



Putting HIV Prevention into Context

Investment In HIV Prevention Tools That Are Accessible, Affordable and Sustainable

Ayesha BM Kharsany, (PhD, MS Epi)

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Durban

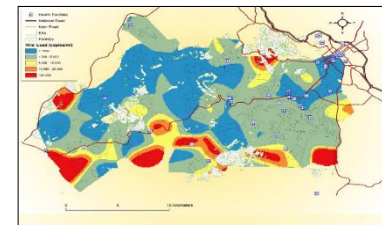
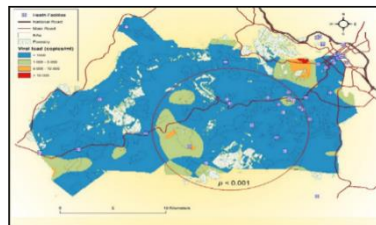
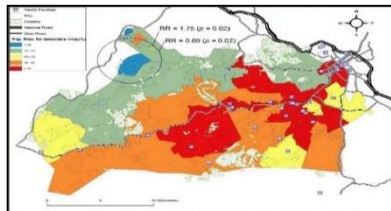
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Overview

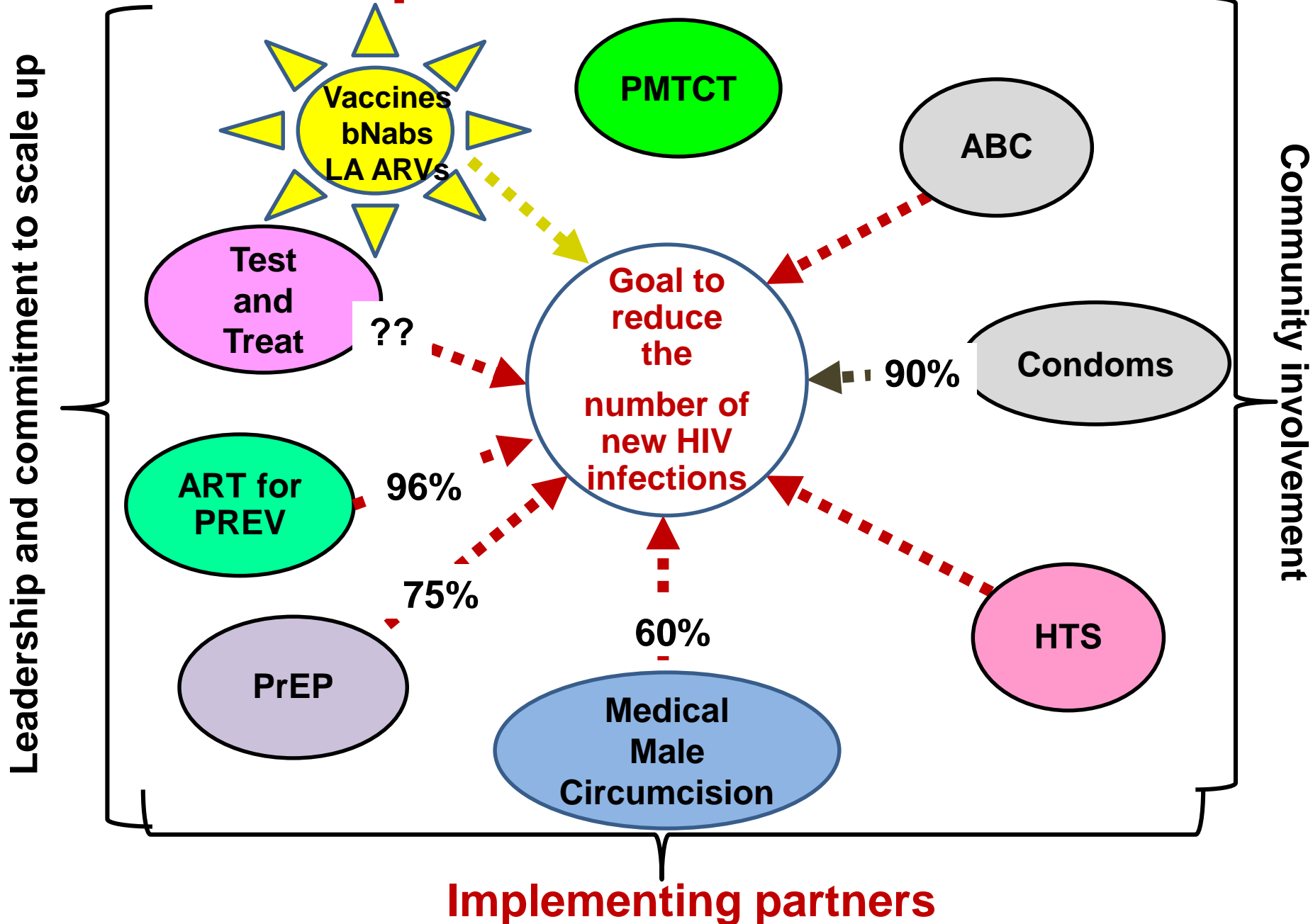
- **HIV prevention**
 - **Measurements**
 - **Tool-box**
 - **Empiric evidence**
- **Epidemiology and Prevention**
- **Is HIV prevention lagging behind...**
- **GAPS and whose missing**
- **Conclusions**

Principles and Priorities for HIV Control

- **HIV metrics** (prevalence, incidence, VL, mortality)
 - **HIV epidemic control** (1 case per 1000)
 - **HIV elimination**
 - **HIV eradication**
- **Combination HIV prevention strategies**
 - **Who_Populations**
 - **Where_Locations**
 - **Why_Target specific**
- **“Know your epidemic – Know your Response”**



HIV prevention tool-box



Trends in HIV in pregnant women in rural KZN 2001-2013



Age Group (Yrs)	HIV Prevalence (n=4818)
≤16	11.5%
17-18	21.3%
19-20	30.4%
21-22	39.4%
23-24	49.5%
>25	51.9%

Age group (Yrs)	HIV Prevalence %		
	Pre-ART 2001-2003	Early ART 2004-2008	Current ART 2009-2013
<20	22.5	20.7	17.2
20-24	45.5	44.2	37.9
25-29	47.9	58.8	57.6
30-34	26.7	55.5	59.9
≥35	27.4	30.8	53.4
Total	35.3	39.0	39.3

Source: Kharsany AB et al JAIDS 2015,70:289-295.

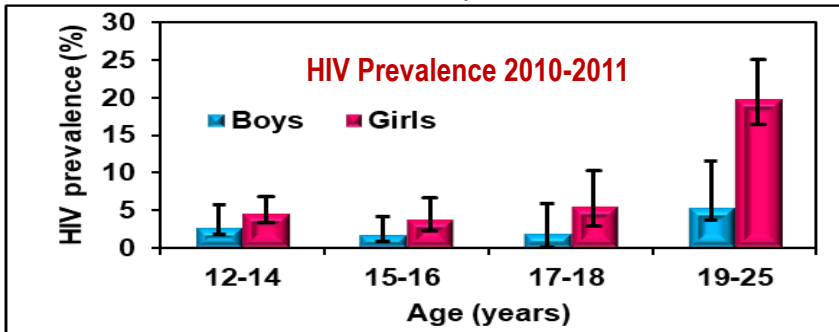
Key findings

- **>30%** Pregnant women <20 years old
- **HIV prevalence consistently high**
30% and 40%
by age 24; 1 in 2 HIV positive
- **HIV prevalence in the <20 year age group**
>20%
- **Increase in partner's age**
Increase in HIV prevalence in young women
- **HIV incidence**
11.2%

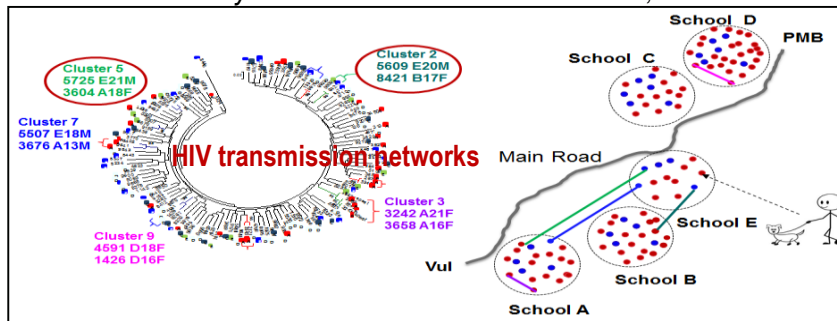
Trends in HIV in high school students in rural KZN

Age Group (Yrs)	HIV Prevalence 2010 (% 95% CI)	
	Boys (n=1262)	Girls (n=1423)
≤15	1.0 (0.0 - 2.2)	2.6 (1.2 - 4.0)
16-17	1.1 (0.2 - 2.0)	6.1 (2.6 - 9.6)
18-19	1.5 (0 - 3.7)	13.6 (9.0 - 18.1)
≥20	1.8 (0 - 3.9)	24.7 (6.3 - 43.1)
Overall	1.4 (0.9 - 1.9)	6.4 (4.6 - 8.3)

Source: Abdool Karim Q, et al. *Sexually Transmitted Infections* 2014, 90:620-626.



Source: Kharsany AB et al *BMC Public Health* 2012, 12:231



Source: Kharsany AB. et al *AIDS Research and Human Retroviruses* 2014, 30:956-965

Key findings

- **1 in 4 Learners** were sexually active
- **~4% Pregnancy prevalence**
- **HIV prevalence**

High across all ages

Higher in girls vs boys

- **Girls with older sex partners**
- **3 to 4 times more likely to be HIV +**

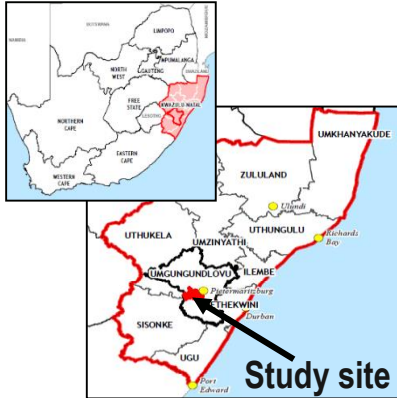
- **Clues on HIV transmission**

Limited in and across schools

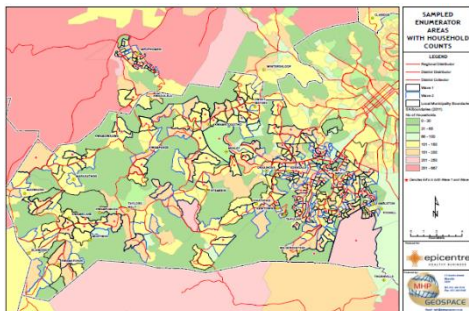
- **Possible introductions**

Community

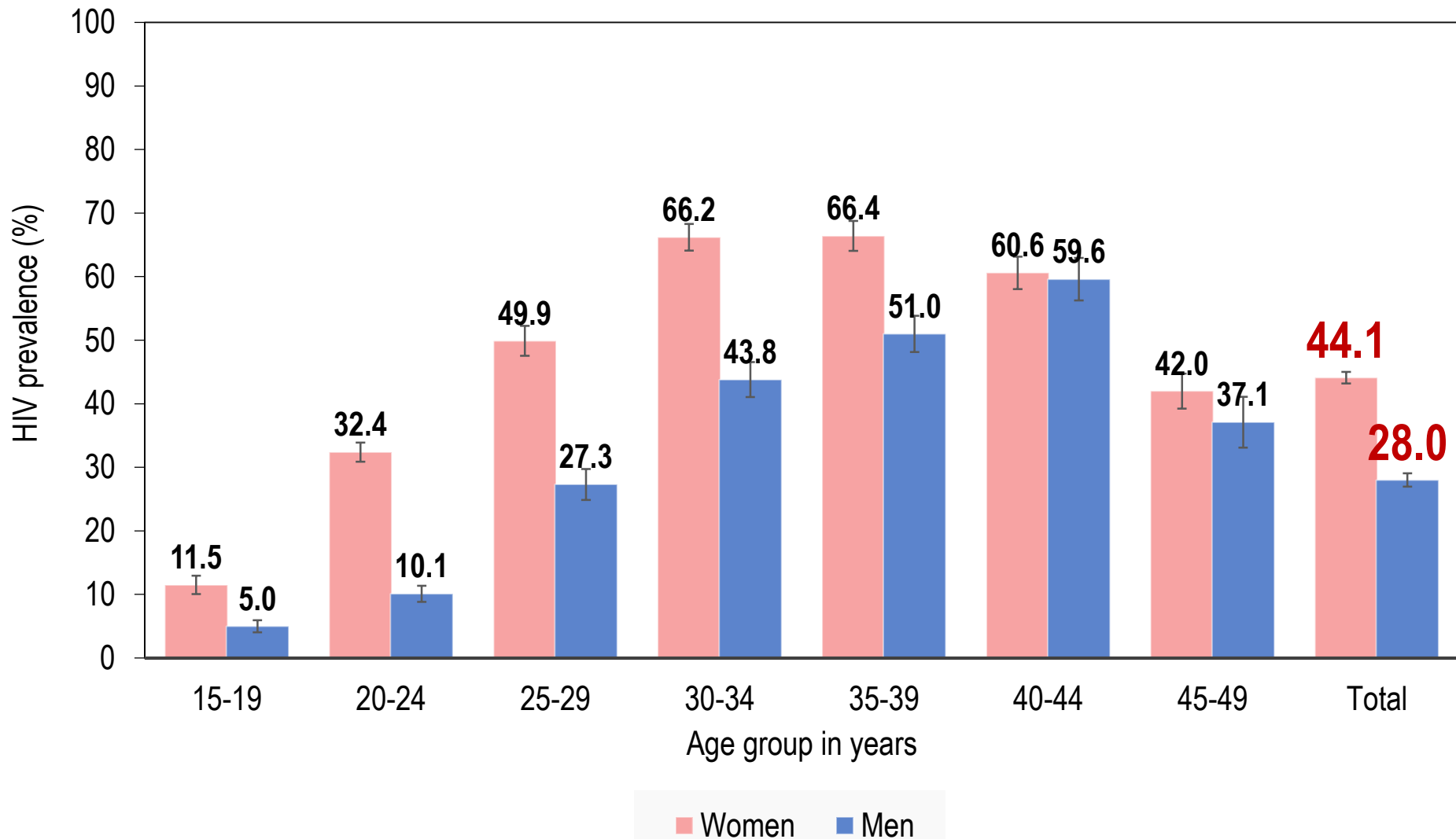
Community Based Surveillance 2014-2017



- **Purpose:** Evaluate population impact of programmatic scale-up of combination prevention efforts in a “real world”, non-trial setting in rural KZN
- **Objectives:** Measure HIV prevalence and incidence in relation to ART and viral load
- **Location:** 2 communities in uMgungundlovu district, KZN, SA
 - *Population of ~370 000*
Males ~176 418 / Females ~191 515
 - *High levels Unemployment / Poverty*
 - *Highest HIV burden district in SA*
 - *(SA DOH_ANC prevalence-40.7% in 2012)*
- **Methods:** Cross sectional multistage random sampling method
 - *11289 households, 9812 individuals, 15-49 yrs*



HIV sero-prevalence by age and gender



Unprecedented HIV burden

Cycle of HIV transmission

THE LANCET HIV



Transmission networks and risk of HIV infection in KwaZulu-Natal, South Africa: a community-wide phylogenetic study

Tulio de Oliveira*, Ayesha B M Kharsany*, Tiago Graf, Cherie Cawood, David Khanyile, Anneke Grobler, Adrian Puren, Savathree Madurai, Cheryl Baxter, Quarraisha Abdool Karim, Salim S Abdool Karim

Men

Mean age: 31.5 years (n=79)
Knew HIV status: 22%

Community HIV prevalence in men aged 25-40 years: **40%*** (N=1548)

Most young women <25 years acquire HIV from older men (Mean age difference = **8.7 years**, CI: 6.8-10.6)

Most men & women 25-40 years acquire HIV from similarly aged partners (Mean age difference = **1.1 years**, CI: -0.6-2.8)

39% of the men linked to a woman < 25 are simultaneously also linked to a woman 25-40 years

Young women <25 years

Knew HIV status: 23%
62% of male partners are 25-40 years

Community HIV prevalence: **22%*** (N=2224)

Women 25-40 years

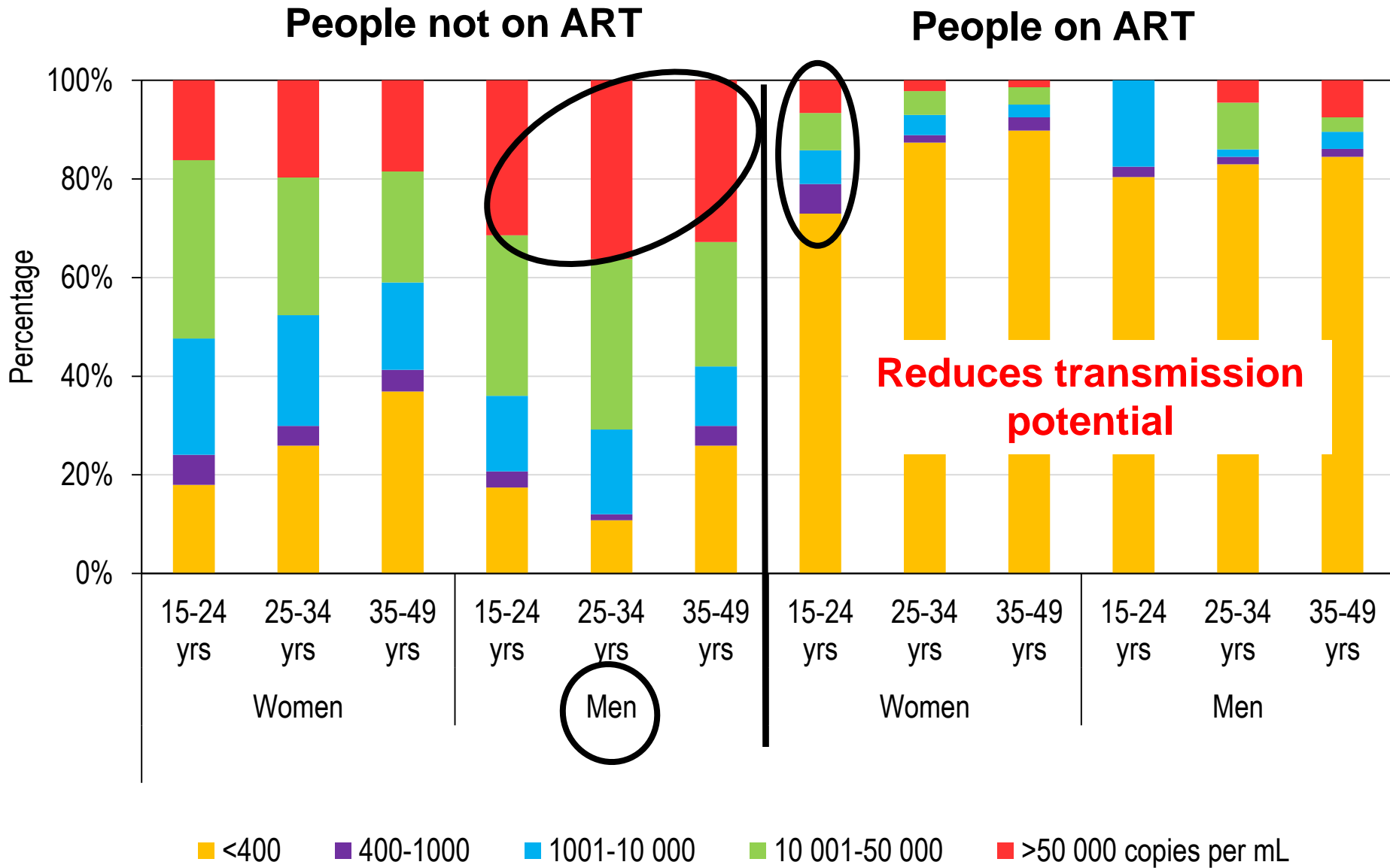
Knew HIV status: 43%
63% of male partners are 25-40 years

Community HIV prevalence: **60%*** (N=2680)

When young women reach >25 years they continue the cycle

Role of age disparate sexual partnerships driving the epidemic

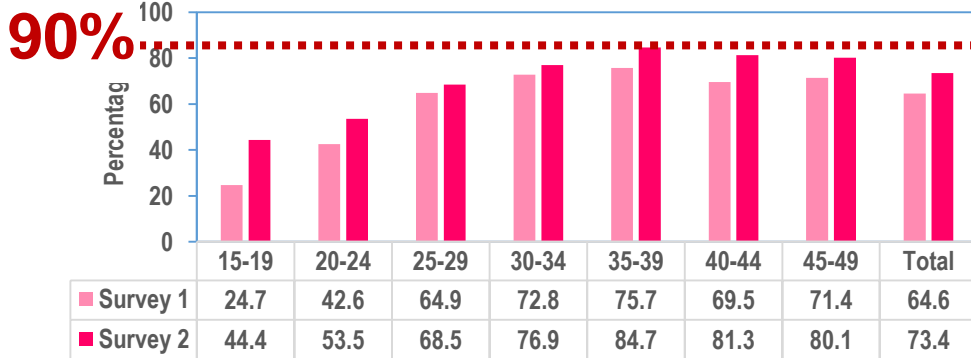
ART and viral load distribution



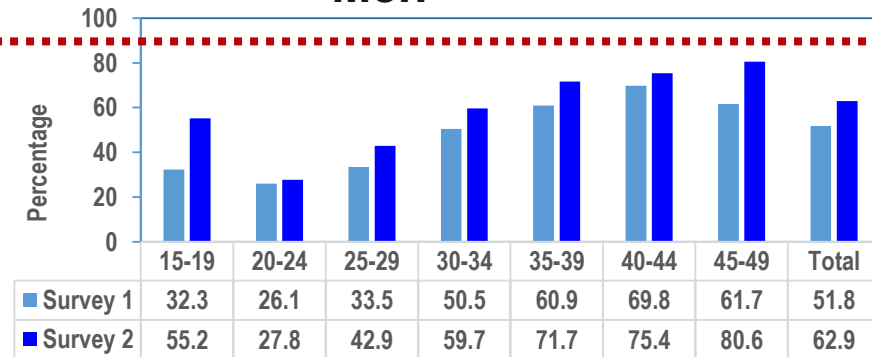
Goal to achieving UNAIDS 90-90-90

90 Diagnosed

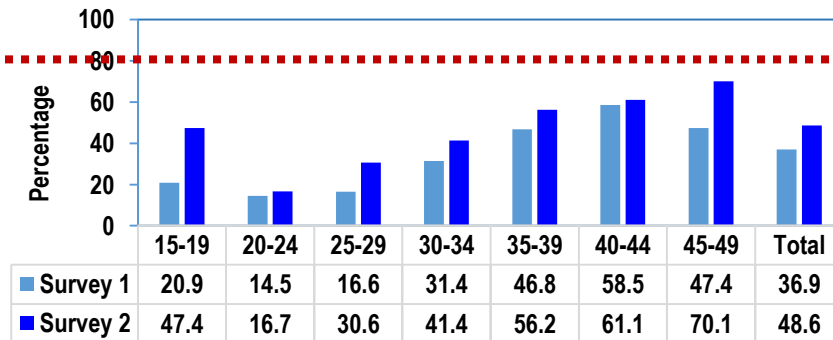
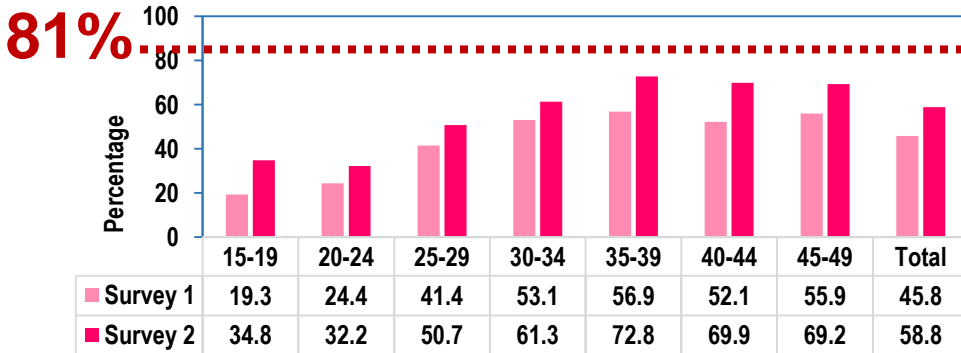
Women



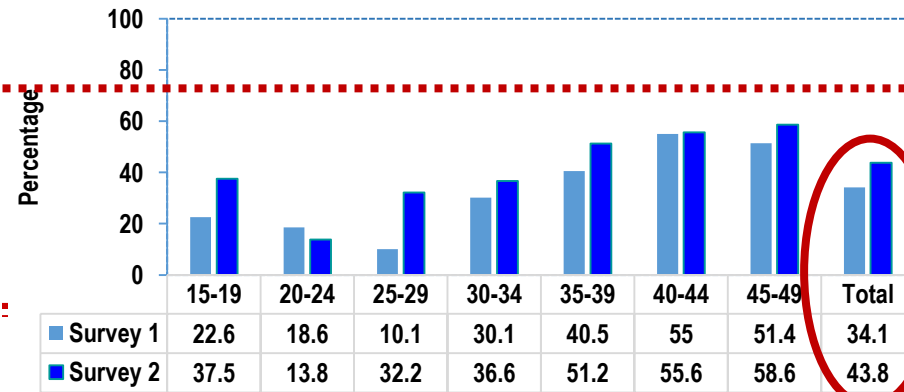
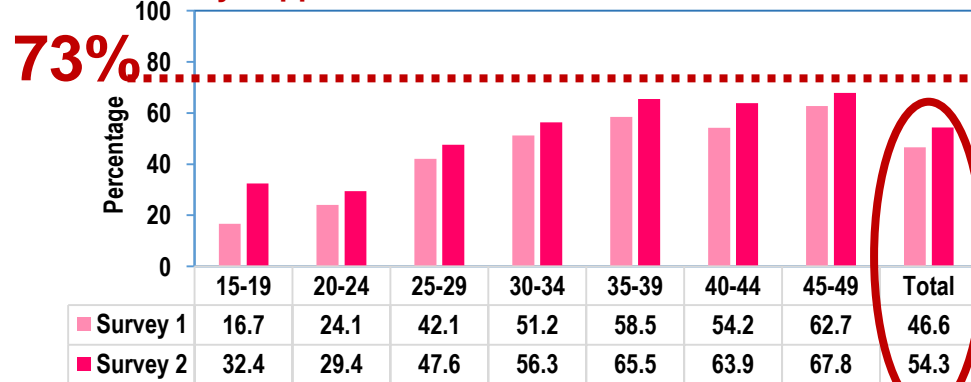
Men



90 on ART



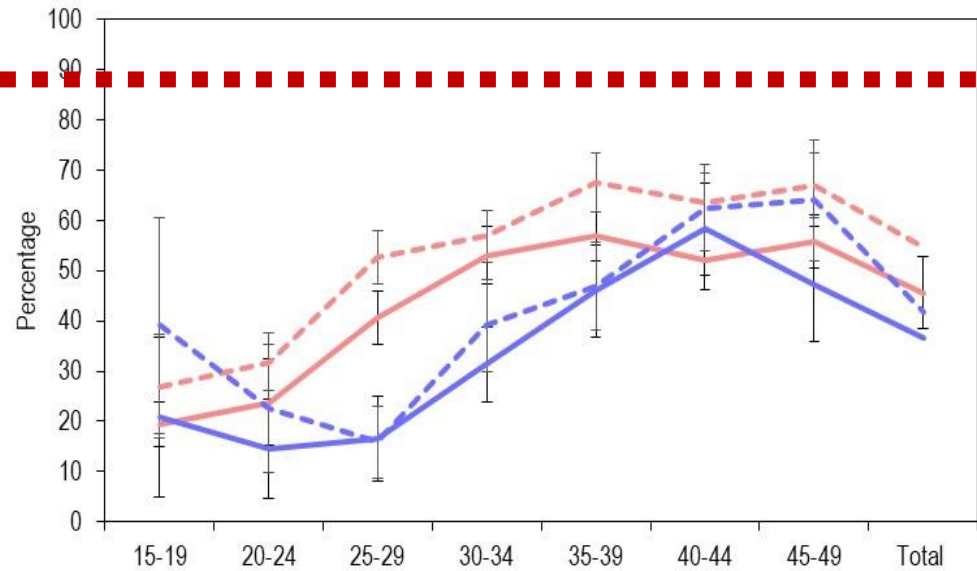
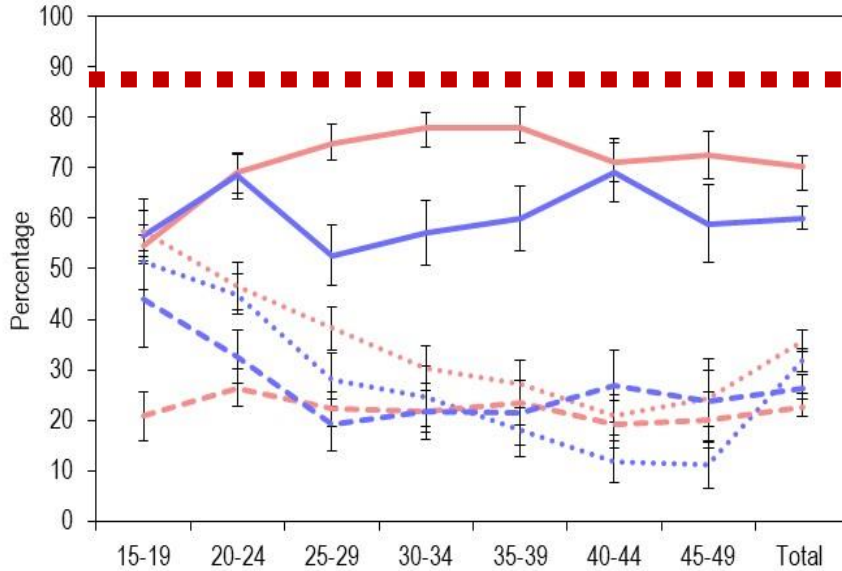
90 virally suppressed



Coverage of HIV prevention strategies

All

HIV positive




- Coverage of consistent condom use with sex acts in the last 12 months
- medical male circumcision
- knowledge of HIV status

- Coverage of ART
- Viral suppression among HIV positive

Sub optimal coverage of tested interventions
Implementation of >80% coverage
to achieve epidemic control

What is going to be the turning point

- No magic bullet
 - Yet, we have robust HIV prevention tools with strong empiric evidence
 - Translate individual to public health benefit (▼ incidence)
 - Must reach key affected populations
 - Improve / Innovative delivery of HTS, PrEP, MMC, ART with better linkage to care
 - Break ALL barriers and defeat stigma and discrimination
 - Commitment from Leadership, communities, civil societies and implementing partners
 - **We are on the right path but must scale-up to transform effects**
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Acknowledgements

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