



**POPULATION
COUNCIL**

Ideas. Evidence. Impact.

**LESSONS FROM
IMPLEMENTATION
SCIENCE:
*KEY TO CURBING THE
GLOBAL HIV EPIDEMIC***



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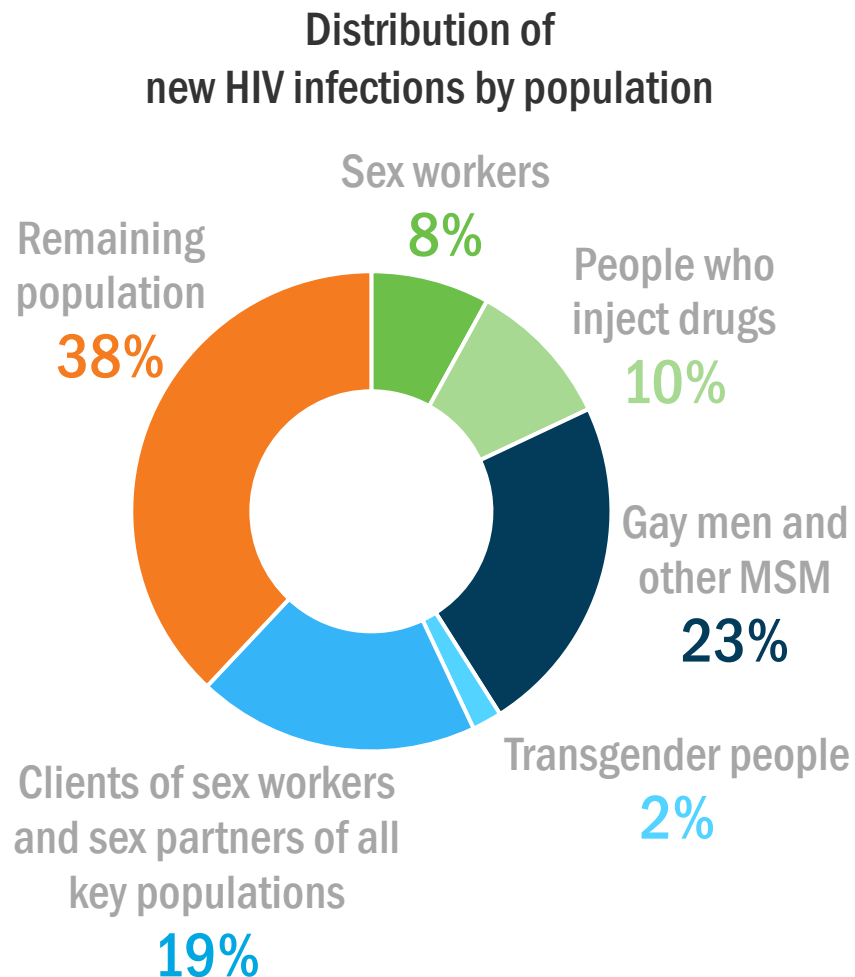
HIV Program Director

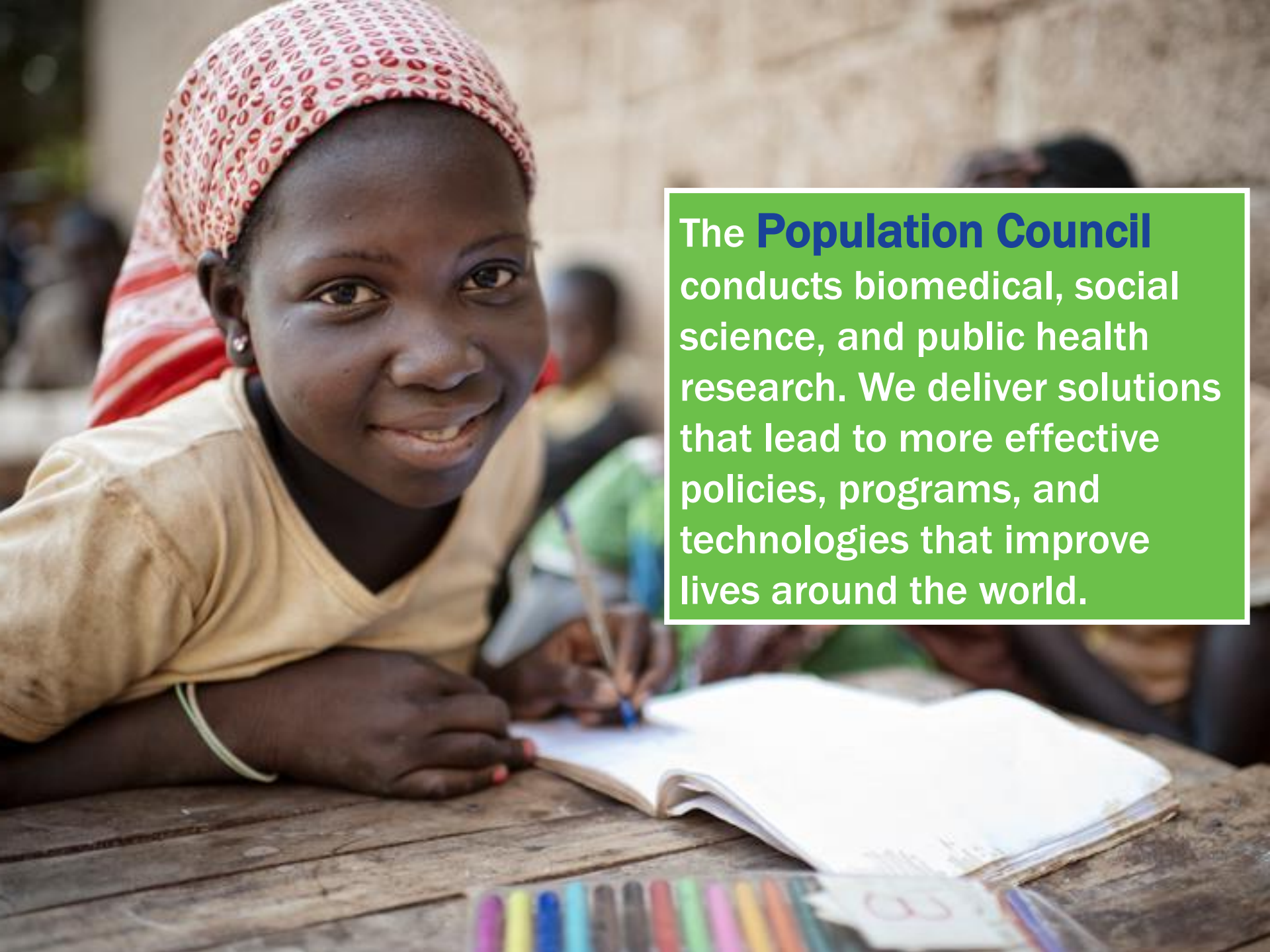
DC Center for AIDS Research (DC CFAR) Citywide Seminar

22 April 2021

Global HIV epidemic

- About 38 million people living with HIV (PLHIV) worldwide
- Out of UNAIDS treatment 90-90-90 goals for 2020:
 - 79% knew status
 - 62% access antiretroviral therapy (ART)
 - 53% virally suppressed
- Prevention? 1.7 million people acquired HIV in the past year
- 940,000 people died from HIV-related illness in last year





The **Population Council** conducts biomedical, social science, and public health research. We deliver solutions that lead to more effective policies, programs, and technologies that improve lives around the world.

Definitions of Implementation Science (IS)

- IS as evolving field that includes clinical research but also identifies and addresses barriers to and facilitators of uptake (Bauer & Kirchner 2020).
 - Confronts common challenge of evidence-based intervention not taken/scaled up or when scaled not effective
- Not only to improve program effectiveness / uptake, but also to explain what worked, why, and under what circumstances (Padian et al. 2011).
- Substantial overlap with ‘Operations Research’ which identifies and diagnoses program problems, tests solutions, and promotes research uptake (Fisher & Foreit 2002).

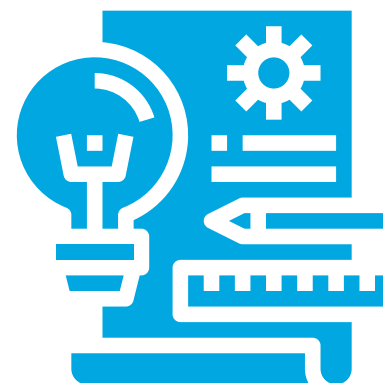
Bauer, M. & J. Kirchner. (2020) Implementation science: What is it and why should I care?, *Psychiatry Research* 283: 112376;

Padian, N. et al. (2011) Implementation science for the US President's Emergency Plan for AIDS Relief (PEPFAR), *JAIDS* 56(3): 199–203;

Fisher, A. & J. Foreit, J. (2002) Designing HIV/AIDS intervention studies: an operations research handbook. Population Council.

Wide range of study designs/goals

- Diagnostic assessments to highlight specific risk/need
- Formative research to inform intervention design
- Process evaluations to assess who is (and isn't) being reached with activities
- Intervention/evaluation studies to test program effects and cost-effectiveness, in one or more contexts

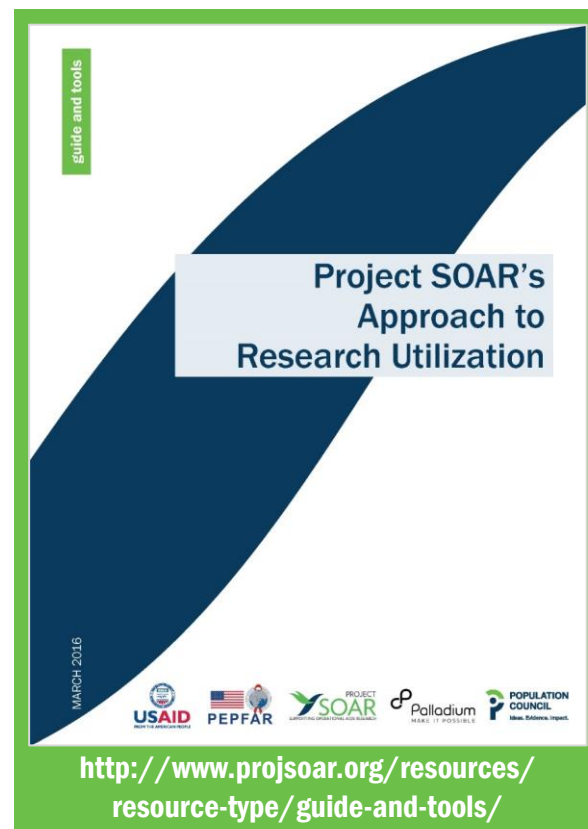


Research utilization as hallmark of IS

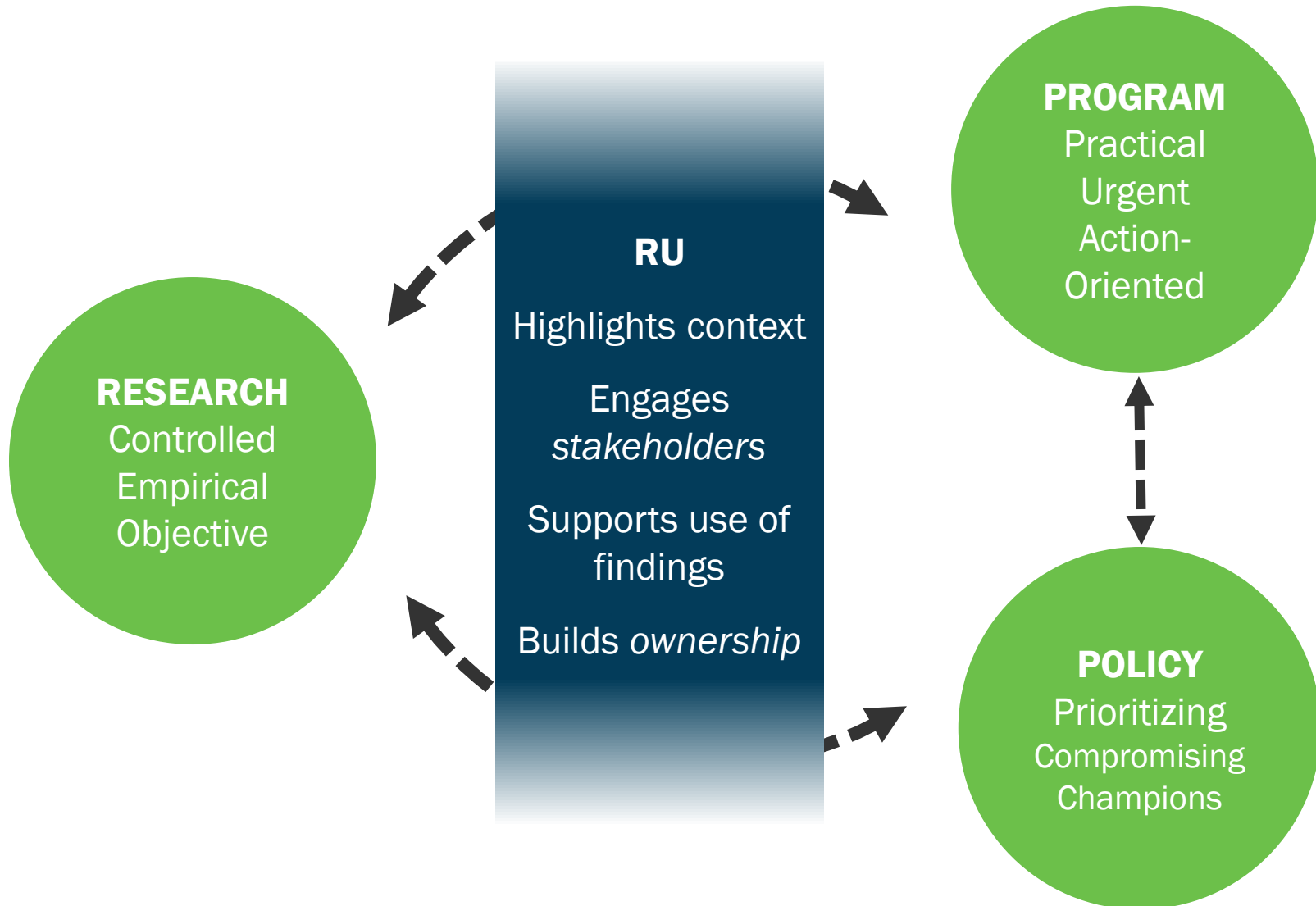


Key to uptake in programs/policy

- Involvement of stakeholders at all stages of research process
 - E.g., study design; data interpretation workshops
- Fosters champions to promote use of findings
- Maximizes relevance and applicability of findings

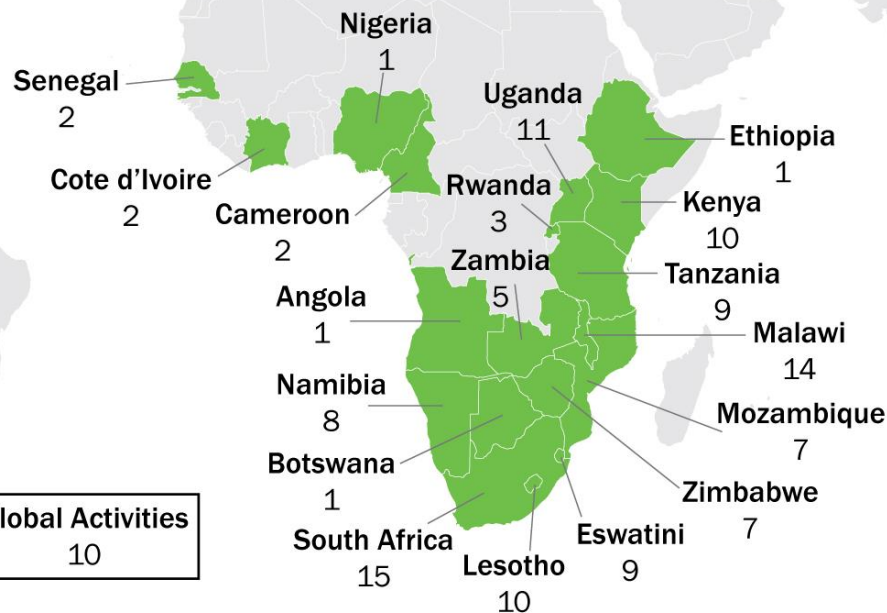


Applied research that acknowledges different stakeholder perspectives



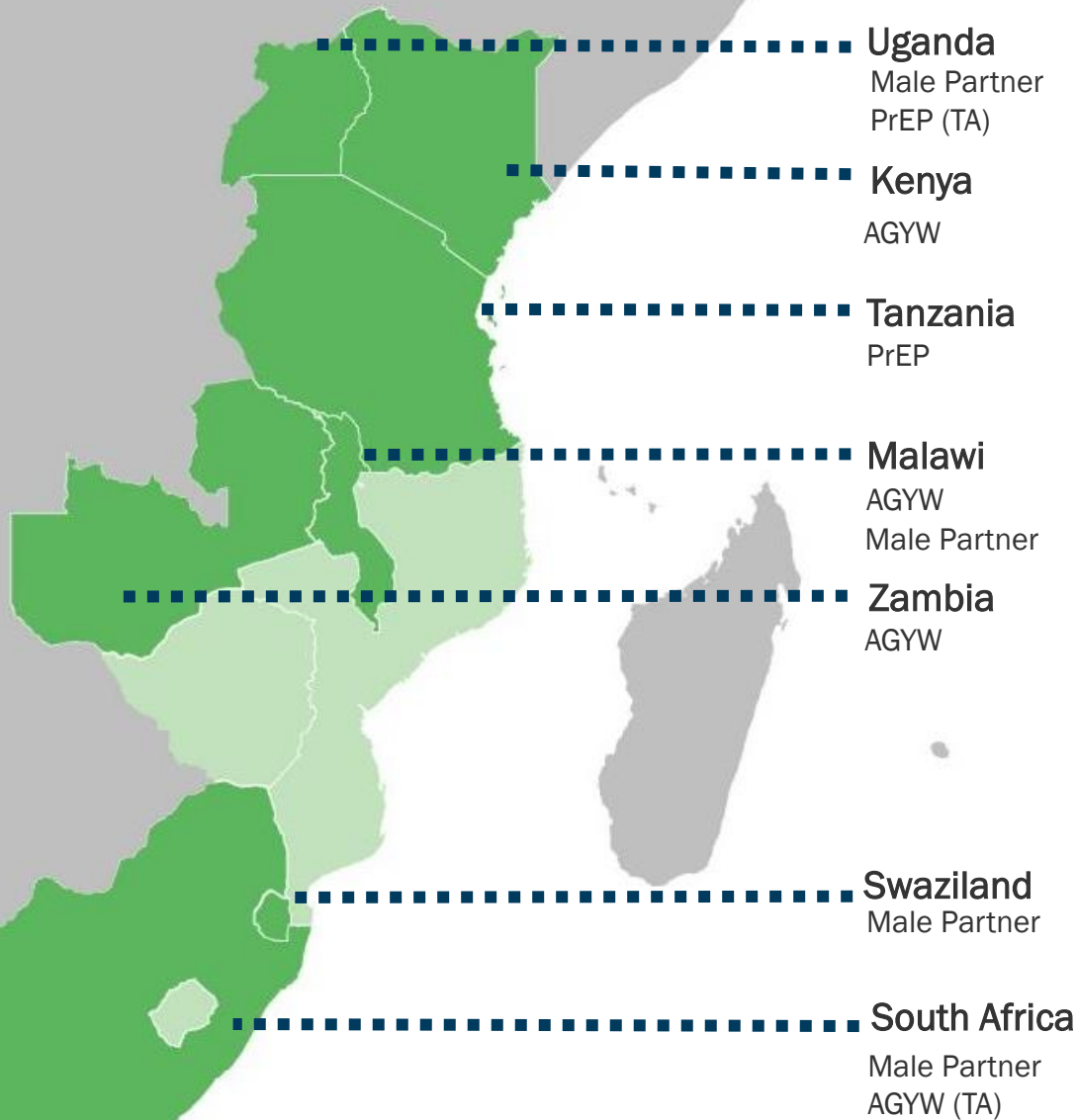
Project SOAR (2014–21)—HIV IS to inform program and policy

Haiti
2
Dominican Republic
1



70 studies in 21 countries

DREAMS IS Research (2016–21)



Focus on HIV risk reduction for adolescent girls/young women and their partners

10 research activities across **7** DREAMS countries

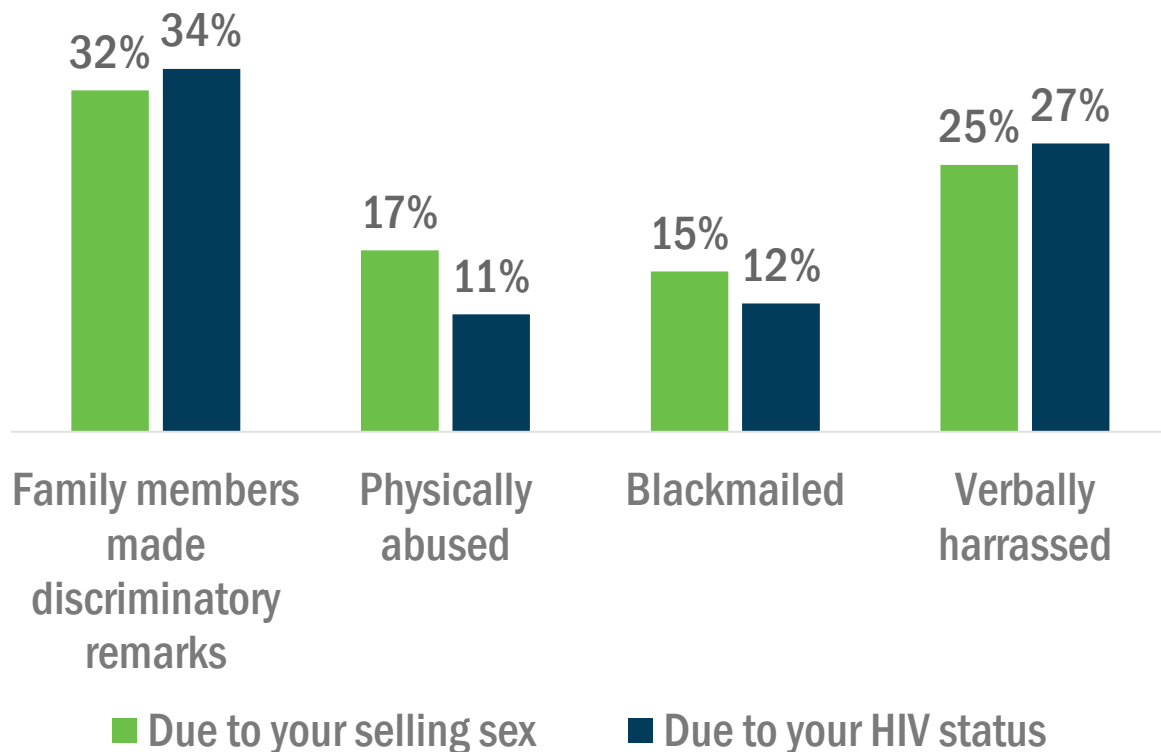
1. Documenting barriers/facilitators of HIV program success



- PLHIV Stigma Index: survey tool to quantify stigma and effects
 - Used for advocacy, inform service delivery
 - Developed by community & administered to PLHIV by PLHIV
 - Examples of stigma: gossip, social exclusion, physical harassment, inadequate/insensitive care

Effects of multiple and intersecting stigmas

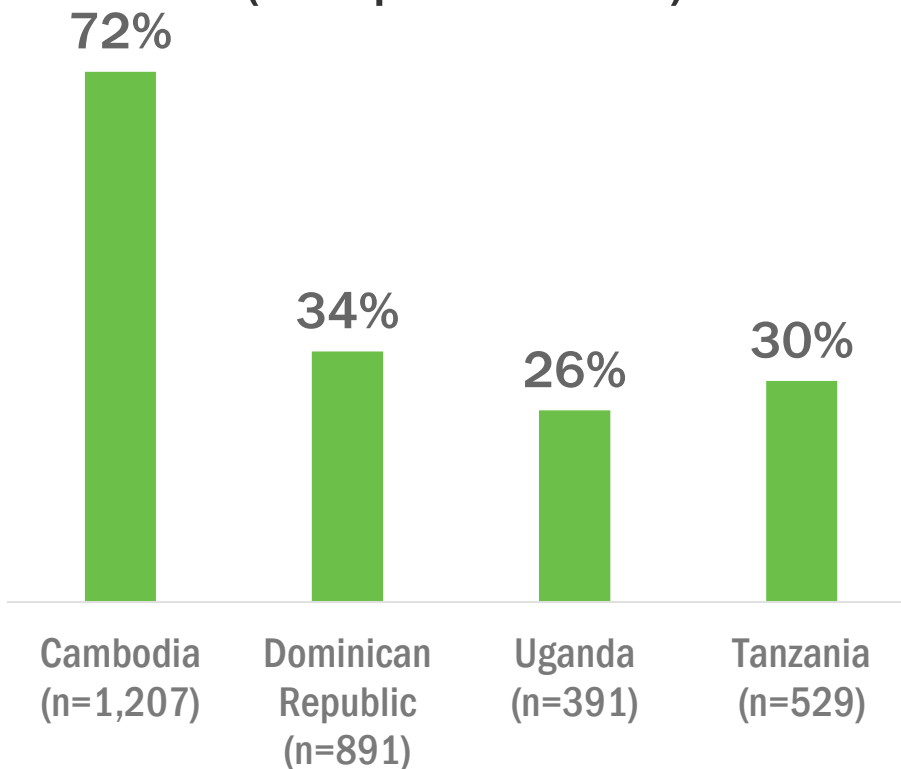
Stigma experienced by sex workers in the Dominican Republic (n=216)



Sex workers living with HIV in the DR reported stigma in healthcare services significantly more than did other women.

Internalized stigma is common and impactful

"I am ashamed that I am HIV positive."
(example scale item)



Higher internalized stigma was significantly associated ($p < 0.001$) with:

- Greater depression/anxiety (in all 4 countries)
- Lower current ART use (in the DR and Tanzania)

Geibel, S., A. Gottert, B. A. Friedland, K. Jeremiah, T. L. McClair, C. Mallouris, S. Kentutsi, J. Hows, L. Sprague, J. Pulerwitz, and the PLHIV Stigma Index 2.0 Study Group in Cambodia, the Dominican Republic, and Uganda. (2020). Internalized stigma among people living with HIV: assessing the Internalized AIDS-Related Stigma Scale in four countries, *AIDS* 34(Supp 1): S33-S41.

Understanding what leads to resiliency

- Factors at individual, interpersonal, and structural levels affect whether PLHIV report resilience

LEVEL	FACTOR	CAMBODIA (n=1,207)	DOMINICAN REPUBLIC (n=891)	UGANDA (n=391)
INDIVIDUAL	Internalized stigma	-0.28*	-0.31***	-0.41*
INTERPERSONAL	HIV-related stigma from close family	0.10	-0.73*	-1.44
STRUCTURAL/ POLICY	Awareness of legal protections for PLHIV in community	1.41***	0.62*	0.09

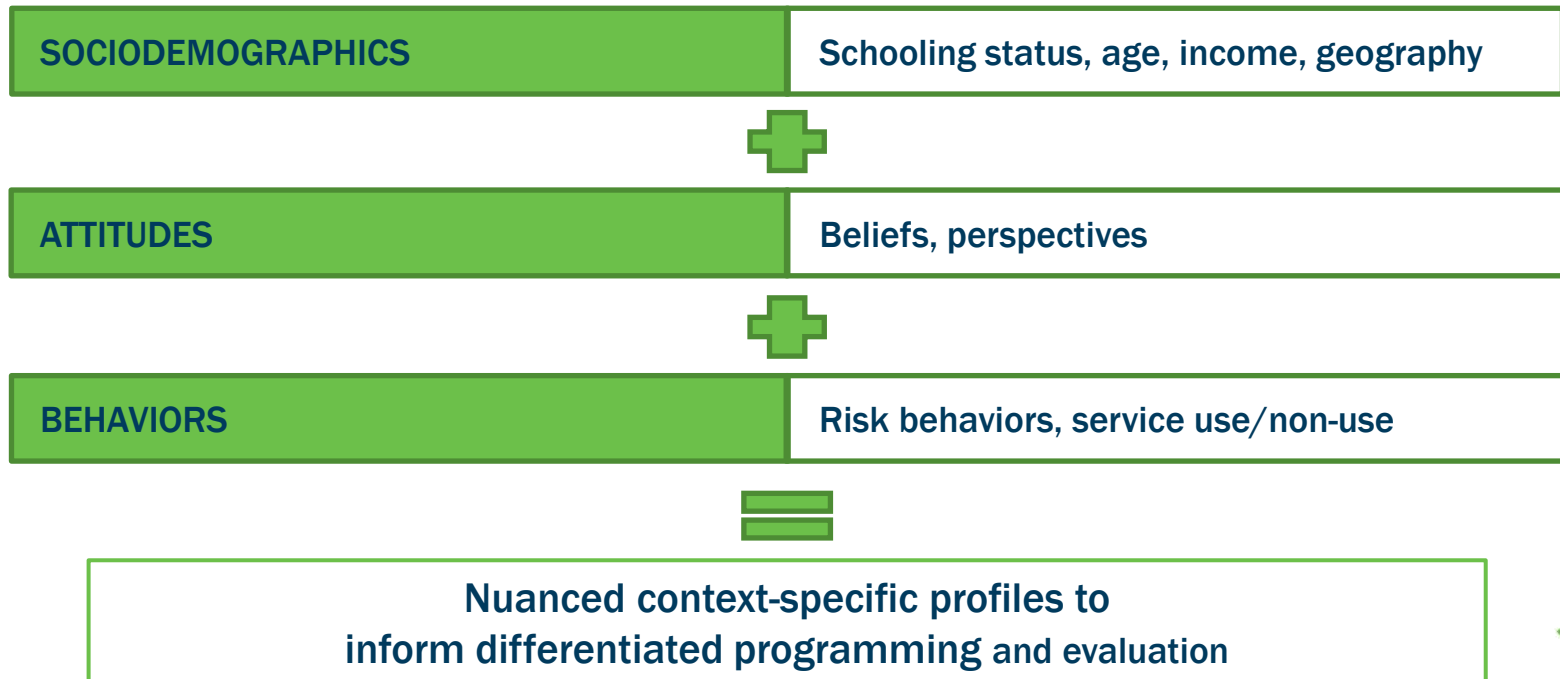
*p<0.05 **p<0.01 ***p<0.001

Beta coefficients from multivariate models, including controls for sociodemographic characteristics

Gottert, A., T. L. McClair, J. Pulerwitz, B. A. Friedland, and the PLHIV Stigma Index 2.0 Study Group in Cambodia, the Dominican Republic and Uganda. (2020) What shapes resilience among people living with HIV? A multi-country analysis of data from the PLHIV Stigma Index 2.0, *AIDS* 34(Supp 1): S19–S31; Gottert, A, B. Friedland, S. Geibel, L. Nyblade, S. Baral, S. Kentutsi et al. (2019) The people living with HIV (PLHIV) resilience scale: development and validation in three countries in the context of the PLHIV stigma index, *AIDS Behav* 23: 172–182.

2. Identifying who to prioritize reaching, where, and with what

- Innovative analysis (latent class analysis) for better identification of sub-groups even within high prevalence contexts
- Segmentation based on multiple characteristics



HIV risk profiles to tailor/target programming (men in South Africa; n=1,846)

- Distinct subgroups/profiles where not all have equal risk
- Risk profiles of older and younger men don't look the same
 - Differentiated programming



**OLDER
HIGH
RISK**
23%
of sample



**OLDER
LOW
RISK**
25%
of sample



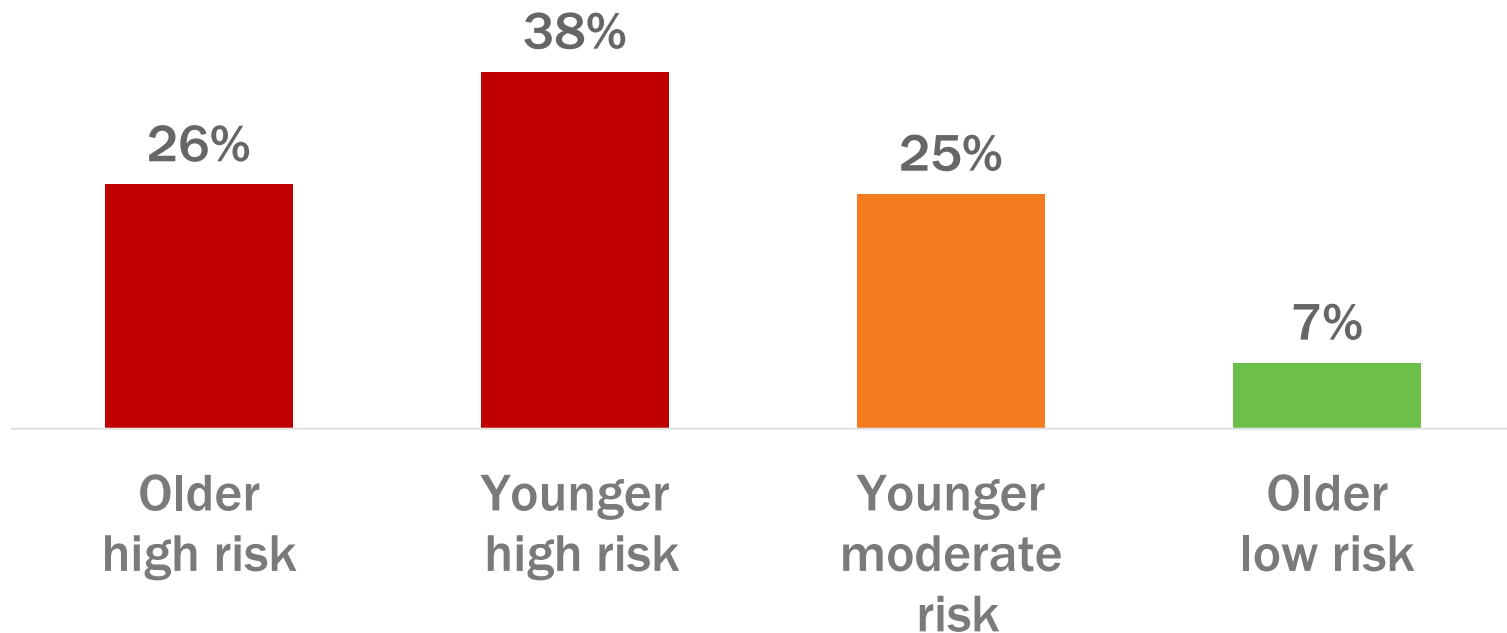
**YOUNGER
HIGH
RISK**
18%
of sample



**YOUNGER
MODERATE
RISK**
34%
of sample

Gender attitudes as major distinguishing factor

Highest-risk group = most gender-inequitable



Endorsement of highly inequitable gender norms

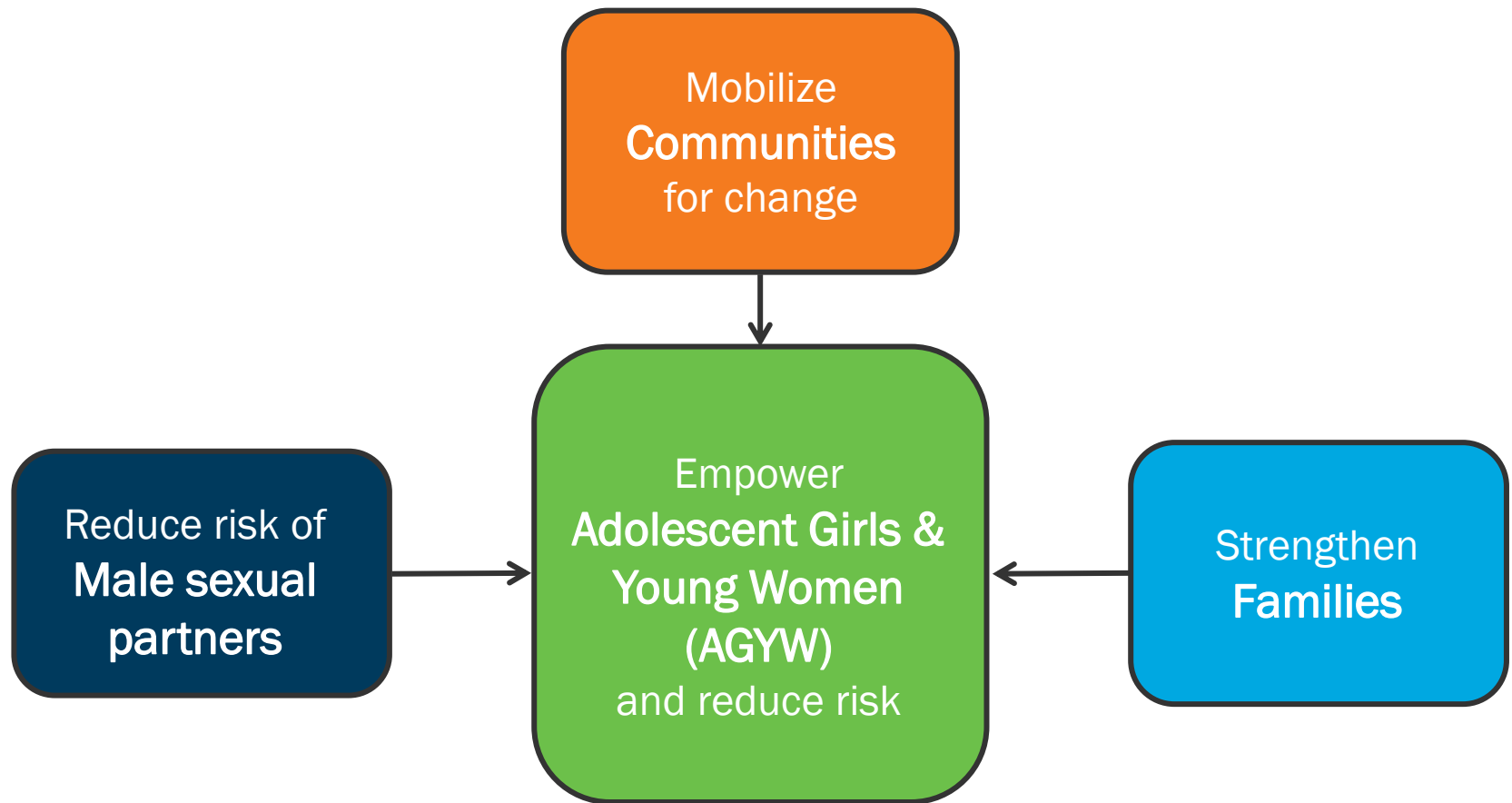
3. Assessing reach of programming

- Do programs identify and recruit most at-risk AGYW?
- Cross sectional surveys with AGYW recruited from DREAMS program rosters and within the community

Country	Kenya	Malawi	Zambia
Region	Kisumu County	Machinga & Zomba Districts	Lusaka & Ndola regions
Study sites	Urban & peri-urban communities	Rural communities	Urban communities
Sample size	1,778	1,653*	1,951

*Only recruited from DREAMS rosters

DREAMS package: Combination of “evidence-based” interventions layered in same location



Many at risk reached but gaps remained

- DREAMS reaching many at-risk AGYW
 - ✓ High STI experience
 - ✓ Multiple partnerships
 - ✓ Experienced sexual violence in the last 12 months
- Some sub-populations of AGYW not as well represented

	Zambia		Kenya	
	DREAMS	Non-DREAMS	DREAMS	Non-DREAMS
	%	%	%	%
Married	2	18	19	42
Sexually active	41	66	62	78
Alcohol use before sex	18	26	10	11
Consistent condom use	24	12	16	9

4a. Effects of innovative intervention: Improving access to treatment among FSWs

- Reaching key populations with ongoing care/treatment challenging
- Community-based ART promising strategy, but not approved in Tanzania
- Study to test feasibility/acceptability, and effectiveness of bringing HIV treatment to sex workers in community settings (e.g., mobile clinics, brothel-based)



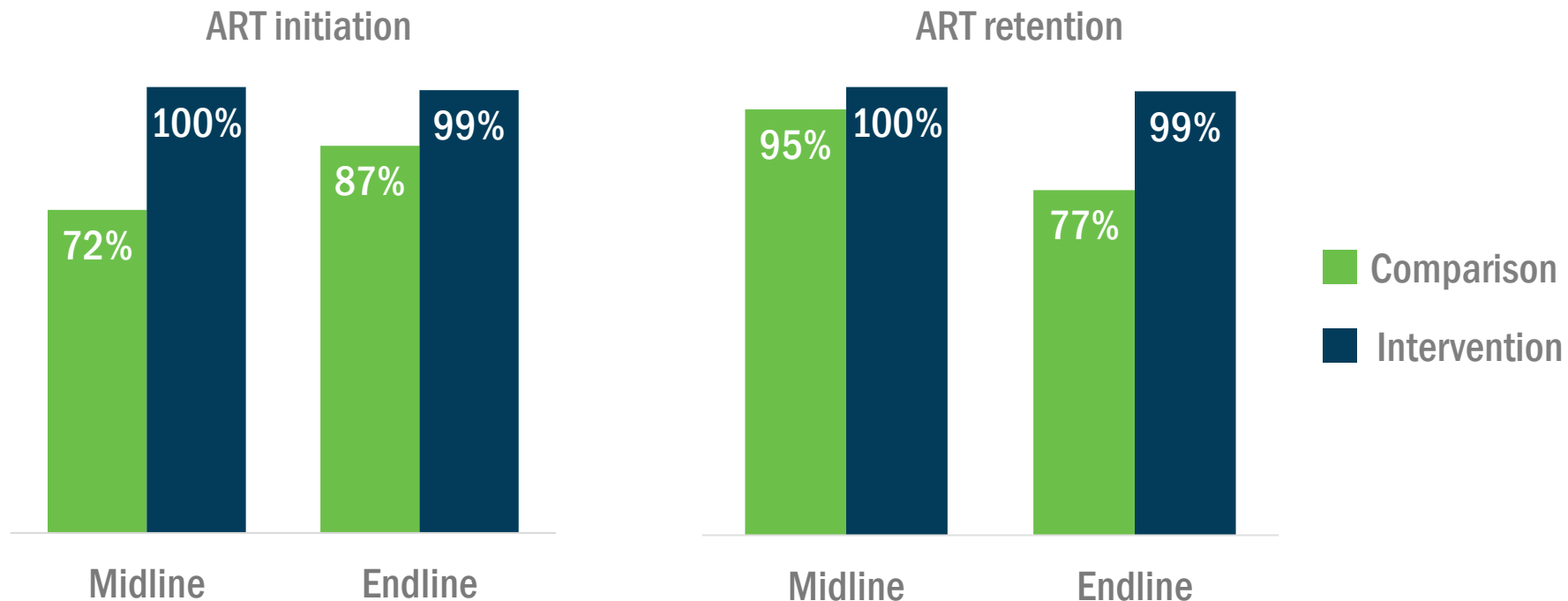
Methods and sample

Mixed-methods, quasi-experimental prospective cohort design

	Intervention (Njombe)	Comparison (Mbeya)
Baseline	n=309	n=308
Interviewed at 6 months	256 (83%)	253 (82%)
Interviewed at 12 months	265 (86%)	262 (85%)
Participants interviewed at BOTH 6 & 12 months	246 (80%)	234 (76%)
Participants who had viral load (VL) taken at:	84% (6 months) 76% (12 months)	96% (6 months) 87% (12 months)

- Loss to follow-up comparable across both arms
- Good participation in study VL testing

Community-based services successful in reducing HIV treatment barriers



Government of Tanzania used findings from this study with sex workers to inform national ART guidelines.

4b. Effects of innovative interventions: gender focused community-based programming to improve HIV service use

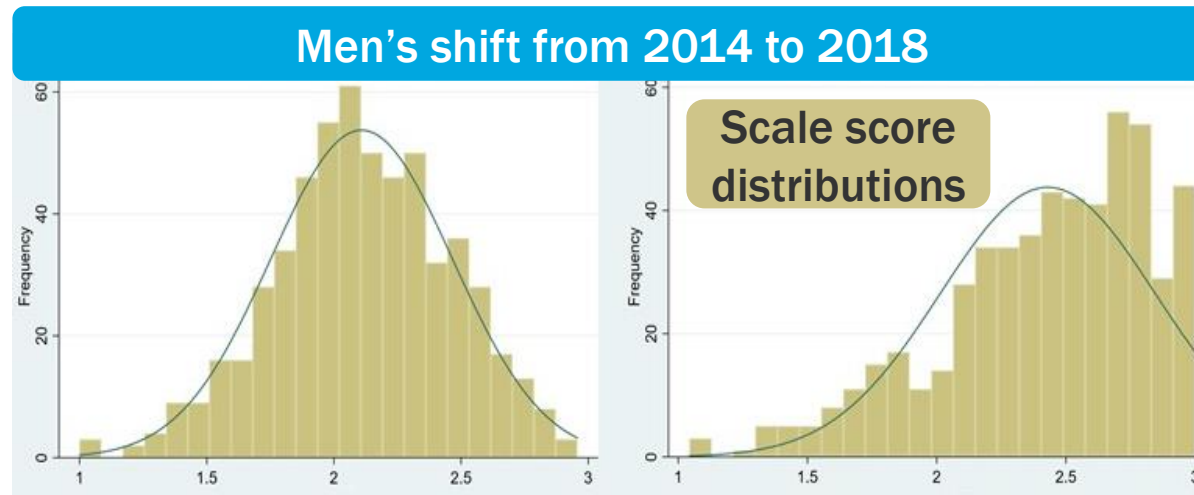
- At baseline, endorsement of inequitable gender norms associated with lower odds of treatment (ART) use

	HIV-positive WOMEN (n=122) aOR	HIV-positive MEN (n=48) aOR
GEM Scale (mean score, 23 items) Higher=more inequitable	0.2** (0.1, 0.5)	0.6 (0.1, 3.8)
Men's violence and control over women	0.3* (0.1, 1.0)	1.1 (0.2, 5.4)
Men as decision-maker in a couple	0.2** (0.1, 0.5)	0.3* (0.1, 0.9)
Men's toughness and avoidance of help-seeking	0.4* (0.1, 1.0)	0.8 (0.2, 4.1)

*p<0.05 **p<0.01 ***p<0.001; Controlling for age, marital status, education

Population-level shifts in gender norms found

- Cluster randomized controlled trial of Tsimba showed large increases in support for equitable gender norms in both intervention and control communities



Qualitative research suggested shifts were influenced by recent, rapid increase in access to media (satellite TV, smartphones)

Intervention led to decreases in partner violence

- Among women ages 18–29, the intervention was associated with half the odds of IPV
 - Adj. Odds Ratio 0.48 ($p < 0.05$)
- Qualitative findings:
 - Reduced IPV in intervention villages was attributed to couples learning to communicate more constructively through Tsimba
 - Broader shifts in norms may have been critical enabler of reduced IPV

I was not communicating with her...She was always complaining about it, arguing and sometimes I was abusing her physically when she complained, but Tsimba has changed that, we always communicate nowadays.

—Male community member

Note that analyses still underway for effects on HIV testing and treatment outcomes.

Concluding thoughts...

- Still notable challenges to address before global and US-based HIV epidemic under control
- Many similar issues put people at risk of HIV and inhibit service use/program success both globally and in the US— e.g., stigma, healthcare access, gender dynamics
- Lessons learned and strategies used globally can be applied in the US
 - E.g., Gender-transformational program for young men in Pittsburgh
 - *Miller, E., K. A. Jones, A. J. Culyba, T. Paglisotti, N. Dwarakanath, M. Massof, Z. Feinstein, K. A. Ports, D. Espelage, J. Pulerwitz, A. Garg, J. Kato-Wallace, K. Z. Abebe. (2020) Effect of a community-based gender norms program on sexual violence perpetration by adolescent boys and young men: A cluster randomized clinical trial. JAMA Netw Open. 3(12):e2028499.*



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