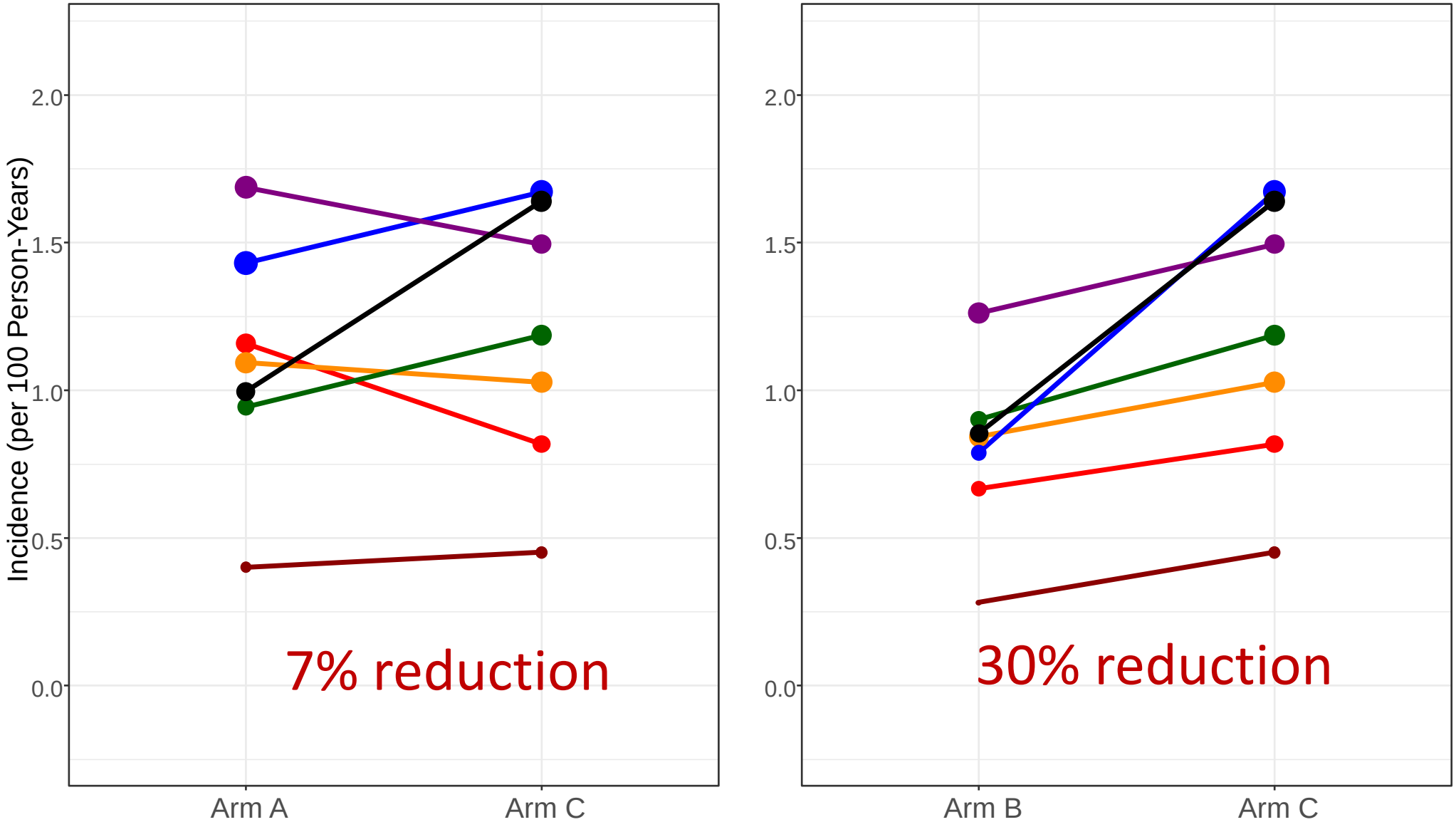
HIV Incidence by community (PC12-PC36)