

# HPTN 071 (PopART) at AIDS 2018

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LESSONS LEARNED FROM A MAJOR  
TRIAL OF UNIVERSAL TESTING  
AND TREATMENT FOR HIV PREVENTION

# *PopART*

*HPTN 071*



The HPTN 071 (PopART) study is evaluating the impact of a combination prevention strategy – anchored in universal household HIV testing and linkage to immediate antiretroviral treatment initiation – to reduce HIV incidence. With fieldwork recently completed in 21 large communities, reaching nearly one million individuals in Zambia and South Africa, this study will provide answers to questions regarding how best to combine HIV prevention interventions in different populations and settings for maximum impact while also assessing cost-effectiveness.

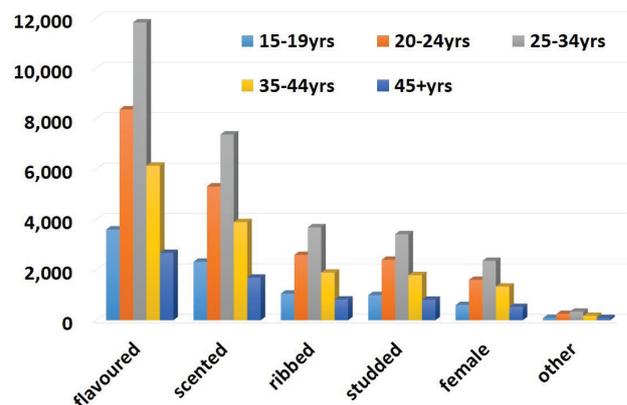
The intervention was carried out by a novel cadre of staff, the Community HIV-care Providers (CHiPs). Across 14 study communities, 640 CHiPs were recruited locally and trained to carry out the household intervention. This included annual rounds of home-based HIV counseling and testing, linkage to HIV care and prevention services, tuberculosis and STI screening, condom distribution and referral for voluntary medical male circumcision (VMMC) for all households in these communities. CHiPs also followed up with HIV+ clients referred for care and provided adherence support. In addition to CHiPs activities, routine HIV prevention and treatment services at local clinics were strengthened in these intervention communities. HIV incidence is being assessed in data collected from a research cohort of approximately 48,500 randomly-selected adults, recruited from all study communities (the “Population Cohort”), assessed annually for three years.

## How Did HPTN 071 (PopART) Play Out in The Real World?

### Community Condom Preferences in Zambia From the HPTN 071 (PopART) Trial

AIDS 2018, Mwelwa Phiri Poster, Programme #WEPEC303, 25 July 2018 12:30-14:30

How can we improve community uptake of condoms in Zambia? Quantitative and qualitative investigations of condom preferences as part of HPTN 071 (PopART) show that distributing more interesting condoms (e.g. flavoured, scented, female) than the government standard male condoms could improve condom uptake by as much as 60% in some groups, especially young women and men.



### Describing Levels Of Uptake and Non-Uptake of Voluntary Medical Male Circumcision Services During HPTN 071 (PopART) Study, Zambia

AIDS 2018, Ephraim Sakala Poster, Programme #WEPEC229, 25 July 2018 12:30-14:30

Circumcision works, but will men in Zambia take it up? We describe the uptake of circumcision by male participants in the PopART intervention’s third year in Zambia. We followed up 6,806 men referred for circumcision in HPTN 071 (PopART). Just over one in four referred males did go to the clinic, and 93% of those who reached the health facility were circumcised. The high dropout may be resolved by intensified health education.

### Feasibility and Acceptability of Symptom Screening of Sexually Transmitted Infections: HPTN 071 (PopART) Trial in Zambia and South Africa

AIDS 2018, Comfort Phiri Poster, Programme #WEPEC155, 25 July 2018 12:30-14:30

Can STI screening be incorporated into home-based HIV testing services, and is knowledge of HIV status associated with the presence of STI symptoms? Results showed that large-scale community-based STI symptom screening by lay counsellors can easily be performed as part of a door-to-door intervention. The prevalence of STI symptoms was 1.3%. Symptoms were more common among those newly diagnosed with HIV in both countries.

## Acceptability and Preferences of Two Different Community Models of Art Delivery in a High Prevalence Urban Setting in Zambia, Nested Within the HPTN 071 (PopART) Trial

AIDS 2018, Mohammed Limbada Poster, Programme #WEPEE767, 25 July 2018 12:30-14:30

How do PLWH prefer to receive ARVs? As governments roll out differentiated HIV care services in settings of high HIV prevalence and limited resources, it is critical to understand people's preferences on how they want to receive ARVs to facilitate high uptake and retention. Data from a sub-study of HPTN 071 show that stable HIV+ patients who expressed a preference preferred home-based delivery of ART (compared to adherence clubs or receiving treatment at the clinic).

## Understanding Who Accepts and Who is Reached Through Secondary Distribution of HIV Self-Tests in a Cluster-Randomised Trial of Door-To-Door Offer of HIVST Nested In Four HPTN 071 (PopART) Communities in Zambia

AIDS 2018, Bernadette Hensen Poster, Programme #WEPEC174, 25 July 2018 12:30-14:30

Reaching the hard-to-reach with HIV testing...can self-testing help? In a randomized sub-study of HPTN 071 (PopART), staff conducting household (HH) visits offered to leave HIV self-test kits for use by absent HH members ("secondary distribution" of kits). Over half of the kits left for secondary distribution (63.4%) were known to have been used, >80% by male HH members. Although less than 10% of individuals accepted a self-test kit for secondary distribution, secondary distribution reached men absent from the HH, a population known to be difficult to reach.

## HIV Testing Patterns in Two Community-Based Approaches to Universal Test and Treat in HPTN 071 (PopART) South Africa

AIDS 2018, Bliia Yang Poster, Programme #THPEC296, 26 July 2018 12:30-14:30



Can HIV testing in mobile tents find men not reached at home? In response to a lower proportion of men being reached by home-based HIV testing services (HTS), CHiPs also offered HTS in mobile tents in areas with high foot traffic. Those testing at the mobile tents were more likely to be men and more likely to be residents of agricultural communities than those testing through home-based testing. Tent-HIV testing services in high traffic areas proved successful in reaching a higher proportion of men.

## How Health Workers Motivated People Living With HIV (PLHIV) To Initiate Antiretroviral Treatment (ART) at High CD4 Counts in Three HPTN 071 (PopART) Health Facilities, Western Cape, South Africa

Association for the Social Sciences and Humanities in HIV (ASSHH) Conference, Dillon Wademan Oral Presentation, 23 July

AIDS 2018, Neshaan Peton Poster, Programme #WEPEE662, 25 July 2018 12:30-14:30

How do health workers 'change the message' about when to start ART when universal treatment becomes the norm... and who takes up 'early' ART? In the HPTN 071 trial, ART was initiated for PLWH regardless of CD4 count before this became national or international policy. Health workers were able to come up with messages to motivate patients to initiate ART at high CD4 counts, and sociodemographic profiles of initiators with CD4 counts >500 were similar to those with lower CD4 counts.

## Experiences of Early ART Initiation (CD4≥500) Among People Living with HIV in One HPTN 071 (PopART) Study Site in Zambia

ASSHH Conference, Melvin Simuyaba Oral Presentation, 23 July

Why do early ART initiators start treatment? A qualitative sub-study of HPTN 071 (PopART) looked at experiences of people who started ART at CD4≥500. They were motivated to start by personal health and not to prevent onward transmission. Stringent ART adherence was seen as maintaining health, but side-effects, limited disclosure and stigma were reported as factors that could impede adherence.

# Did The PopART Intervention Change Anything?

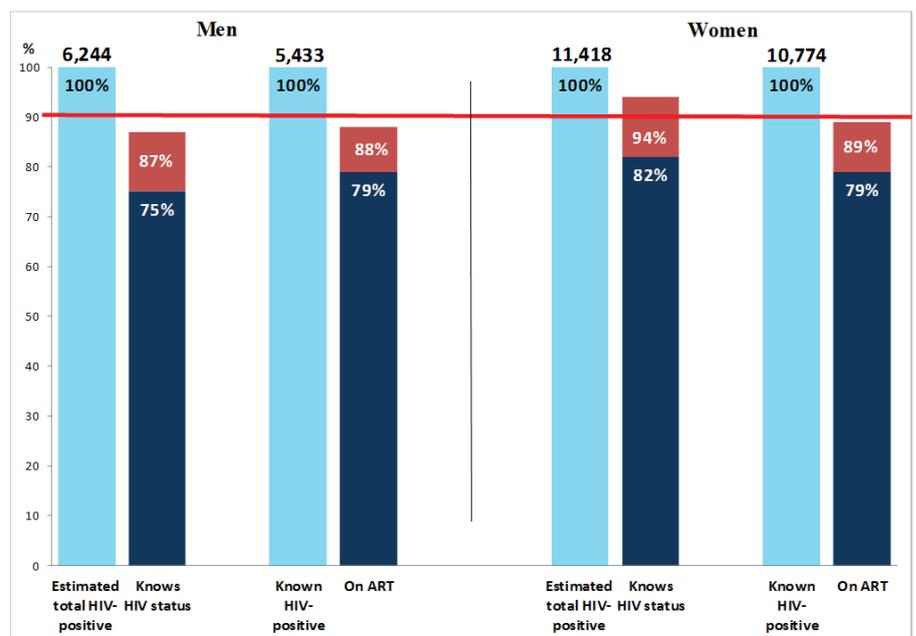
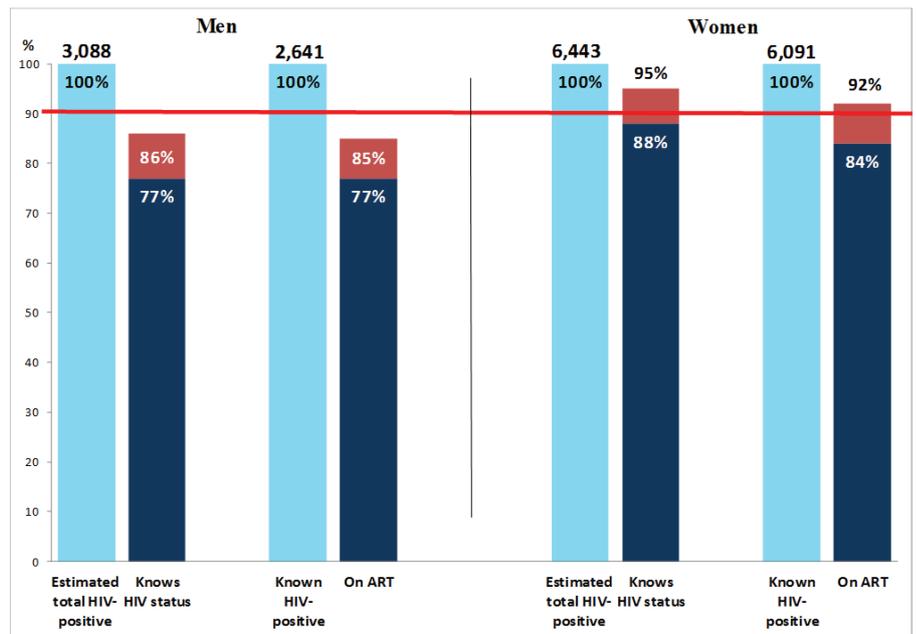
First and Second 90 estimates for Zambia and South Africa, overall

## Achieving the First Two UNAIDS 90-90-90 Targets On Completion of a Three-Year Universal Testing and Treatment (UTT) Intervention in the HPTN 071 (PopART) Randomised Trial in Zambia and South Africa

AIDS 2018, Richard John Hayes Poster, Programme #THPEC289, 26 July 2018 12:30-14:30

How close did the HPTN 071 trial get to achieving the first and second "90"s? Estimates show that after three rounds of delivery of the PopART intervention, the first two of the UNAIDS 90-90-90 targets were reached overall in adults aged 15 and over in the 7 PopART intervention communities in Zambia and South Africa receiving the full intervention from the start of the trial. We also present estimates broken down by age and gender, showing that there remain important gaps in coverage among young people, and especially among young men.

Navy blue = at time of Round 3 visit  
Red = by end of Round 3

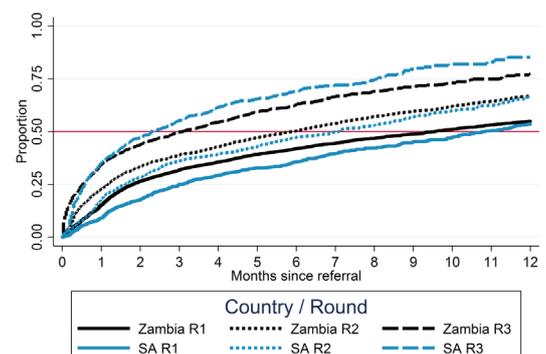


## Dramatic Reductions in Time to ART Initiation Among HIV+ Individuals Referred to HIV Care Following Home-Based Testing Services: Experiences From the HPTN 071 (PopART) Trial Between 2014 and 2017

AIDS 2018, Sarah Fidler Poster, Programme #THPEC276, 26 July 2018 12:30-14:30

How did 'time to start' for ART change over the course of the PopART intervention? After 3 annual rounds of delivering a community-wide combination HIV prevention package to 7 communities in Zambia and South Africa, dramatic reductions were seen in the time from HIV testing to ART initiation. Implementation of a universal HIV test and treat strategy with support within the community to link to care and initiate ART was highly acceptable and effective in improving time to ART initiation.

Time to ART initiation after CHiP referral to HIV care, by country and round of referral

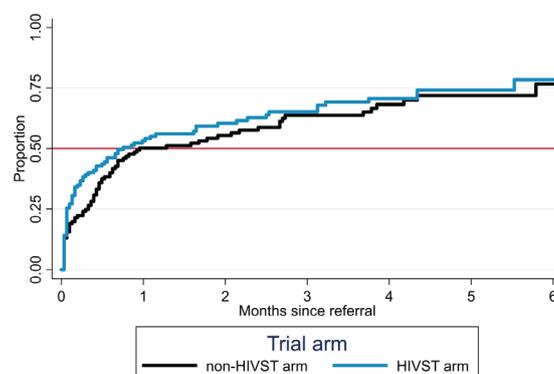


Median time to ART initiation after referral to HIV care:  
R1: ~10 months; R2: ~6 months; R3: ~3 months

## Linkage to HIV Care Following HIV Self-Testing: A Cluster Randomised Trial of Community-Based Distribution of Oral HIV Self-Test Kits Nested in Four HPTN 071 Communities in Zambia

AIDS 2018, Sian Floyd Poster Discussion, Programme #THPDC0102, 26 July 2018 13:00-14:00

If people self-test for HIV, does that create difficulties in their linking to care? Linkage to HIV care (LTC) following an HIV-positive diagnosis and referral to HIV care was not undermined by offering HIV self-testing as a testing option compared to provider-delivered HIV testing, in the context of LTC support. However, strategies are needed to (1) facilitate LTC when self-testing is done without supervision, including following secondary distribution, and (2) facilitate confirmatory testing, following an HIV-positive self-test result.



Time from Referral-to-HIV-Care to Linkage-to-Care

## Retention on ART Within the HPTN 071 (PopART) Universal Testing and Treatment Programme in Zambia and South Africa

AIDS 2018, David Macleod Poster, Programme #THPEC323, 26 July 2018 12:30-14:30

What do ART clients say about their ability to remain on treatment in the context of a large universal test and treat trial? Estimates of retention on ART were calculated based on self-reported data from people living with HIV in the seven HPTN 071 (PopART) study communities in Zambia and South Africa that received the full intervention from the start of the trial. In the absence of routine viral load testing, these results provide some indication that retention on ART within the study was high, a necessary component in order to meet the “third 90” of the UNAIDS 90-90-90 targets.

## Can An Intervention Like PopART Reach Young People?

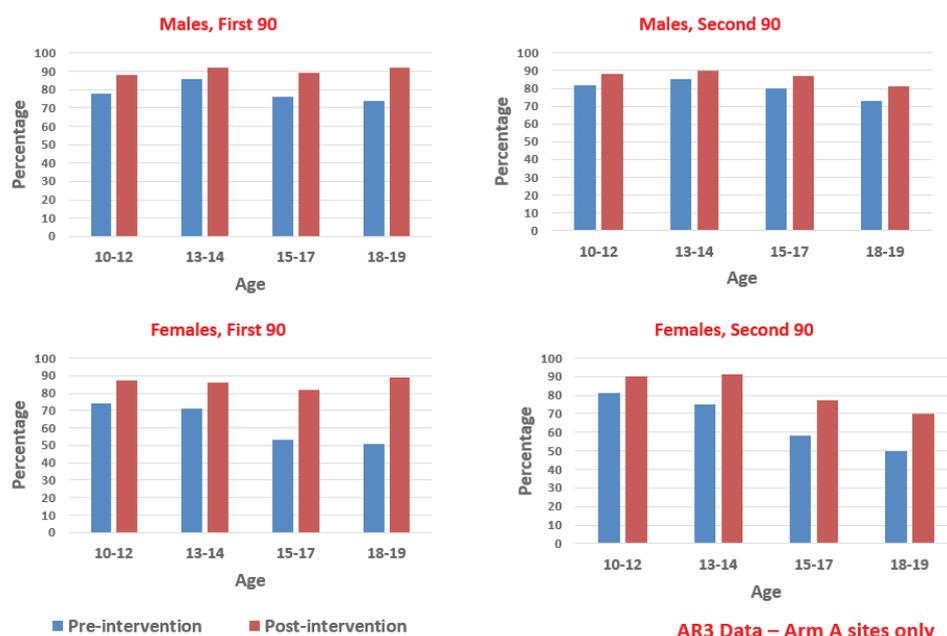
### HIV Care Cascade Among Adolescents in a “Test and Treat” Community-Based Intervention in Zambia and South Africa: HPTN 071 (PopART) for Youth Study

Evidence for HIV Prevention in Southern Africa (EHPSA) Satellite Session, Graeme Hoddinott Presentation, 23 July 2018 08:00-10:00

AIDS 2018, Kwame Shanaube Non-Commercial Satellite Presentation, Programme #MOSA34, 23 July 2018 12:30-14:30

AIDS 2018, Kwame Shanaube Poster, Programme #THPEC247, 26 July 2018 12:30-14:30

The first and second UNAIDS 90s estimated for the total population in the PopART sites



AR3 Data – Arm A sites only

When a community-level HIV intervention is offered to every household, how do youth fare? Prior studies have shown that

adolescents continue to have worse health outcomes than adults throughout the HIV cascade of care. The PopART for Youth (P-ART-Y) study was nested within HPTN 071 (PopART) and measured the acceptability and uptake of the PopART HIV prevention package among adolescents and young adults. The PopART intervention came close to achieving both the first and second UNAIDS 90-90-90 targets for all adolescent males. However, gaps still remain for older adolescents for the second 90, especially in adolescent girls.

## Adolescent and Young People's Participation and Representation in Clinical Trials: Lessons from a Community-Wide HIV Testing and Treatment Study, the HPTN 071 (PopART) Study

AIDS 2018, Musonda Simwinga Poster Discussion, Programme #TUPDD0202, 24 July 2018 13:00-14:00

Can the voices of young people help guide research? To conduct the PopART for Youth (P-ART-Y) study, we established adolescent community advisory groups. We found that adolescents and young people can meaningfully participate in research through such groups by suggesting appropriate interventions and providing input to ensure that implementation of the research is ethical, and contextually and culturally sensitive. However, their participation may be constrained by high mobility leading to high turnover, and the requirement for parental/guardian permission.

## 'In Their Shoes': Limited Disclosure Amongst Young People Living with HIV Stifles Their Ability to Contact Others in the Same Situation, a Qualitative Cohort HPTN 071 (PopART) Study in Zambia

ASSHH Conference, Madalitso Mbewe Oral Presentation, 23 July

AIDS 2018, Madalitso Mbewe Poster, Programme #TUPED432, 24 July 2018 12:30-14:30

How do young people living with HIV (YPLWH) handle the issue of disclosure? Qualitative research showed that YPLWH often disclosed to very few or none of their peers despite having relatively wide social networks. These young people often desired support, however, and desired the opportunity to share experiences with other young people 'in their shoes'. HIV self-management interventions for YPLWH ought to create opportunities for young people to support one another.

## What is the Cost?

### Costs of Home-Based HIV Testing In Zambia: Evidence From The HPTN 071 (PopART) Study

International AIDS Economic Network (IAEN) Meeting, Katharina Hauck Oral Presentation, 20-21 July

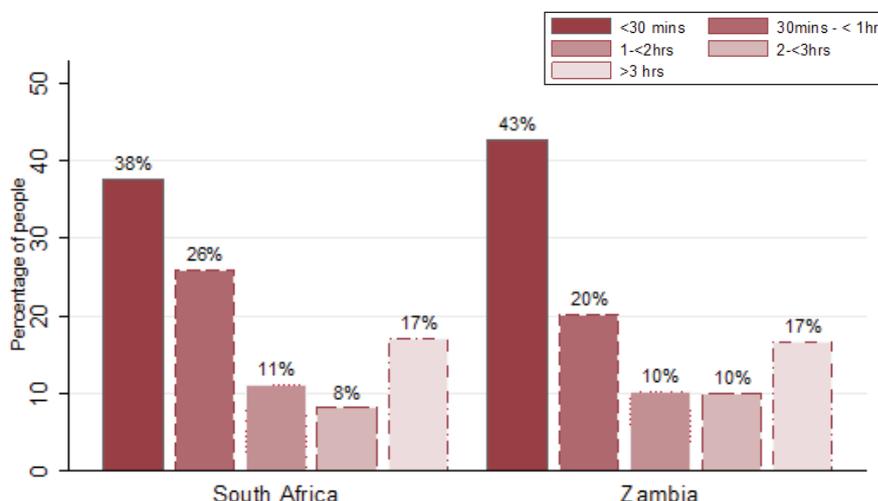
AIDS 2018, Ranjeeta Thomas Poster, Programme #THPEE648, 26 July 2018 12:30-14:30

How much does home-based HIV testing and counselling (HBHTC) cost? In HPTN 071 (PopART), community health workers offered HIV testing and other services door-to-door. Economic costs of two-rounds of HBHTC delivered to over 250,000 individuals over three years were estimated using micro-costing methods. We found that costs are sensitive to community-specific factors related to service delivery or population characteristics and that cost per person tested HIV-positive nearly doubled between the first two rounds of service provision due to the smaller number of HIV positives identified in the second round.

### The Patient Costs of Accessing Healthcare in South Africa and Zambia: a Baseline Survey of the HPTN 071 (PopART) Trial

IAEN Meeting, Lawrence Mwenge Poster, 20-21 July

How free is 'free' healthcare? Healthcare is provided free of charge in most sub Saharan countries, however patients do incur out of pocket expenditure which may act as a barrier to accessing health care, resulting in negative health outcomes. This study investigated the monetary and non-monetary costs of accessing public healthcare for study participants in Zambia and South Africa. The biggest costs in both countries and for both HIV+ and HIV- participants were travel costs.



Distribution of travel time to health facility, last time accessed care

## Work and Home Productivity of HIV-Positive and HIV-Negative Individuals in Zambia and South Africa in the HPTN 071/PopART Trial

AIDS 2018, Katharina Hauck Poster, Programme #THPEE645, 26 July 2018 12:30-14:30

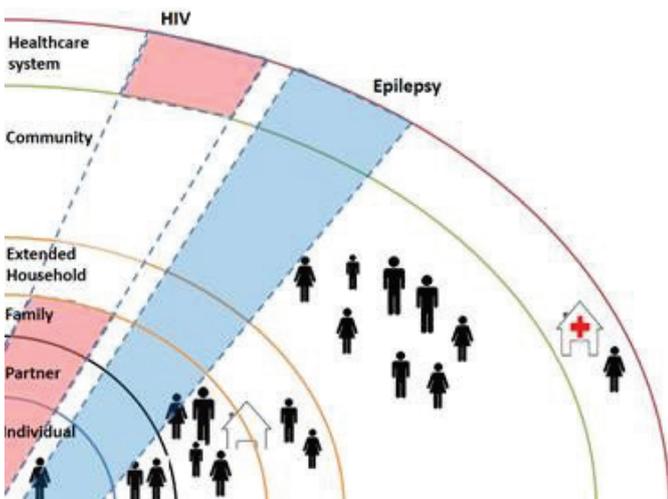
How much productivity is lost due to HIV among informal sector workers? Productive days lost (PDLs) need to be considered when evaluating benefits of HIV prevention from a societal perspective. Differences in PDLs between HIV-negative and HIV-positive individuals at various lengths of time on treatment were estimated. There is significant loss in work and home productivity due to HIV in the general population, but less than estimates from samples of formal sector workers.

## What Are the Experiences And Responses of The HPTN 071 Communities?

### The Influence of Community Lay Work, Gender, Social Relations and Stigma On the Uptake of HIV Self-Testing Delivered at Household Level in Four Zambian HPTN 071 (PopART) Trial Communities

ASSHH Conference, Chiti Bwalya Oral Presentation, 23 July

What are the facilitators, challenges and concerns associated with HIV self-testing (HIVST)? HIVST delivered door-to-door by a cadre of trusted community lay workers can reach populations previously not reached by other HIV testing services. HIVST was experienced as more confidential, less painful, empowering, autonomous and hygienic. Community lay workers were crucial for supporting safe and 'correct' usage and for providing counselling and linkage to care support to those testing HIV-positive.



Layers of disclosure in a case study: HIV vs epilepsy disclosure

### Public Condition/Private Affliction: Negotiating Comorbidity, Confidentiality, and Care in South Africa, a Narrative From The HPTN 071 (Popart) Study

ASSHH Conference, Lario Viljoen Oral Presentation, 23 July

How do individuals living with HIV manage comorbidities? Findings from a qualitative cohort in South Africa show that individuals living with HIV and comorbidities have different ways of managing illnesses across individual, household, community, structural and systematic spheres. Managing care is a process and involves keeping certain aspects of health secret and disclosing others to maintain social support. Health providers should be mindful of competing personal priorities when individuals access or refuse treatment.

### “Self-Stigma is The Worst Kind Of Stigma”: Internalised Stigma and Navigating HIV Care Amongst Health Workers Living with HIV in Zambia and South Africa, The HPTN 071 (PopART) Stigma Ancillary Study

ASSHH Conference, Virginia Bond Oral Presentation, 23 July

AIDS 2018, Virginia Bond Poster, Programme #TUPED503, 24 July 2018 12:30-14:30

How are health workers living with HIV affected by stigma? Amongst an open cohort of health workers (n=1647) in Zambia and South Africa, 25% of health facility workers living with HIV reported experiencing internalised stigma. Qualitative research established that this stigma was driven by fears about what co-workers and clients would think of them. A range of strategies was adopted to hide their HIV status within the workplace. This professional embarrassment is both ironic and overlooked by HIV programmes. More direct stigma interventions are needed to support health workers living with HIV.



## Stigma, Secrecy, Social Support and HIV Service Access Among Transgender and Gender-Fluid People in South Africa – A Narrative Analysis of Longitudinal Qualitative Data From the HPTN 071 (Popart) Trial

ASSHH Conference, Laing de Villiers Oral Presentation, 23 July

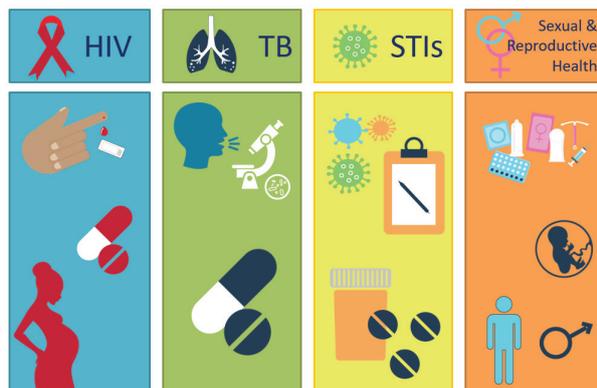
What additional risks do transgender and gender-fluid individuals confront when accessing HIV services? HIV service access can be fraught with risks of inadvertent disclosures and experiences of stigma, specifically for gender-fluid and transgender individuals who are negotiating shifting identities and attempting to maintain secrecy around their identities/statuses. These risks can be mitigated through the support of consistent and stable social networks.

## Optimism and Acceptance of Longitudinal Community Response to a HIV Combination Prevention Package in Zambia, the HPTN 071 (PopART) Study

ASSHH Conference, Rhoda Ndubani Oral Presentation, 23 July

AIDS 2018, Rhoda Ndubani Poster, Programme #THPED483, 26 July 2018 12:30-14:30

What does it take to win over a community? Community response to an HIV combination prevention package changed over time from resistance to optimism, acceptability and appreciation. Community health care workers created this change by working in the community with persistence and patience, by providing sensitization, and by upholding confidentiality and building trust.



HPTN 071 prevention package



CHiPs carrying out the prevention package in Zambia

## The HIV Stigma Landscape in sub-Saharan Africa: Baseline Findings of a Mixed-Method, Comprehensive Evaluation Nested in the HPTN 071 (PopART) Trial

AIDS 2018, James Hargreaves Poster, Programme #TUPED505, 24 July 2018 12:30-14:30

What have we learned about HIV stigma and how it affects access to health services? Many studies collect data on the important issue of HIV stigma. Within the HPTN 071 (PopART) study, we have nested a very large study of HIV stigma from multiple perspectives, including people living with HIV, community members and health workers. Stigma remains an important phenomenon, especially toward key populations and appears to act as a barrier to health service.

## Intimate Partner Violence and Associated Factors in HPTN 071 (PopART) Study Communities - A Comparison by HIV Status

AIDS 2018, Kalpana Sabapathy Poster, Programme #WEPED402, 25 July 2018 12:30-14:30

Did the PopART intervention affect intimate partner violence (IPV)? Intimate partner violence (IPV) is known to adversely affect women's health and health-seeking behaviour. In a nested sub-study among women in PopART intervention communities, approximately 20% of women experienced IPV (physical and/or sexual) in the last 12 months, irrespective of HIV status. We identified factors associated with IPV in the last 12 months but encouragingly, found that it was not associated with uptake of the PopART home-based testing or immediate treatment interventions among those studied.

# Understanding Our Findings & Informing the Future

## Determinants of the Predicted Effectiveness of Universal Test and Treat in a High-Prevalence Generalised HIV Epidemic: Insights from the HPTN 071 (PopART) Individual-Based Model

AIDS 2018, Rafael Sauter Poster, Programme #TUPEC293, 24 July 2018 12:30-14:30

How can modelling help us understand what's important to the success of the universal test-and-treat approach to HIV prevention? Detailed modelling of the trial allows identification of determinants of effectiveness. The individual-based model for HPTN 071 (PopART) offers insight into developments far beyond the trial horizon, relevant for decisions to be taken after trial completion. The fast model implementation allows us to investigate various scenarios and can be used to plan future trial interventions in high prevalence communities.

## HIV Genotyping and Phylogenetics in the HPTN 071 (PopART) Study: Validation of a High-Throughput Sequencing Assay For Viral Load Quantification, Genotyping, Resistance Testing and High-Resolution Transmission Networking

AIDS 2018, David Bonsall Oral Presentation, Programme #THAA0101, 26 July 2018 11:00-12:30

What can genotyping and phylogenetics teach us about HIV epidemiology? The PopART phylogenetics sub-study of HPTN 071 will provide a valuable molecular epidemiological insight into the transmission events that occurred in spite of the trials intervention. Here, we present our low-cost next-generation sequencing solution, complete with analytics and specifically optimised to detect transmission, quantify viral load and predict drug resistance.

## Understanding Infection Clusters – Can This Help Us to Target Prevention?

AIDS 2018, Christophe Fraser Symposia Session, Programme #TUSY02, 24 July 2018 11:00-12:30

Understanding how HIV spreads and evolves over time and in different populations helps better control the epidemic. Mathematical modelling has long highlighted the importance of heterogeneity in transmission in shaping the epidemic, but not in a way that is easily translated to prevention. This presentation describes new approaches to characterising this heterogeneity using phylogenetic source attribution, and presents results on transmission patterns stratified by age and sex.



We wish to acknowledge implementing partners in South Africa (City of Cape Town and Western Cape Government health departments, Kheth' Impilo, ANOVA Healthcare, SACTWU Worker Health Programme and Supply Chain Management Services) and Zambia (Zambian Ministry of Health, CIDRZ, ZPCT II and JSI)



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