

Cascade of HIV prevention: A powerful tool to improve the implementation of multi-level HIV prevention in rural South Africa

Maryam Shahmanesh MRCP PhD

UCL Institute for Global Health and Africa Health Research Institute

STI and HIV 2019 World Congress, Vancouver, Canada

July 14th -17th 2019

No conflict of interest or
financial disclosures

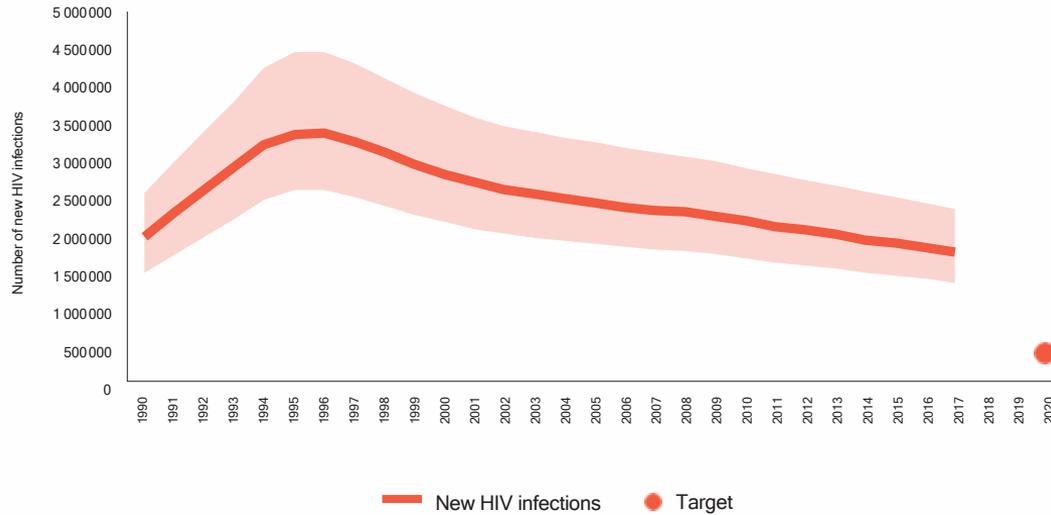
Outline

- Background
- Methods
- Key findings around cascade of multi-level prevention
- Participatory methods to improve the prevention cascade

Background

Insufficient progress on prevention

Number of new HIV infections, global, 1990-2017 and 2020 target



Multilevel HIV prevention intervention



Community

- Gender based violence
- Safe spaces
- School based interventions
- Community mobilisation



Household/family

- Family care intervention
- Social asset building
- Financial literacy



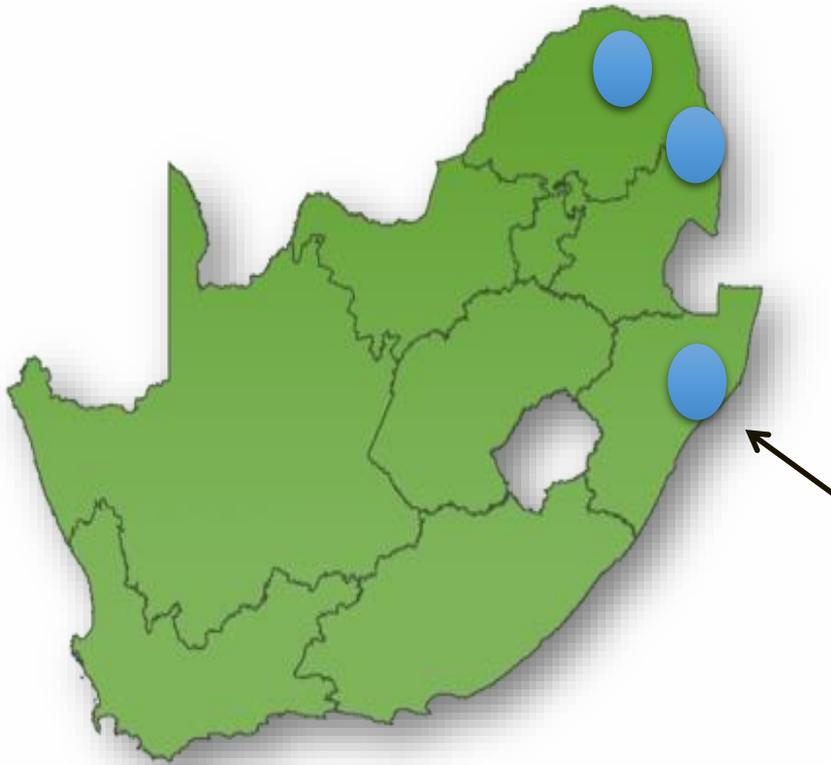
Individual

- Condoms (70%)
- Universal Test Treat, (100%)
- Pre-Exposure Prophylaxis (>96%)*
- SRH
- VMMC (60%)

Aim

To show how cascades of prevention can be used to iteratively co-create community-led interventions to improve demand, reach, and uptake of effective multilevel HIV prevention interventions

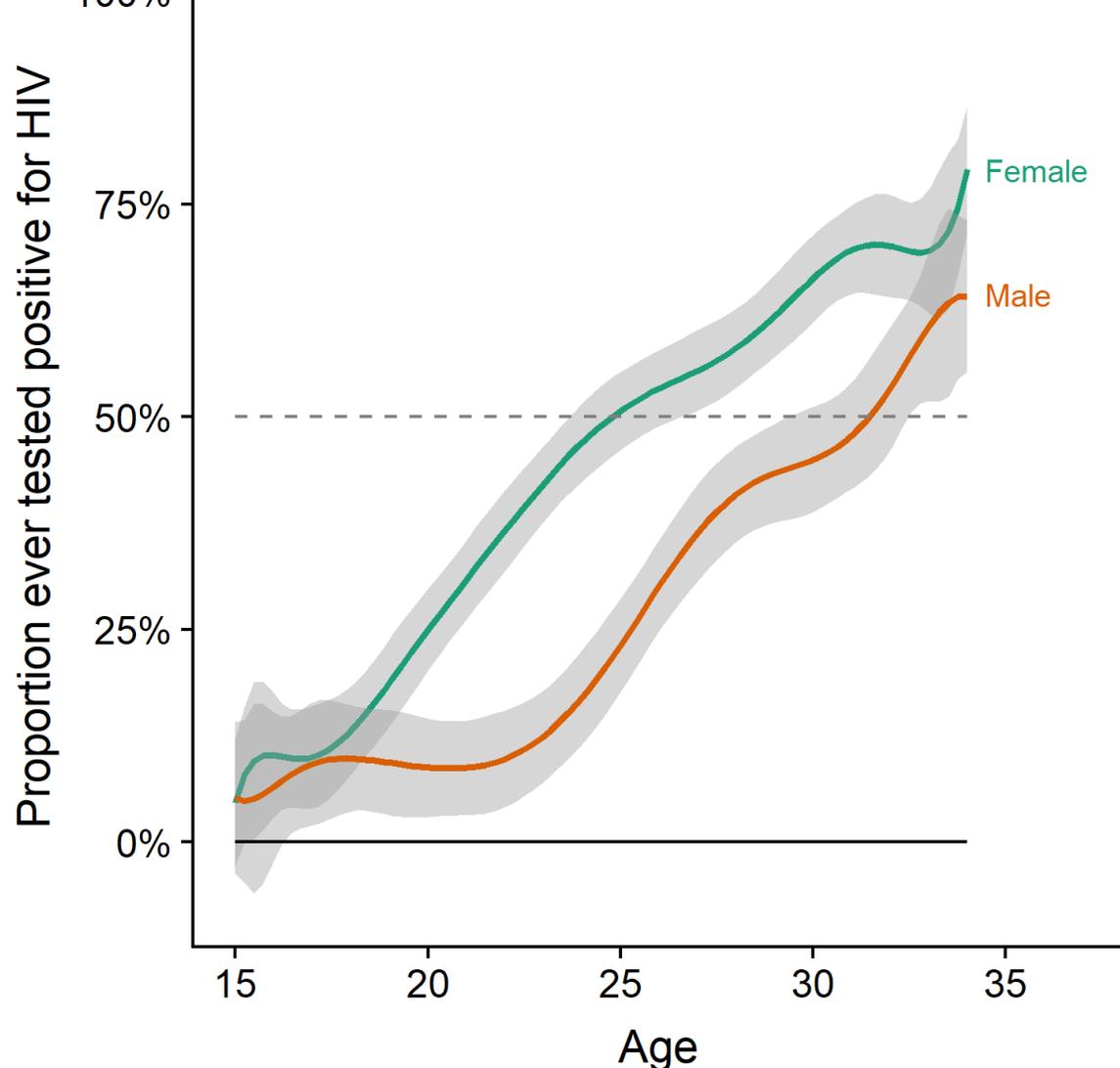
Setting



Africa Health Research Institute

*HIV Demographic Surveillance Site
Started in 2000 in KwaZulu-Natal
Pop: 125 000*

*1.5 million person years of follow up
Rural and high levels of unemployment*



*HIV
prevalence at
study location*

Methods

Methods

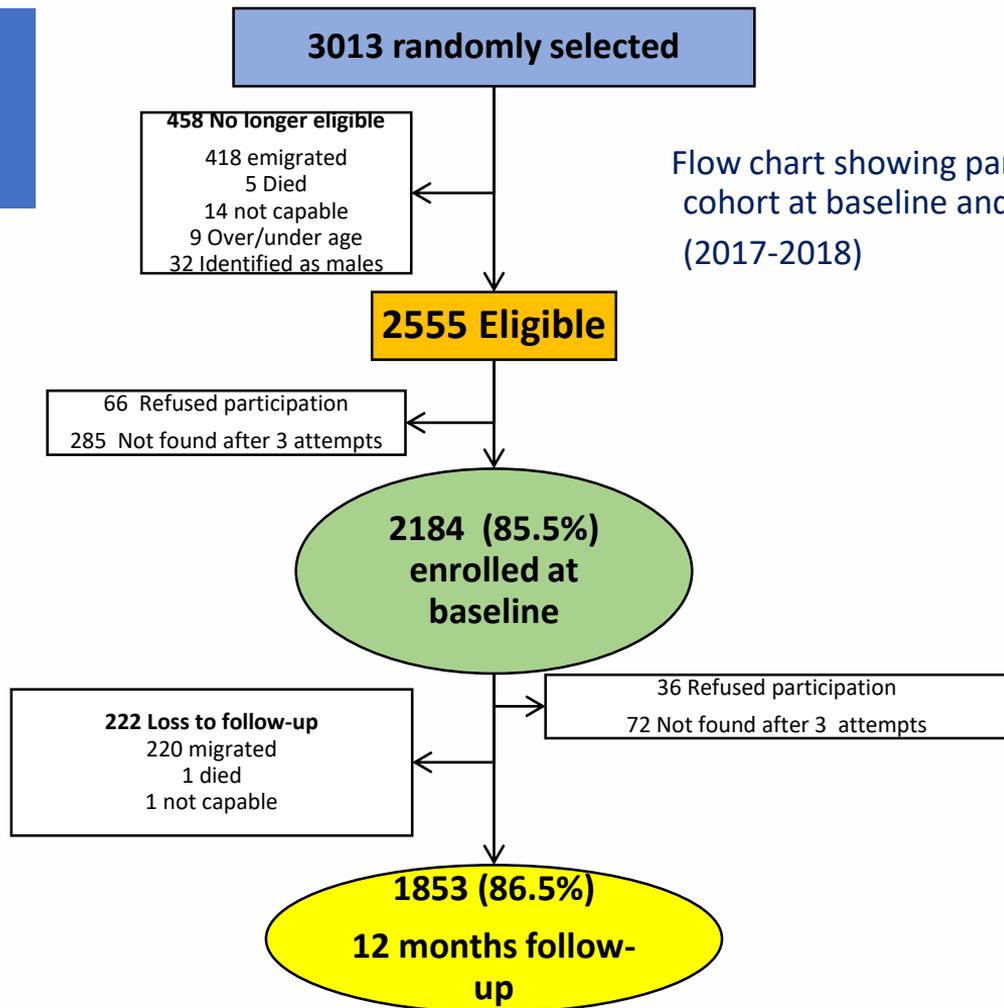
- Mixed method impact and process evaluation data collected as part of the DREAMS and MTV Shuga impact evaluation between 1/2016 and 6/2019.
 1. longitudinal cohorts of a representative sample of 13-35-year-old-females and males (n~5000): Measure population awareness and uptake of each of different components of multilevel HIV prevention interventions.
 2. (a) rapid ethnographic community mapping (b) provider and user interviews and (c) group discussion. All qualitative interviews were audio-recorded, transcribed and analysed using a thematic content analysis.
- Thetha Nami participatory co-creation with youth aged 18-30 a peer led intervention

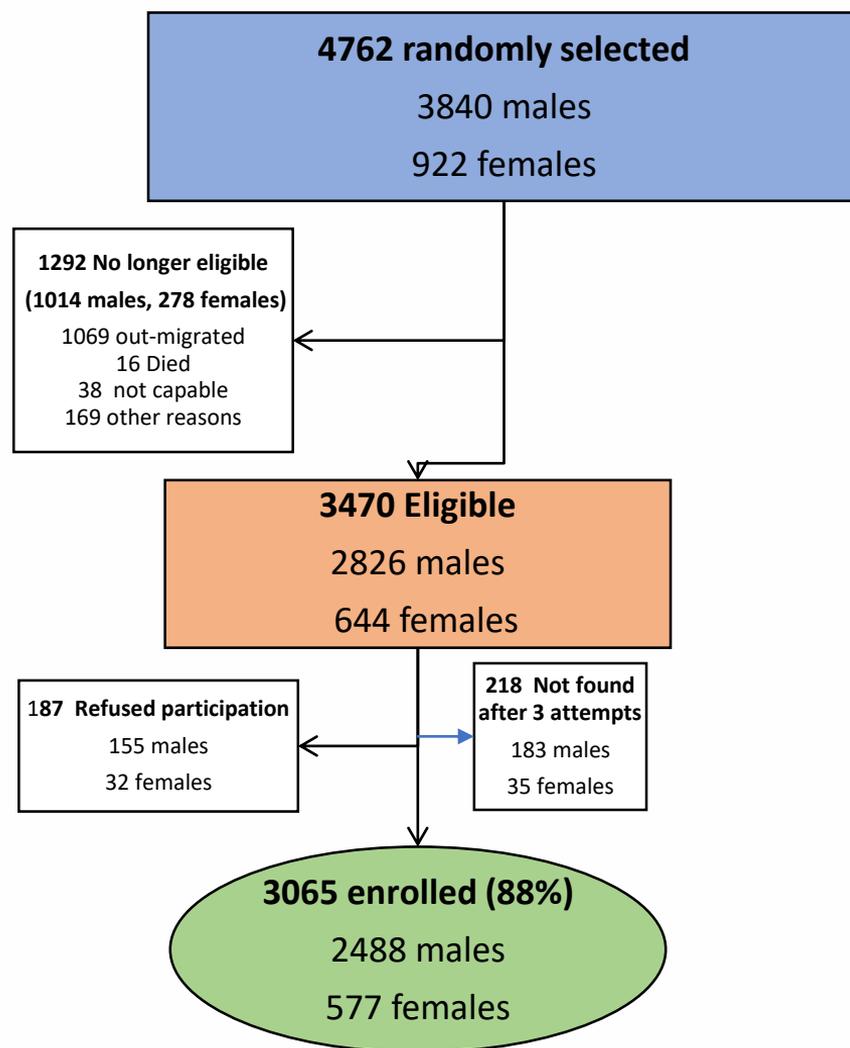
Results

Population

- 4918 males and females aged 13-35
- Rapid ethnographic community mapping (one urban, one semi urban and two deep rural)
- Qualitative cohorts with girls and women aged 10-24 years and boys and men aged 12 -35 years (n=58).
- Group discussions 29 group discussions with participants were aged between 13-26 years.
- Key informant interviews (n=60)
- Participatory co-creation (n=100)

Random Sample of
women aged 13-22





Nested cohort of men aged 13-30 and women aged 25-35 (2018)

Characteristics of young men (aged 13-30) and women (aged 13-35)

	All	Males		Females	
	N	n	%	n	%
Total	4918	2488		2430	
Age group, 2018					
13-17	1886	940	37.8	946	38.9
18-24	1800	838	33.7	962	39.6
25-29	851	329	13.2	522	21.5
30-35	381	381	15.3		
Rural	3039	1494	60.4	1545	64.1
Migration					
Never	3453	1745	70.4	1708	70.3
Within PIPSA	479	216	8.7	263	10.8
External migration	975	518	20.9	457	18.8
Ever had sex	2644	1368	55	1276	52.5
Ever been pregnant	1044			1044	43
Food insecurity			31%		

Uptake of HIV prevention.

Implementation of combination (multi-level) prevention through Determined Resilient Empowered AIDS Free and Safe (DREAMS) and She Conquers

Multi-level (DREAMS) HIV prevention intervention

28 implementing partners across 3 sectors



Community

Gender based violence/community mobilization
Safe spaces /social protection
School based interventions



Household/family

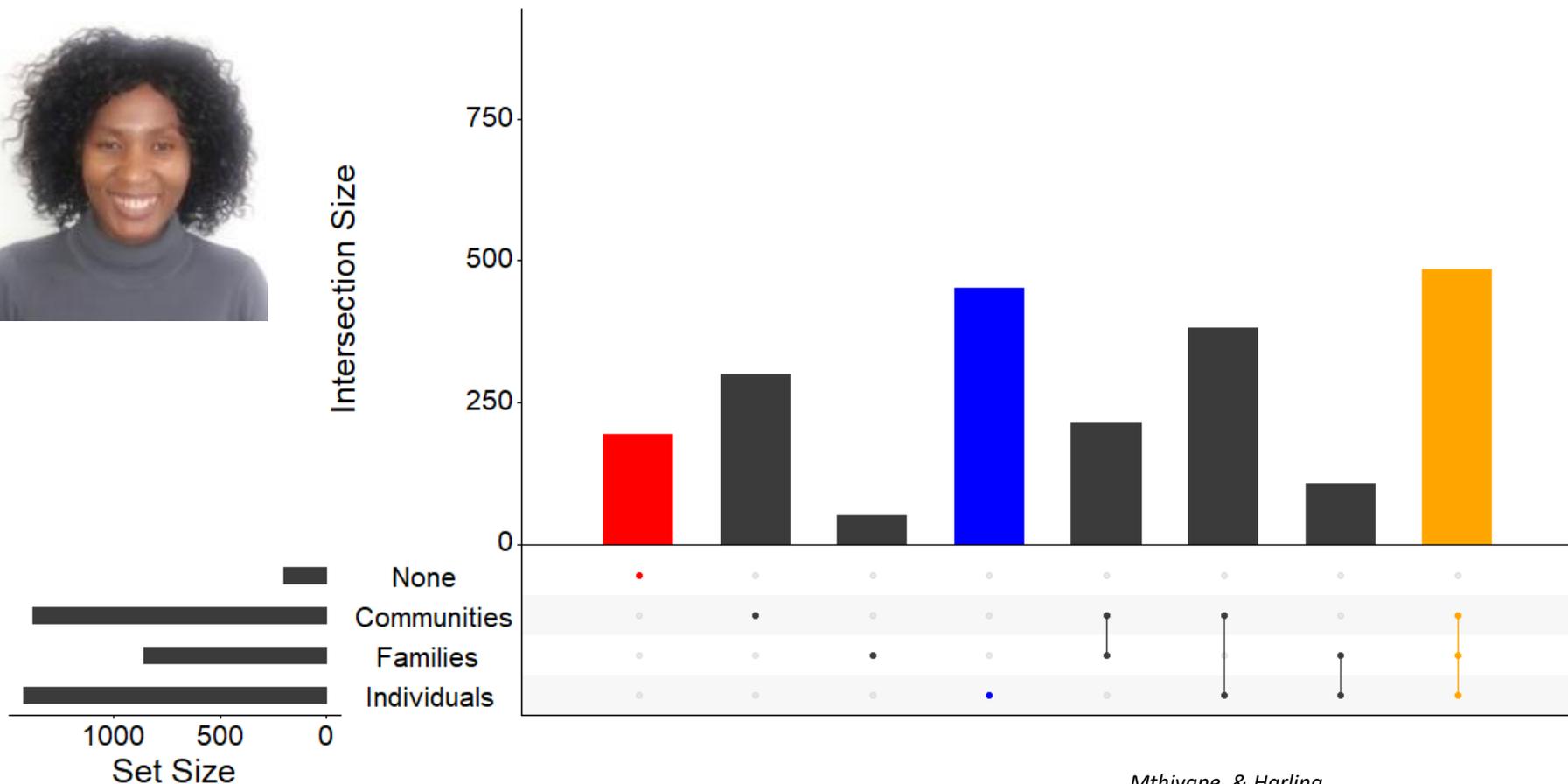
Family care intervention
Social asset building
Financial literacy



Individual

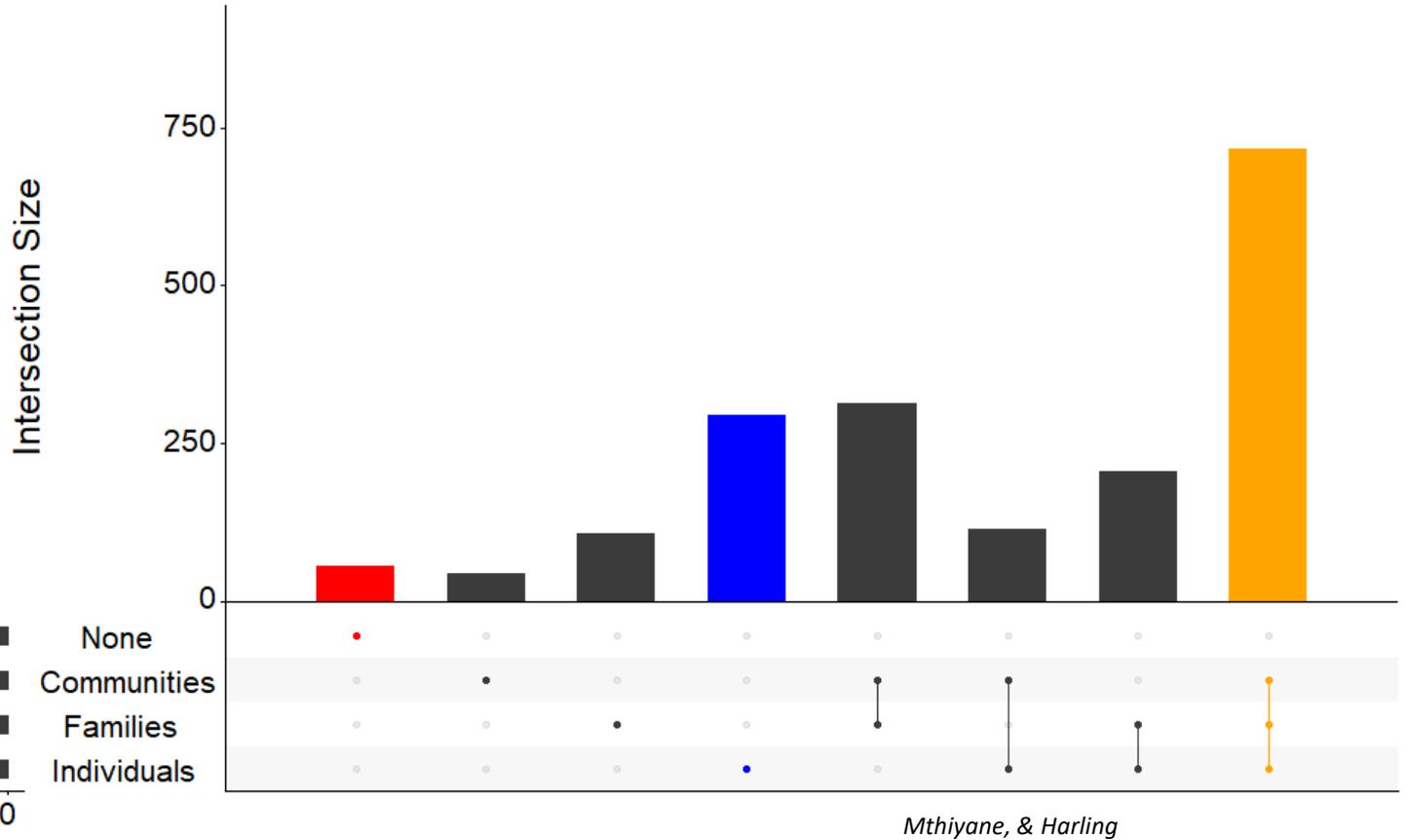
Condoms
HIV test,
Pre-Exposure Prophylaxis (FSWs)
Universal Test Treat,
SRH and VMMC (through DoH services)

Use of any multilevel intervention 2017

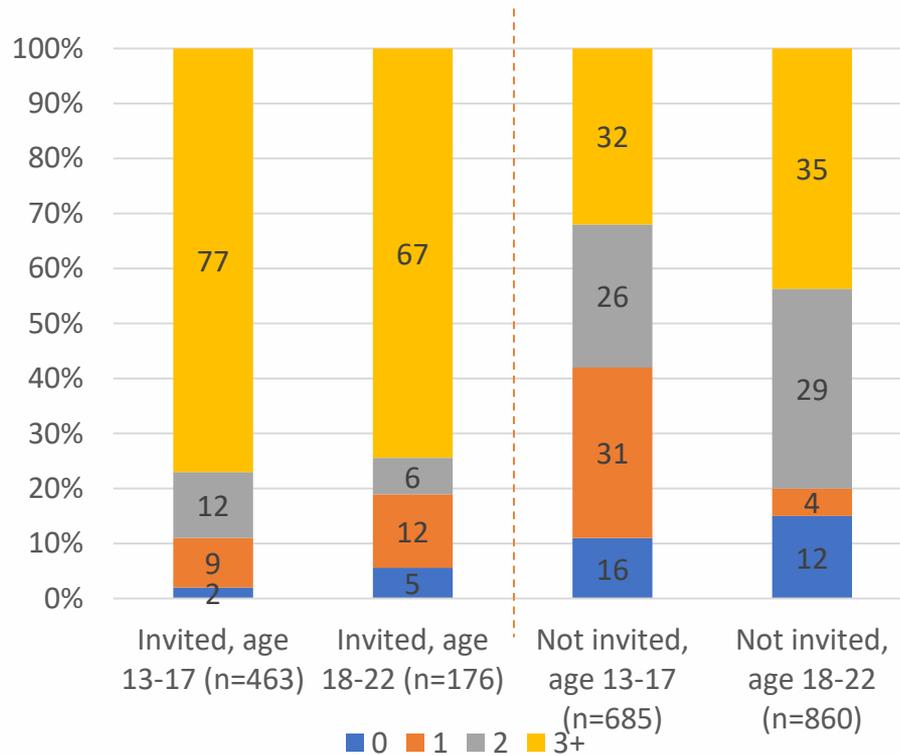


Mthiyane, & Harling

Use of any multi-level intervention 2018



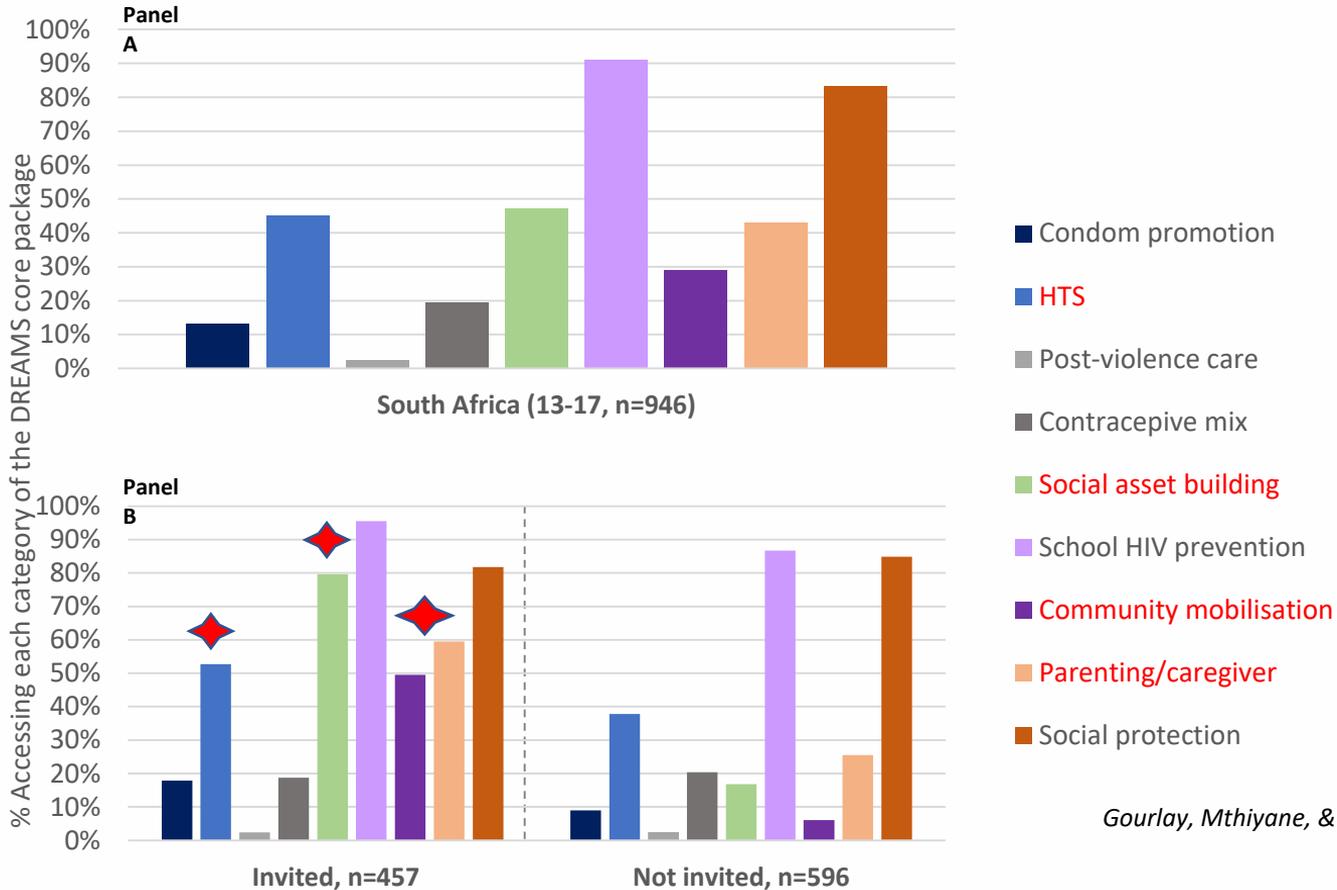
No. services received in last 12 months:
by age & invitation to participate in DREAMS (AGYW cohorts)



High proportion of AGYW invited to participate in DREAMS have accessed ≥ 3 services

Gourlay, Mthiyane, & Birdthistle submitted

Uptake* of categorised interventions of the DREAMS Core Package in South Africa in 13-17 year olds overall (panel A), and by invitation to participate in DREAMS (panel B)**

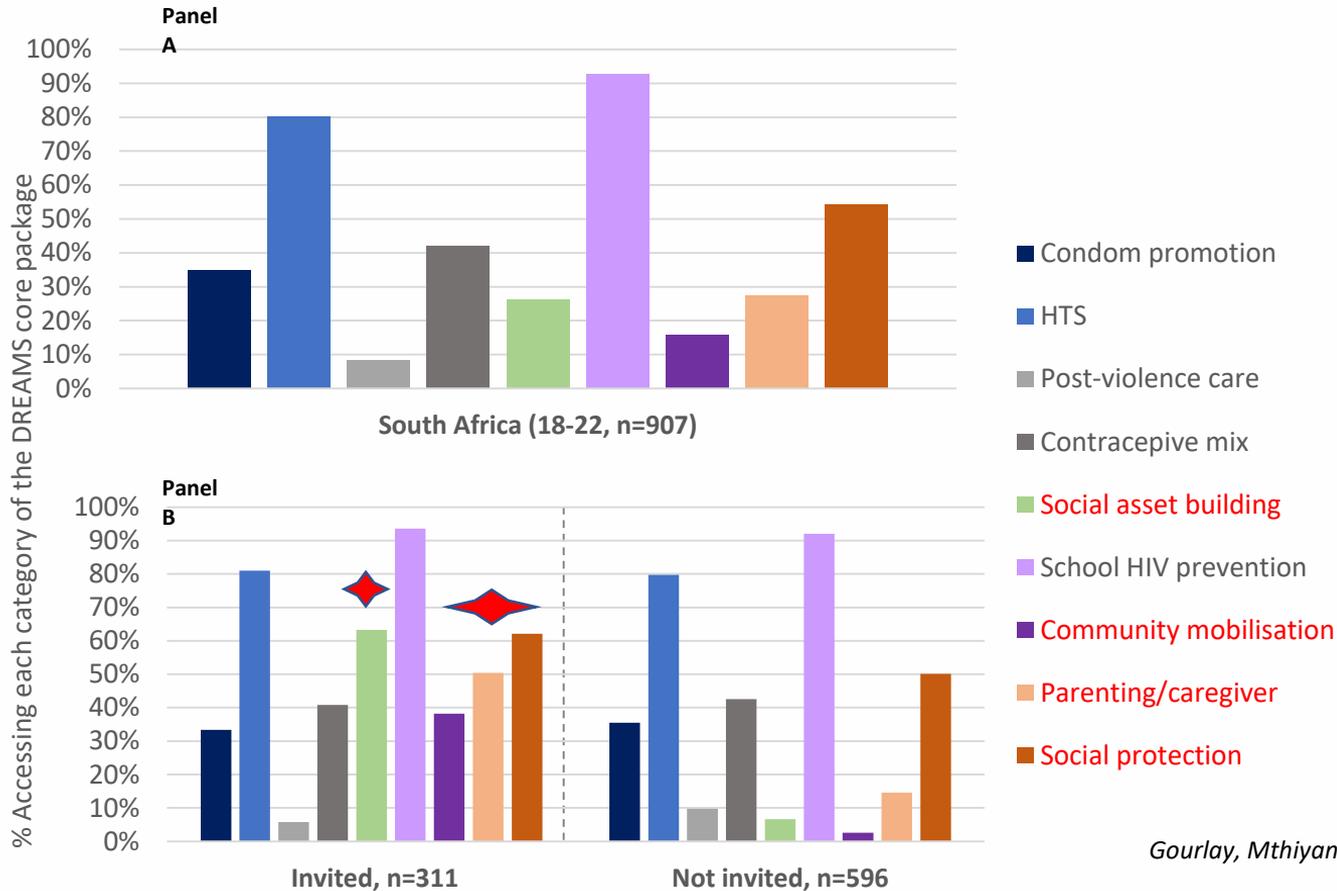


Gourlay, Mthiyane, & Birdthistle submitted

*Participated *in the last 12 months* (dataset from 2018); Uptake regardless whether or not the intervention was identified as a 'DREAMS programme'

**Interventions aligned with PEPFAR Core Package outlined to countries in 2015

Uptake* of categorised interventions of the DREAMS Core Package in South Africa in 18-23 year olds overall (panel A), and by invitation to participate in DREAMS (panel B)**

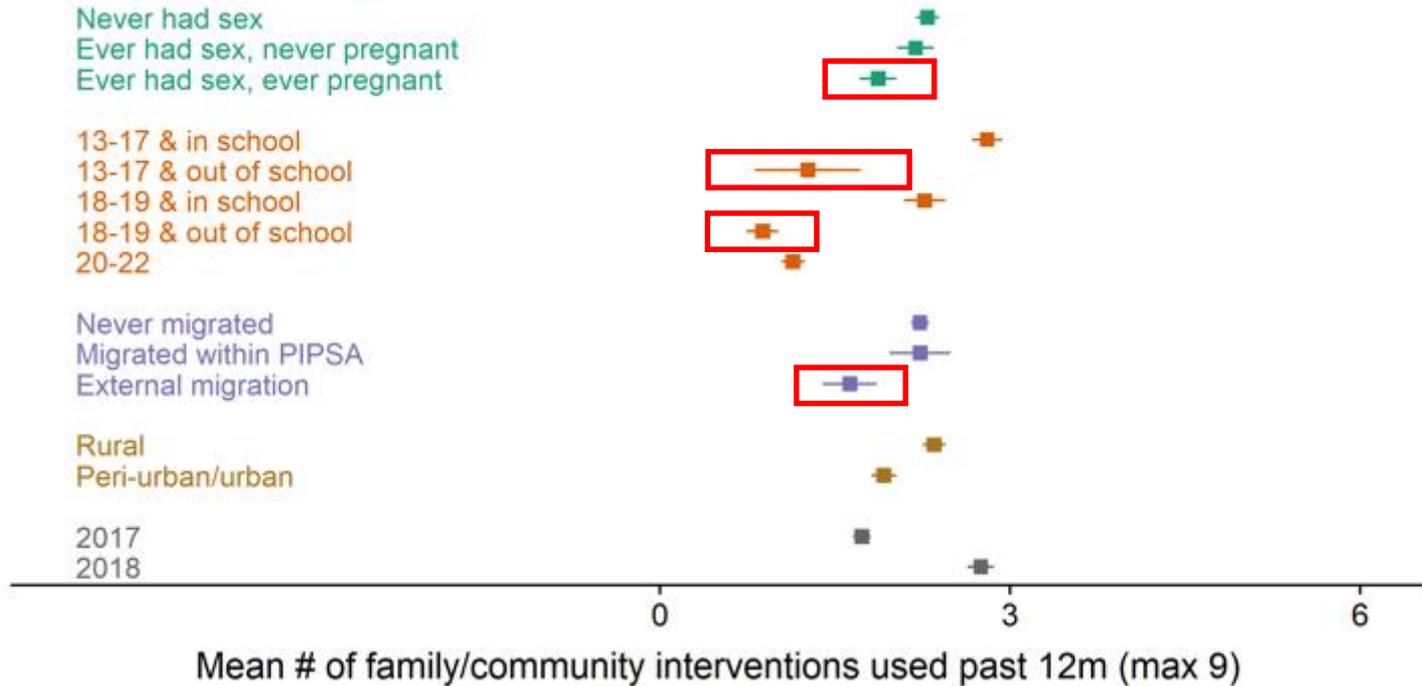


Gourlay, Mthiyane, & Birdthistle submitted

*Participated *in the last 12 months* (dataset from 2018); Uptake regardless whether or not the intervention was identified as a 'DREAMS programme'

**Interventions aligned with PEPFAR Core Package outlined to countries in 2015

Groups less likely to access interventions

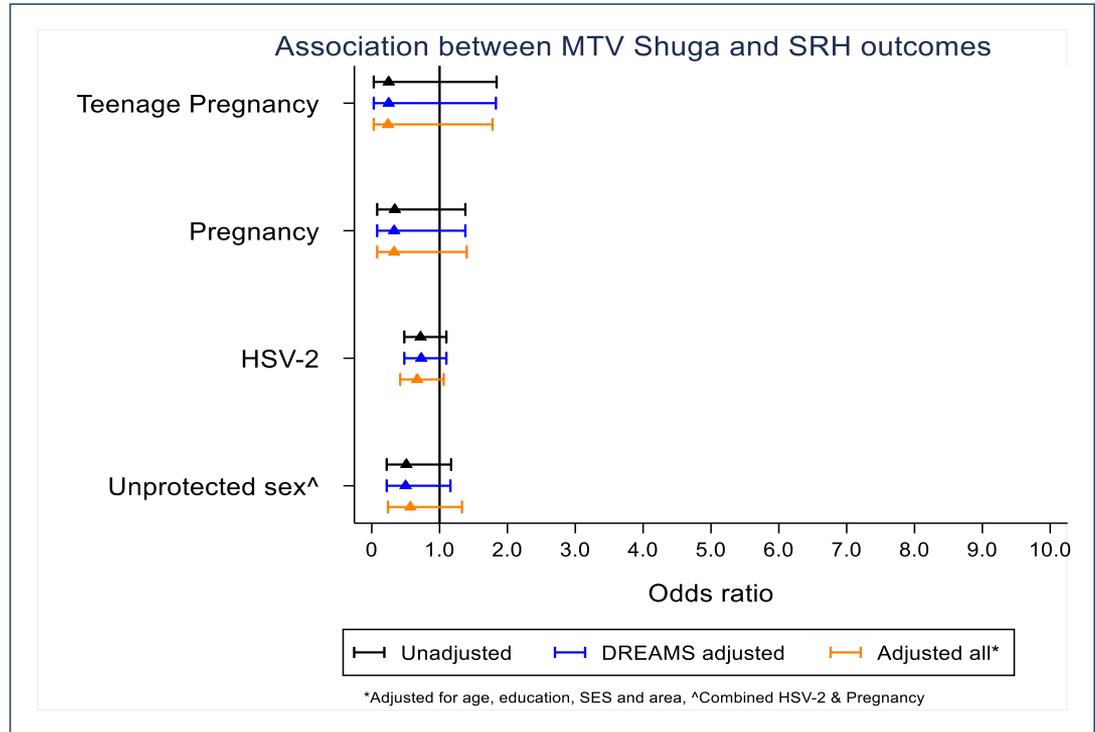


Mthiyane, & Harling

Mass media campaigns and edu-dramas

Exposure was low in this rural setting

8% had seen any of the episodes

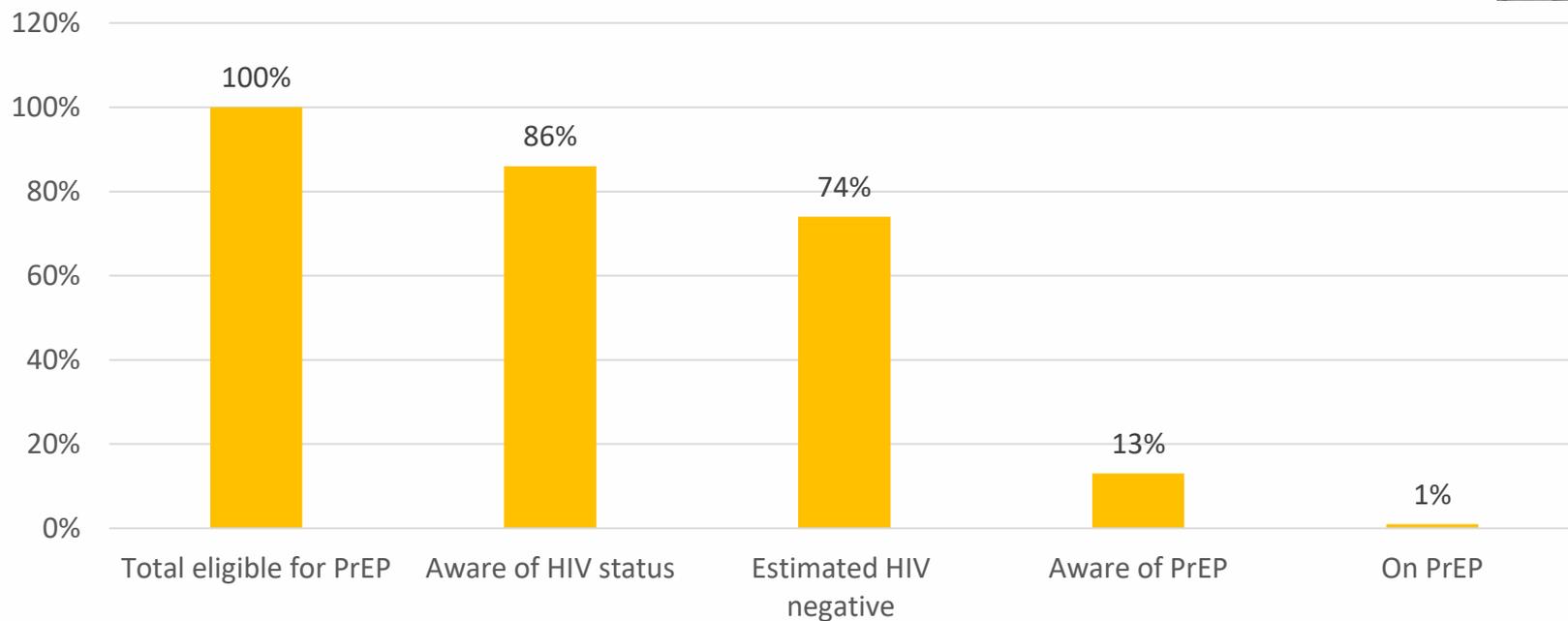


Uptake of interventions at population level in 2018

	All		Males		Females	
	N	n	%	n	%	
Total	4918	2488		2430		
Aware of HIV status	2716	1252	50.4	1464	60.3	
Ever had sex	2644	1368	55	1276	52.5	
Ever been pregnant	1044			1044	43	
Condom use at last sex	1463	775	56.7	688	53.4	
Currently using contraceptives	924			924	39.9	
Ever participated in Voluntary medical male circumcision (VMMC)	1417	1417	57.1			
Participated in VMMC in the last 12 months	643	643	45.4			



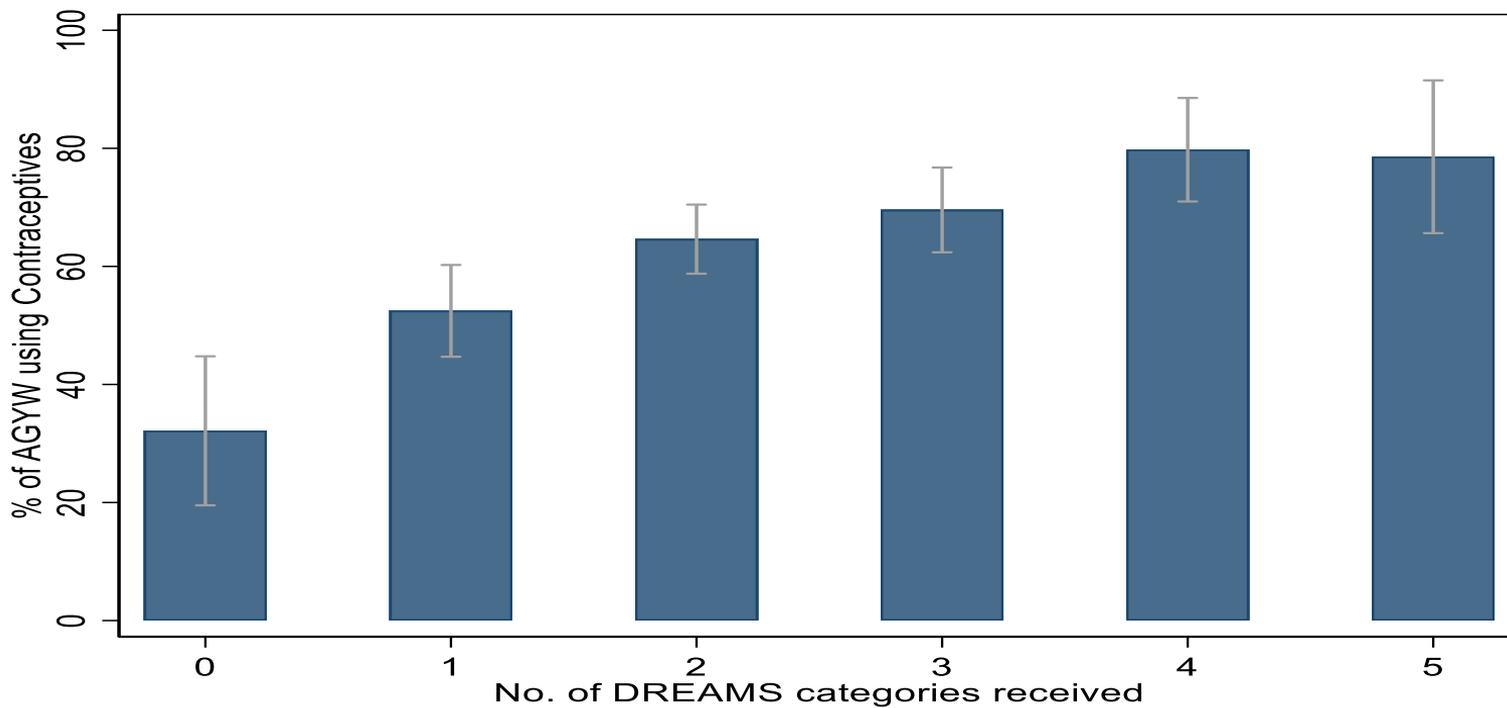
HIV prevention cascade for PrEP eligible adolescent girls and young women n=194



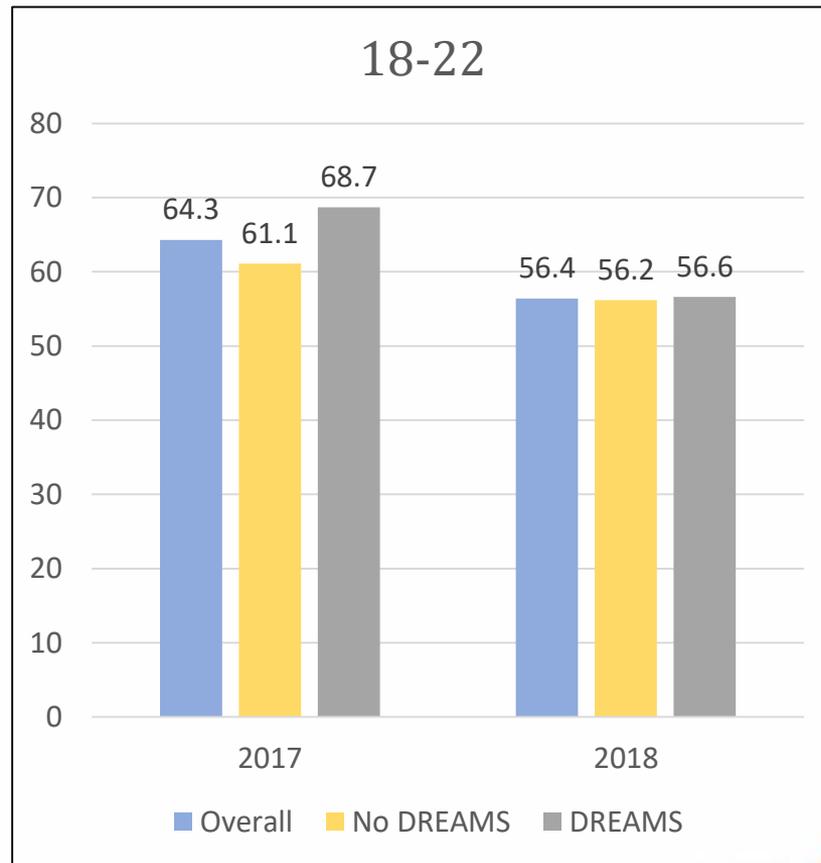
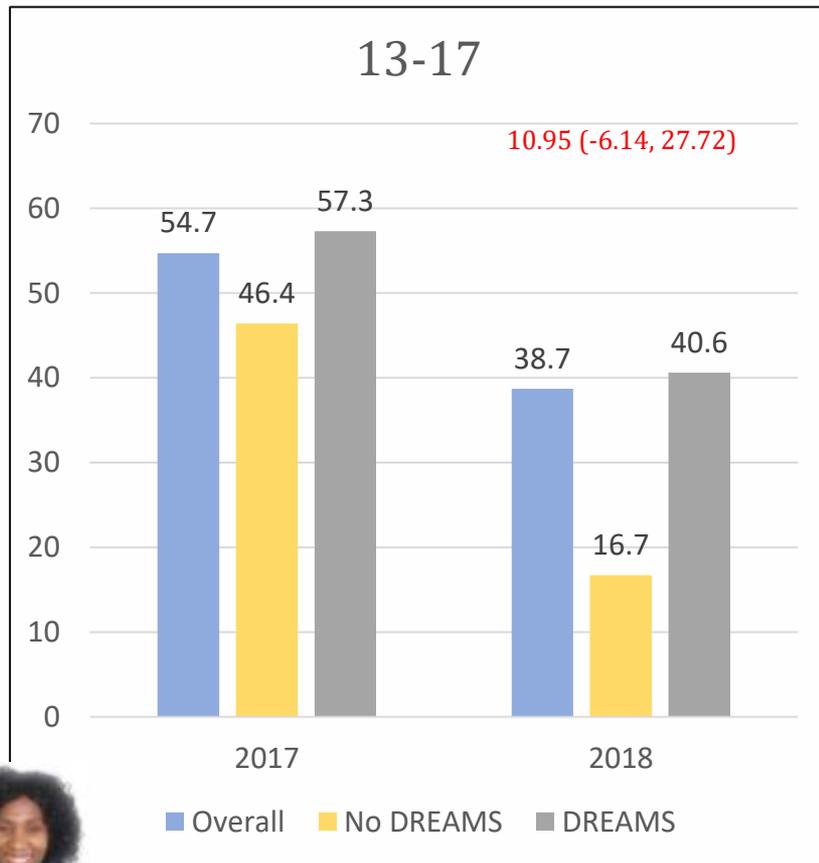
■ Adolescent girls and young women involved in transactional sex and eligible for PrEP n=194

Chimbindi

Contraception uptake and DREAMS



Contraception use by HIV prevention uptake



What are the challenges to multi-level prevention?

There are other health and psychosocial issues that matter more and are not seen to be incorporated in the DREAMS intervention

Unmet sexual and reproductive health need

	Women aged 15-24 - % (95% CI)	Men aged 15-24 - % (95% CI)
Chlamydia*	11 (7-16)	5 (3-9)
Gonorrhoea*	3 (1-8)	2 (1-5)
Trichomonas*	5 (3-8)	0.6 (0.1-4)
HSV2	30 (23-35)	17 (11-24)
Bacterial vaginosis	42 (35-49)	NA

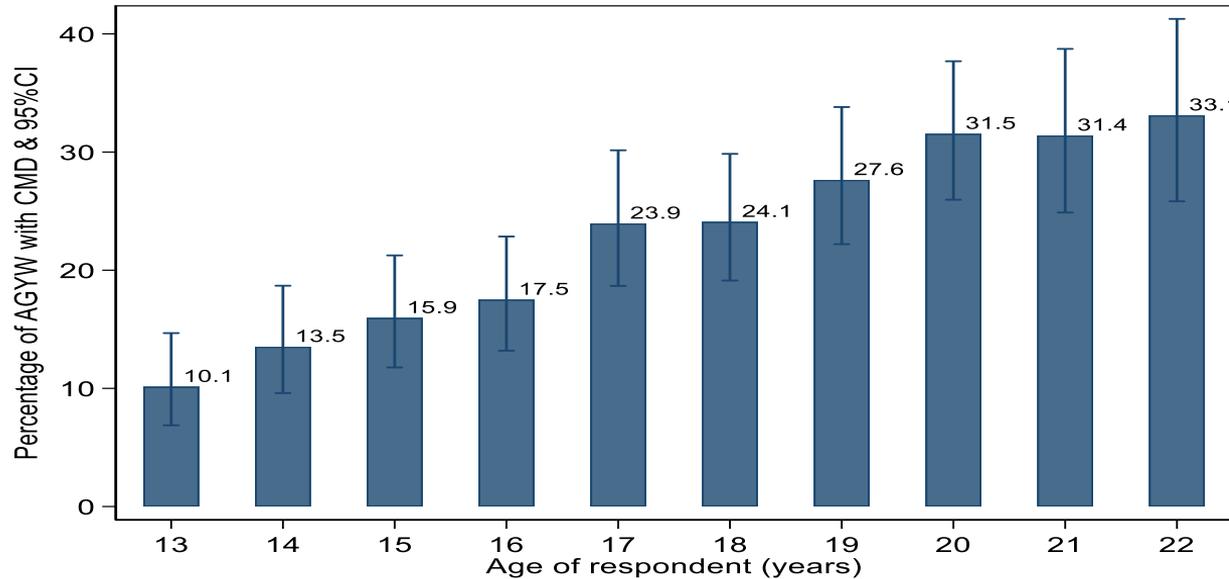
*One in five any treatable STI
Francis et al (Plos med 2018)

N= 2184 females aged 13-22 median follow-up time=6 months, IQR (5 - 7)

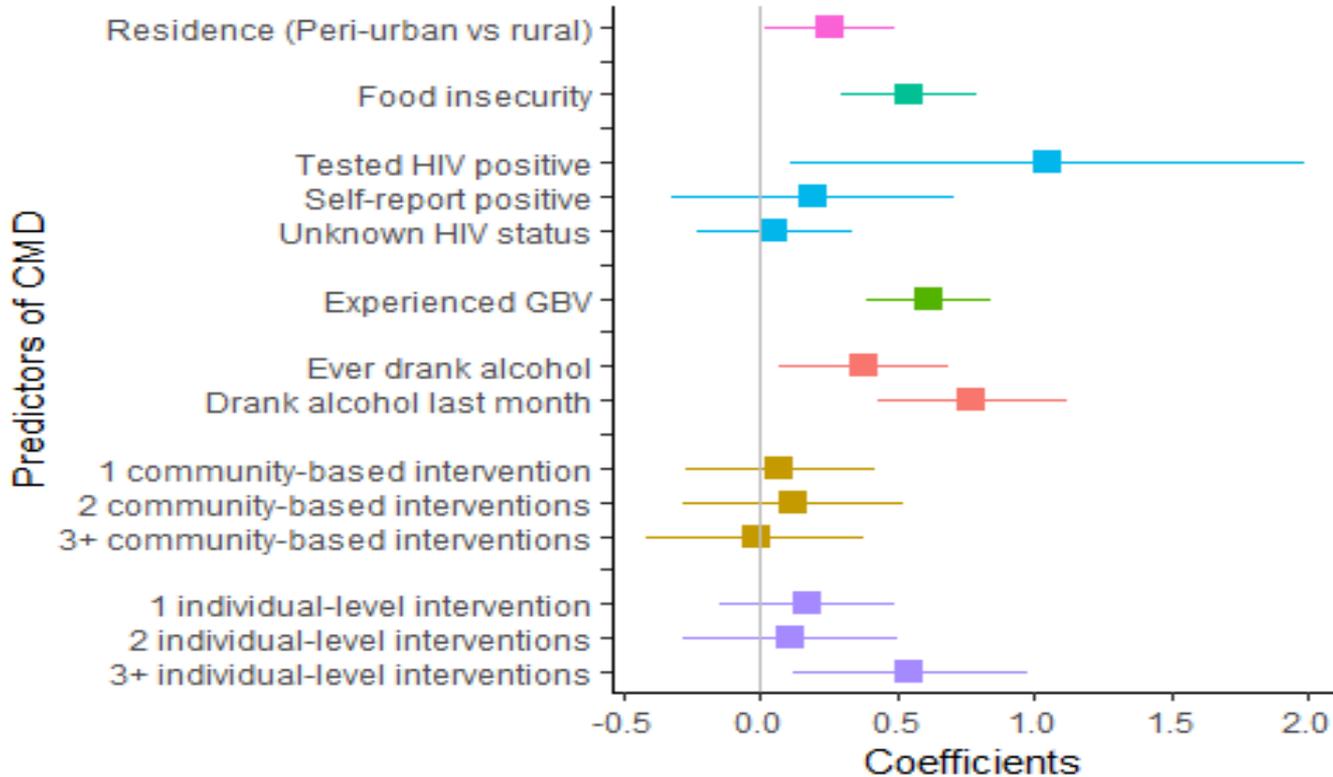
	Cases	Follow-up months	Incidence Rate / person year (95%CI)
HSV 2	70	7450	11.3 (8.9-14.3)
Teenage pregnancy	43	8076	6.4 (4.7-8.6)

73% were asymptomatic and so wouldn't be treated through syndromic approach to sexual health

Unmet mental health need



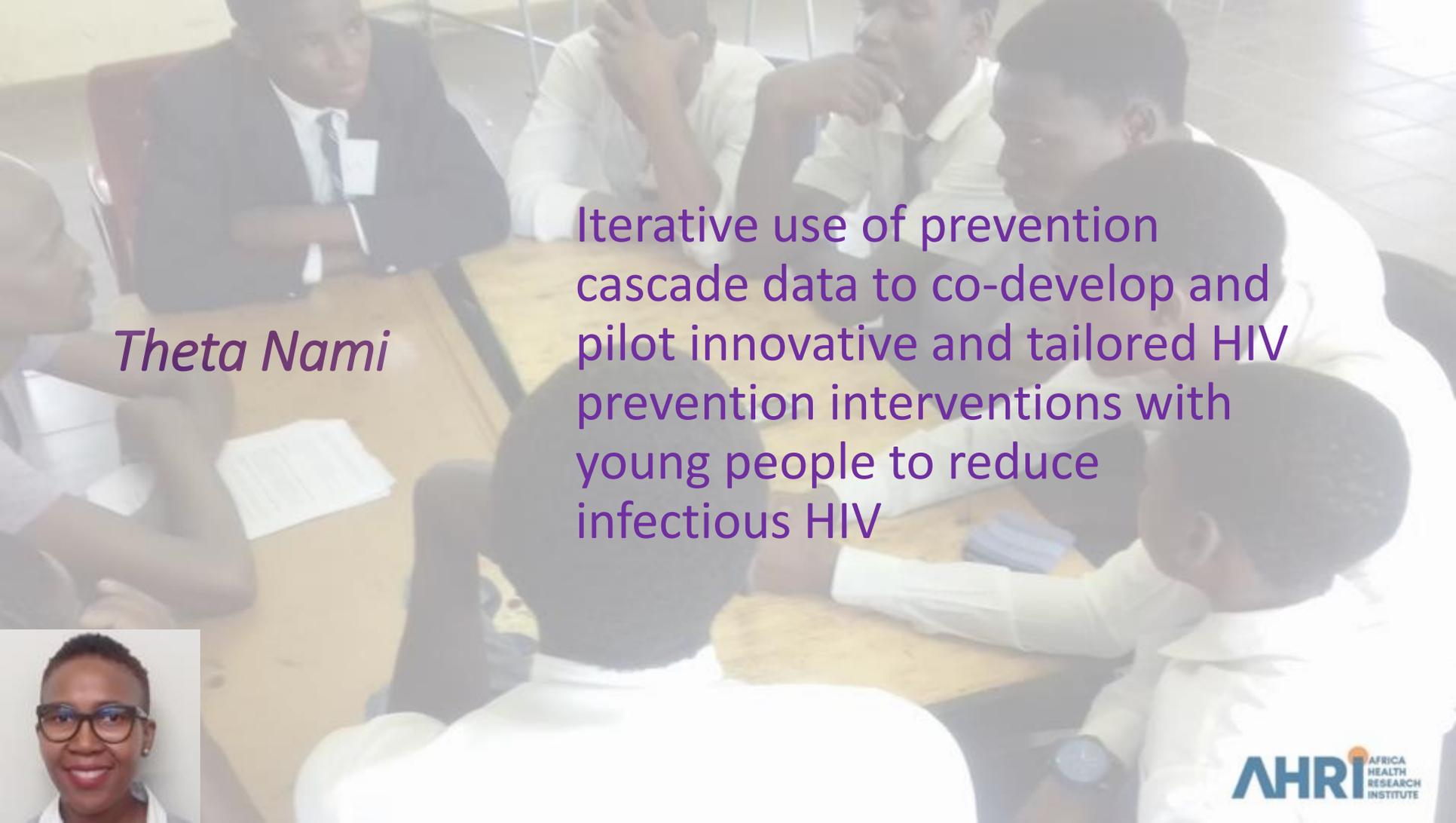
Factors associated with CMD



Mthiyane,

Adjusted for Age, migration, education, SES, pregnancy history and uptake of DREAMS individual & community-based interventions

Can we optimize implementation of combination (multi-level) prevention?

A group of people, including men and women, are seated around a wooden conference table in a meeting room. They are engaged in a discussion, with some looking at documents on the table. The scene is dimly lit, with a soft light source from the side.

Theta Nami

Iterative use of prevention cascade data to co-develop and pilot innovative and tailored HIV prevention interventions with young people to reduce infectious HIV



Thetha Nami peer navigator intervention

- Community recruitment was good (n=100)
 - Program was seen to be beneficial
 - Challenge to get men and younger women
- 12 weeks of training and two participatory workshops
- Young people were able to engage creatively with the evidence and develop interventions
- Intersection of socioeconomic, gender and age inequity



Building a Theory of Change

Based on the cascade of care

Thetha Nami underlying drivers



Community

Stigma

Unemployment & Mobility

Lack of social cohesion

Low uptake of community interventions



Individual

Poor mental health

Low uptake contraception/condoms

Low SRH knowledge (but fertility matters)

Alcohol and transactional sex normative



Biological

High community viral load in young men and women

Low condom use

High burden of STIs and BV

Thetha Nami HIV prevention pathways to change



Community

Increase demand and support for accessible prevention

Enabling environment

Group efficacy (Social resilience and cohesion)
Adapt intervention to context



Individual

Increase demand for prevention

HIV status neutral interventions

Increase SRH knowledge
Address wider health concerns
Increase self efficacy



Biological

Improve accessibility of biomedical interventions

Reduce STIs

Increase uptake and retention in biomed interventions

Thetha Nami HIV prevention intervention



Community

Increase demand and support for accessible prevention

Identify youth champions

Map and navigate health and social welfare

Mentoring

Self help youth groups and activities



Individual

Increase demand for prevention

Promote mental and sexual health

HIV status neutral care/ U=U promotion

Condom promotion

HIV self test



Biological

Improve accessibility of biomedical interventions

Peer-led community healthcare delivery

Embed in sexual health care

STI self sample, test and treat

Thetha Nami peer navigator intervention



57 peer navigators recruited and trained

24 area based peer navigators

100% retention at six months



Peer navigator activities – 3 months

5000 encounters

70 encounters/ per peer navigator working month



4511/ 4957 (91%) agree to engage

30000 condoms and 2389 HIV-ST distributed

3230 referrals made

300 people aged 18-30 attend sexual health and HIV care or prevention

Men > women

70% prefer mobile clinic

Conclusions

- Scaling up a complex multilevel intervention for adolescents and young women was feasible despite the short time scale
- Intensity of exposure to multiple levels increased over time
- Older adolescents and those out of school and mobile were less likely to receive the community level interventions
- Social and individual level factors effect youth resilience and vulnerability
- The cascade of prevention was a useful framework to monitor reach of this complex interventions at a population level
- Empowering youth to engage with the evidence and formulate a community-led response was feasible and acceptable

Acknowledgements

Co-investigators: Natsayi Chimbindi, Jaco Dreyer, Nondumiso Mthiyane, Thembelihle Zuma, Nonhlanhla Okesola, Nothando Ngwenya, Carina Herbst, Oluwefemi Adeagbo, Kathy Baisley, Janet Seeley, Frank Tanser and Deenan Pillay, Guy Harling, Nuala McGrath, Lorraine Sherr, Isolde Birdthistle, Daniel Carter, Sian Floyd, Annabelle Gourlay, Nambusi Kyegombe

Funders: This work was supported by the National Institutes of Health under award number 5R01MH114560-03, Bill & Melinda Gates Foundation, Grant Number OPP1136774. Africa Health Research Institute is supported by a grant from the Wellcome Trust (082384/Z/07/Z). The research leading to these results has received funding from the People Programme (Marie Curie Actions) of the European Union's seventh Framework Programme FP7/2007-2013 under REA grant agreement no. 612216