



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

#### TWEET LIVE #HPTN071 DIAL IN NUMBER FOR AUDIO: 1-866-740-1260 BROADCAST AUDIO CODE: 4011527 PLEASE USE THE CHAT FEATURE IF YOU HAVE QUESTIONS. ALL LINES ARE MUTED.





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#### **U.S. NATIONAL INSTITUTES OF HEALTH:**

National Institute of Allergy and Infectious Diseases National Institute of Mental Health National Institute on Drug Abuse





#### Overview

- Overview of the HPTN
- Study Background
- Study Overview
- Study Findings
- Community Engagement
- Results Dissemination
- Final Thoughts



#### **OVERVIEW OF THE HPTN**









#### More than 50 trials ongoing or completed

## 161,000+ study participants enrolled and evaluated

#### Over 85 clinical research sites in 19 countries

#### **300+ publications**







#### **Breadth of the HPTN Scientific Portfolio**

HIV Status	HIV negative, acute HIV	, established HIV
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Populations Adolescents, men who have sex with men, women, transgender people, substance users, communities

Behavioral, HIV testing, pre-exposure prophylaxis, ART,Interventionssubstitution/antagonist therapy, financial incentives,integrated strategies

**Types of Studies** 

Observational, individual randomized, site randomized, community randomized, implementation science



### STUDY BACKGROUND









#### Why was PopART Conducted?

- HIV incidence (new cases) rates remain high in many parts of southern Africa
- Urgent need for additional effective HIV prevention strategies





#### **"Universal Testing and Treatment"**

- 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)

### STUDY OVERVIEW









- Cluster-randomized trial
- Population-level study
- Conducted in 21 urban communities
  - 9 in South Africa
  - 12 in Zambia
- 3 arms, 7 communities per arm
- Evaluated impact of combination prevention package on new HIV cases

**Total Population~1 million** 







#### CHiPs Door to Door Intervention

- Universal HIV
  counseling and testing
- VMMC referral
- PMTC referral
- STI screening
- TB screening
- Condoms







2,500 random sample from each community (aged 18-44) *Population Cohort* (N=52,500) Followed up annually for 36 months

### Study Design





## **Study Timeline**



**CHiPs Intervention** 

**Population Cohort** 

**Primary Analysis Period** 

ART Eligibility, Arm A

Zambia ART Eligibility, Arms B&C

SA ART Eligibility, Arms B&C





#### **Primary Objective**

- Measure the impact of the PopART intervention package on new HIV cases
  - Arm A vs Arm C
  - Arm B vs Arm C



### **Secondary Objective**

HPTN

HIV Prevention Trials Network

- Assess uptake of the PopART intervention package
  - Community HIV testing
  - ART initiation







### **Secondary Objective**

- Measure impact of PopART intervention
  package on viral suppression
  - Arm A vs Arm C
  - Arm B vs Arm C





### STUDY RESULTS









#### Intervention Activities (3 rounds over 4 years)



- South Africa
  - 55,515 households visited in the final round of the intervention
  - 78,947 adults consenting to participate in the intervention
- Zambia
  - 97,939 households visited in the final round of the intervention
  - 181,418 adults consenting to participate in the intervention

#### **TARGETS FOR ENDING THE AIDS EPIDEMIC BY 2030**









#### **Coverage Estimates for First Two UNAIDS 90-90-90 Targets**









2,500 random sample from each community (aged 18-44) *Population Cohort* (N=52,500) Followed up annually for 36 months

Study Design

~ 1 million population





Arm C Arm B Arm A

> 2,500 random sample from each community (aged 18-44) *Population Cohort* (N=52,500) Followed up annually for 36 months

### Study Design











#### Age of Individuals in the PC

















#### NEW CASES OF HIV (INCIDENCE)





#### **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 <i>,</i> 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





#### Subgroup Analyses: New HIV Cases in PC12-PC36





Suppression defined as a viral load of less than 400 copies/mL of blood

#### VIRAL SUPPRESSION IN HIV POSITIVE PC PARTICIPANTS









#### **Primary Analysis: Viral Suppression at PC24**







#### **Subgroup Analysis: Viral Suppression at PC24**





### COMMUNITY ENGAGEMENT









#### **PopART Daily Field Staff**









Drivers (20)

#### CHiPs (~650)

#### Research Enumerators (96)

Research Nurses (42)



Community Mobilizers (14)



Social Scientists (20)





#### **Communities are not homogenous**



Uptake of intervention and choice of community engagement activities were influenced by 'other things happening' in a community

#### Representation mechanisms in PopART

HPTN

Trials Network



- Multiple communities required multiple engagement mechanisms
  - Stakeholder analysis
  - Adult Community Advisory Boards
  - Adolescent Community Advisory Board
  - National CAB (NCAB)
  - Community Partners Platform (CPP)
  - District Implementation Management Teams
  - National Intervention Management Team





#### Community Randomization Events

- Held in South Africa and Zambia prior to study initiation
- Randomization done via soccer ball selection by community representatives
- Ball combinations resulted in community assignments to study arms
- Allowed for equal chance for communities to receive the intervention









#### **Results Dissemination to Communities**

- Community members and CABs were consulted towards end of study implementation:
  - How to exit communities
  - How to prepare communities to receive results
- Preparation of communities
  - Providing results dissemination related information in CAB meetings
  - Training CAB members to understand key terms used in results presentation (Zambia)





#### **Community Dialogue Process** "I feel proud to be part of this and I feel respected" (younger woman)

#### "I would like to thank PopART. It has reduced HIV in Zambia" (older woman)

- Aim: share, discuss and interpret main primary outcome results (PopART + Stigma) with community
- Method: participatory approach (buzz groups, small group discussions, fish bowl, approx. 4 hours)
- Participants: 50+ representative community members (CABs, ACABs, PC participants, CHiP & PC staff, health workers, other interest groups)





### **Community Advisory Structures**

- Community/researcher partnership
  - Encouraged community ownership
  - Provided guidance on research plans, activities and challenges
- Community Representation
  - Adult CABs
  - Adolescent CABs
  - Neighborhood Health Committees
  - Civil Society
  - Trial Steering/ Management Committees



### FINAL THOUGHTS









#### Summary

- PopART achieved the first two UNAIDS 90-90 targets (high rates of HIV testing, high rates of linkage to HIV care) in both Arm A and Arm B
- High rates of viral suppression achieved
- PopART intervention package with ART according to local guidelines (Arm B) reduced HIV incidence by 30% in high burden settings
  - shifted to immediate ART midway through the study





### Summary

- Lack of an effect in the full PopART intervention arm (Arm A), where universal treatment was delivered from the beginning of the study, was surprising and not explained by lower rates of viral suppression
- Phylogenetic analysis and qualitative research may throw further light on this surprising finding







- Community-based services for HIV testing and linkage are one key component of combination prevention in the global effort to achieve effective HIV control
- Intensified efforts are needed to engage youth and men





#### Additional Information

- www.hptn.org
  - www.facebook.com/HIVptn
  - www.twitter.com/HIVptn
- www.nih.gov
- www.cdc.gov





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