



Track C: Epidemiology, prevention and prevention research

Quarraisha Abdool Karim (Chief Rapporteur)

Team: Marian Swart, Ken Mayer, Cheryl Baxter, Ayesha Kharsany, Barbara de Zaluondo, Catherine Worthington, Vivek Naranbhai, Heidi van Rooyen, Francois van Loggerenberg, Ida Susser, Salim Abdool Karim



Outline

- Global epidemiology
- Understanding multiple layers of risk
- Prevention: known effective strategies
- The future of prevention
- Conclusion

Current state of the global epidemic



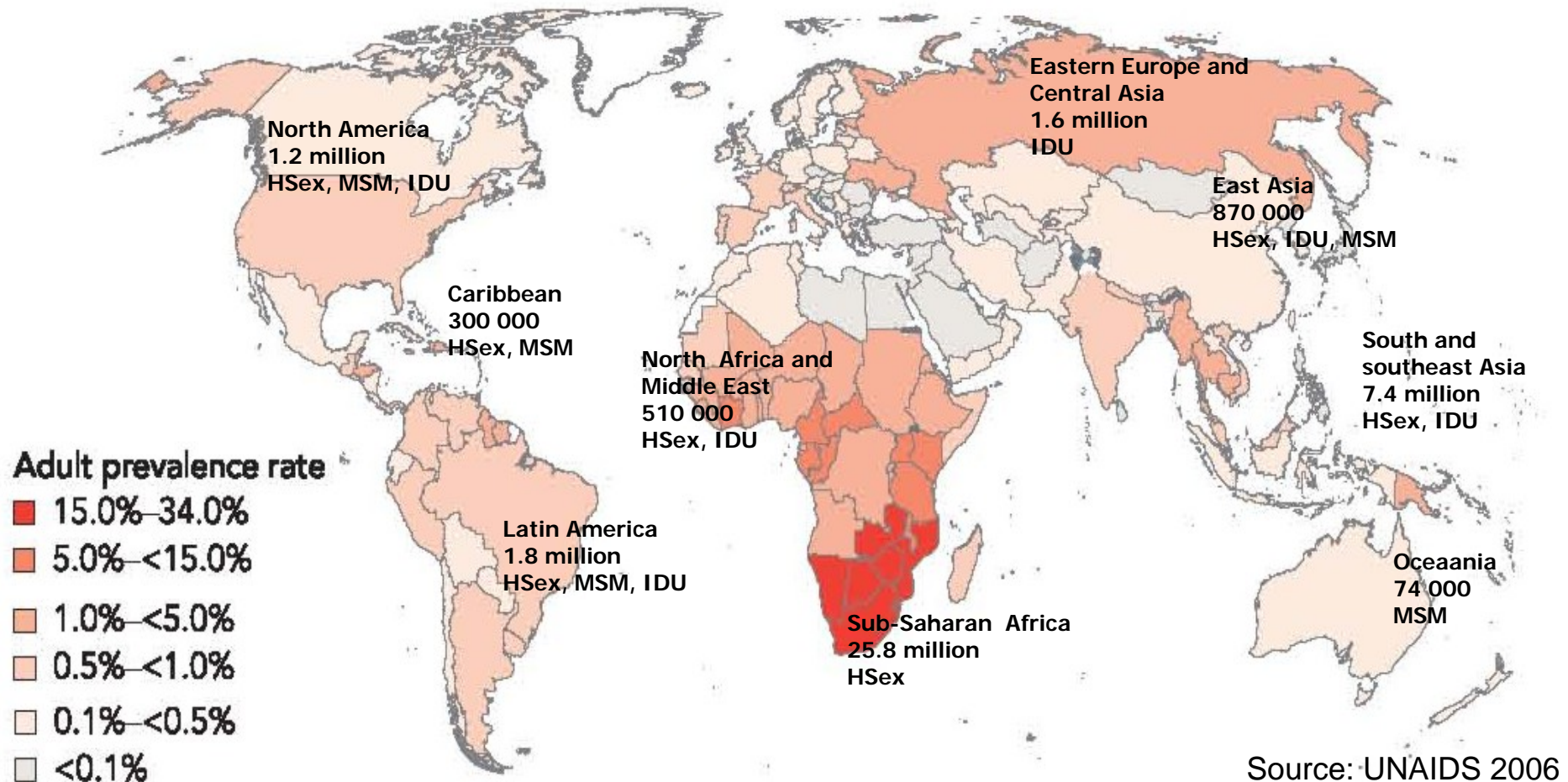
- 38.6 million living with HIV
 - 24.5 million in sub-Saharan Africa
- 4.1 million new infections
- 2.8 million deaths
- Examples of rapidly growing epidemics
 - IDUs in Eastern Europe
 - IDUs and MSM in Southeast Asia
 - Heterosexual in India, and Southern Africa
 - MSM in young African Americans in US

Global epidemiology



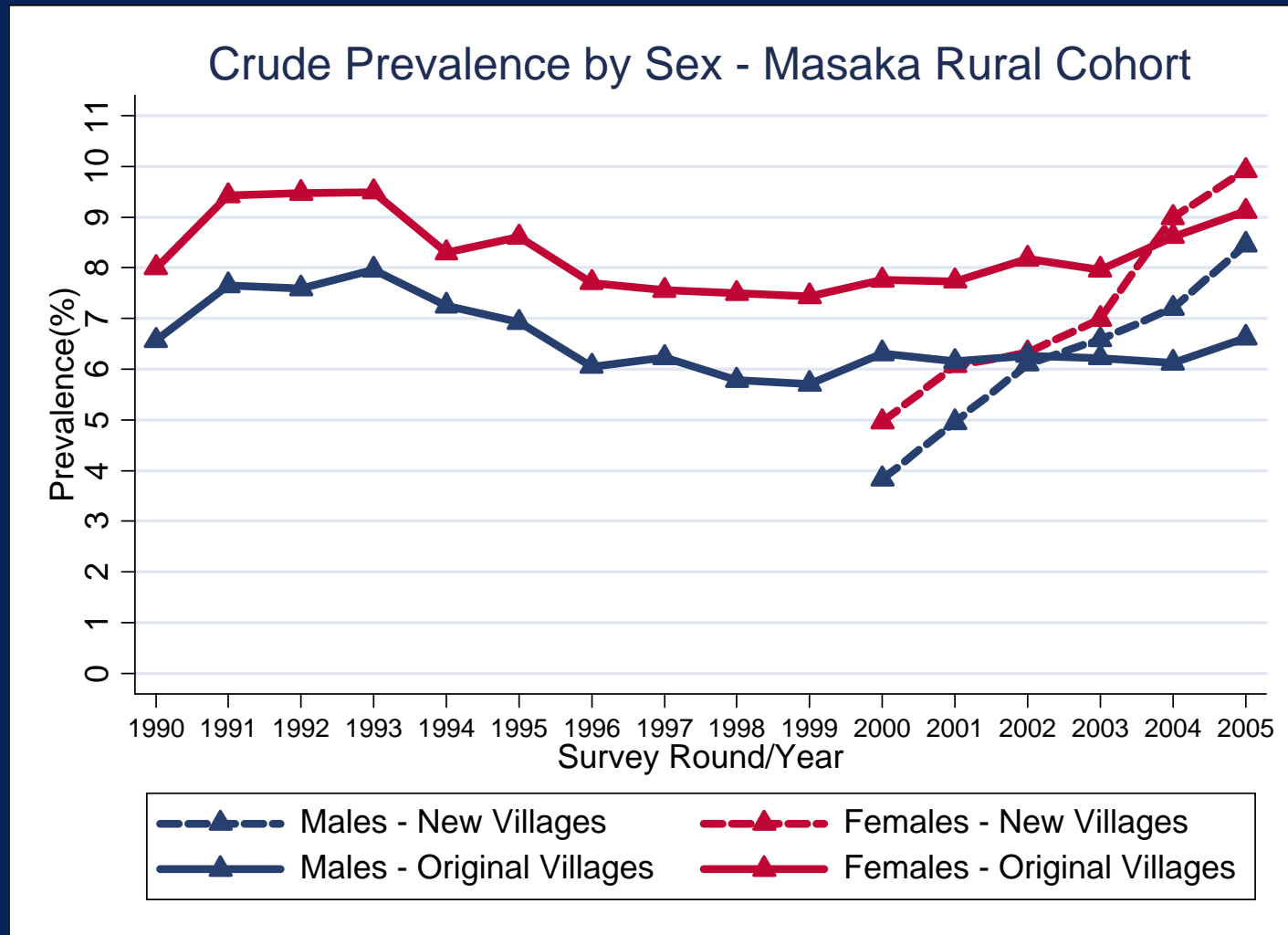
A global view of HIV Infection

38.6 million people [33.4–46.0 million] living with HIV, 2005

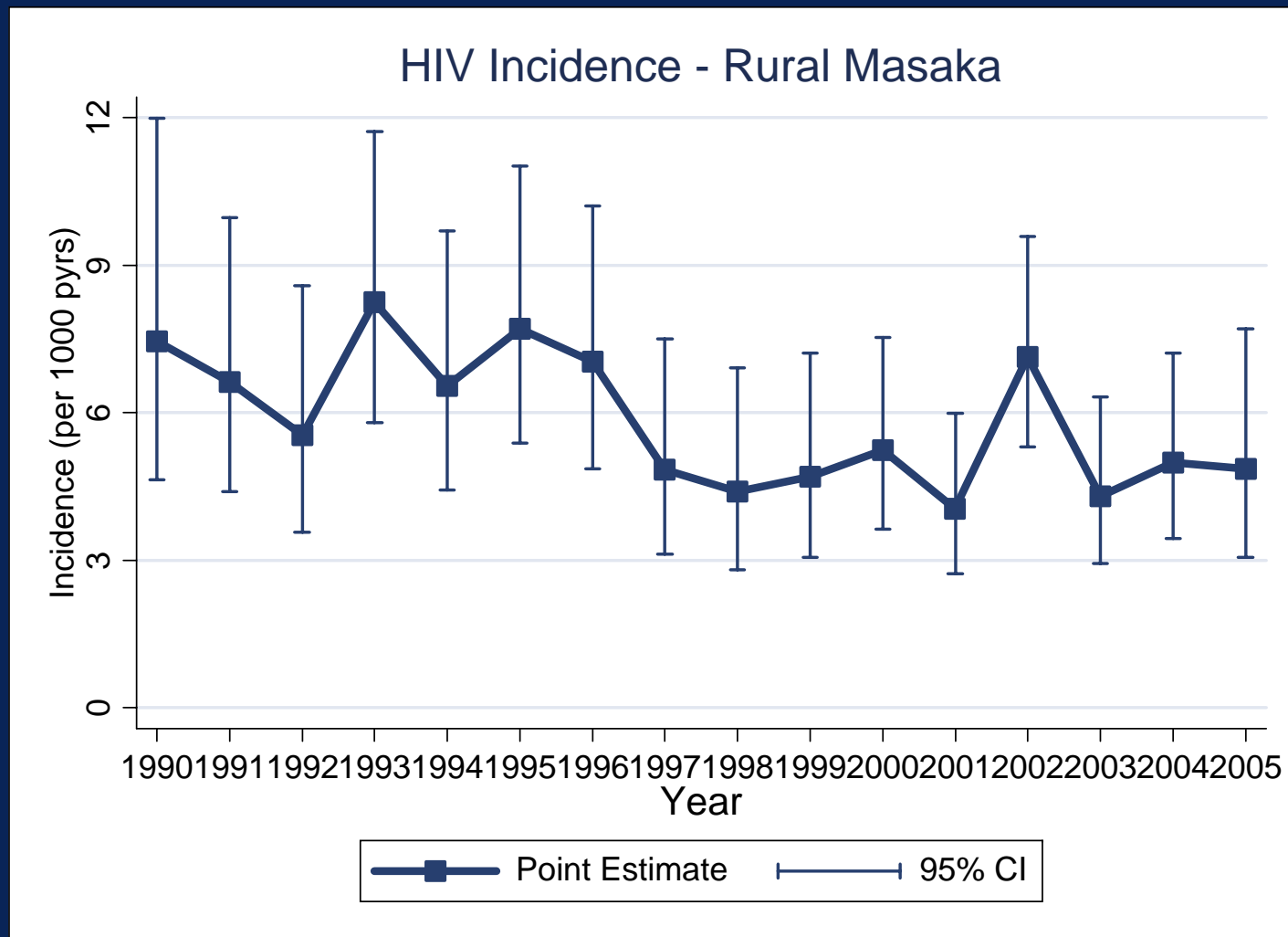


Source: UNAIDS 2006

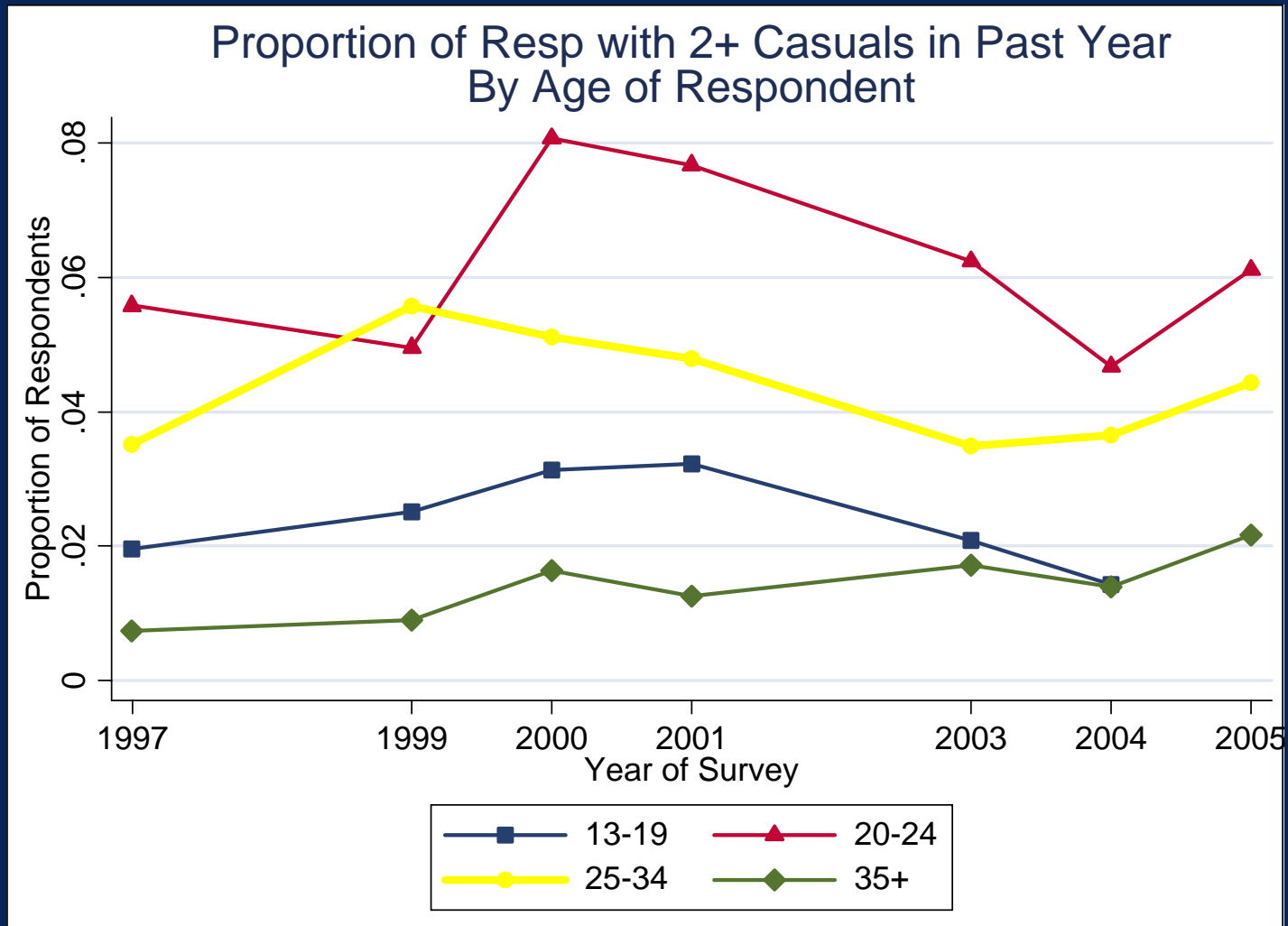
Uganda: Increasing HIV prevalence



Uganda: HIV incidence remains above 4/1000 person years



No room for complacency: increasing HIV risk in Uganda



Understanding multiple layers of risk

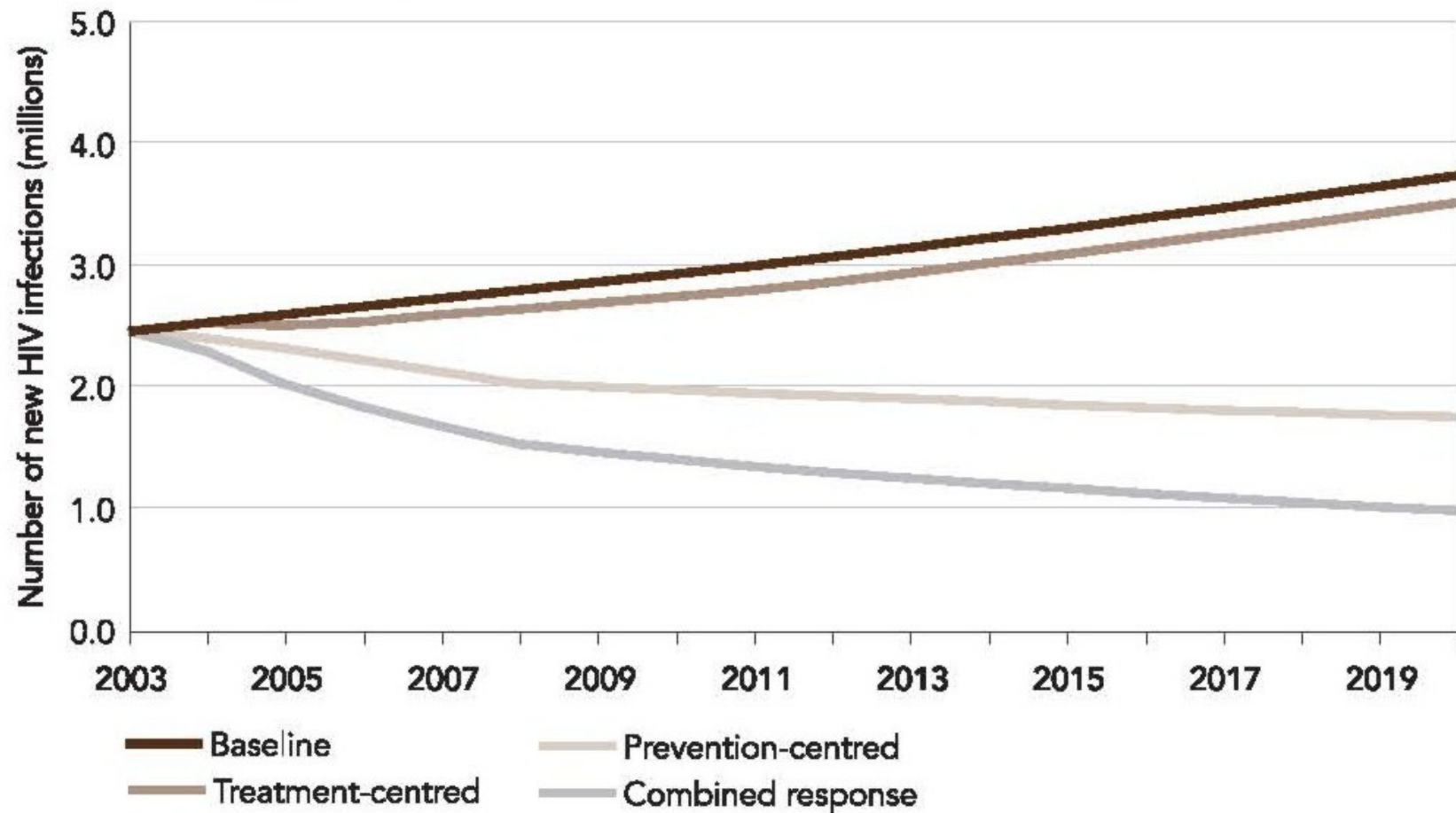


- Tissue / cellular level
 - e.g. *HLA, cervical ectopy, $\Delta 32$ deleted CCR5*
- Individual level
 - e.g. *condom use, circumcised*
- Community level
 - e.g. *access to health service, poverty*
- Country level
 - e.g. *punitive sex work legislation*
- Global level
 - e.g. *TRIPS agreement*

False dichotomy: Prevention and Treatment



Impact of three scenarios on HIV infection in sub-Saharan Africa, 2003–2020



Source: Salomon JA et al. (2005). Integrating HIV prevention and treatment: from slogans to impact.

Prevention: Counseling and testing



- Major challenge in prevention and treatment programmes
- Ugandan home-based care programme increased uptake of testing in 15 months from 10% – 84%
- Botswana universal counseling and testing increased knowledge of HIV status from 18.1% in 2001 to 25.4% in 2004

Prevention: Prevention in PLWHA

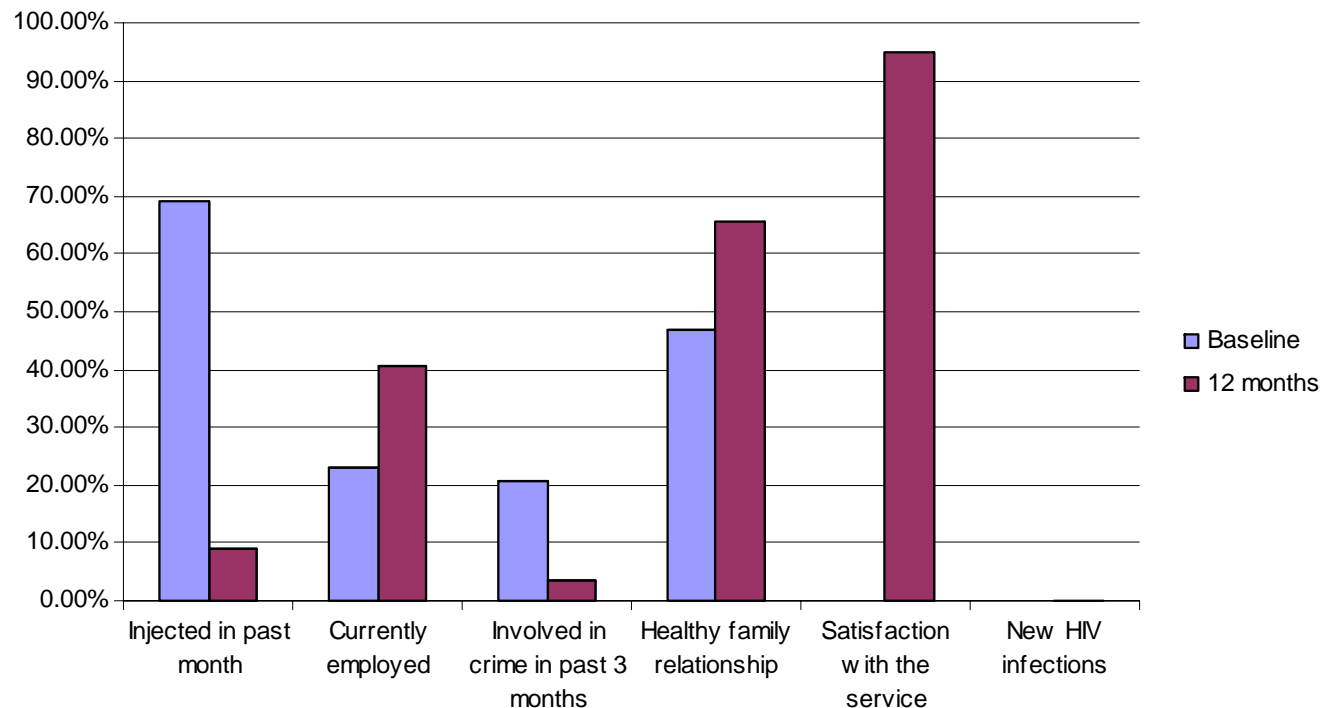


- Botswana:
 - 67% increased condom use
 - 58% reduced number of sexual partners
- India:
 - Married HIV + women in care programme 4 times more unplanned pregnancies
- France:
 - 17% of MSMs continued unsafe sex
 - 29% of heterosexual patients had unsafe sex

Prevention: Harm reduction



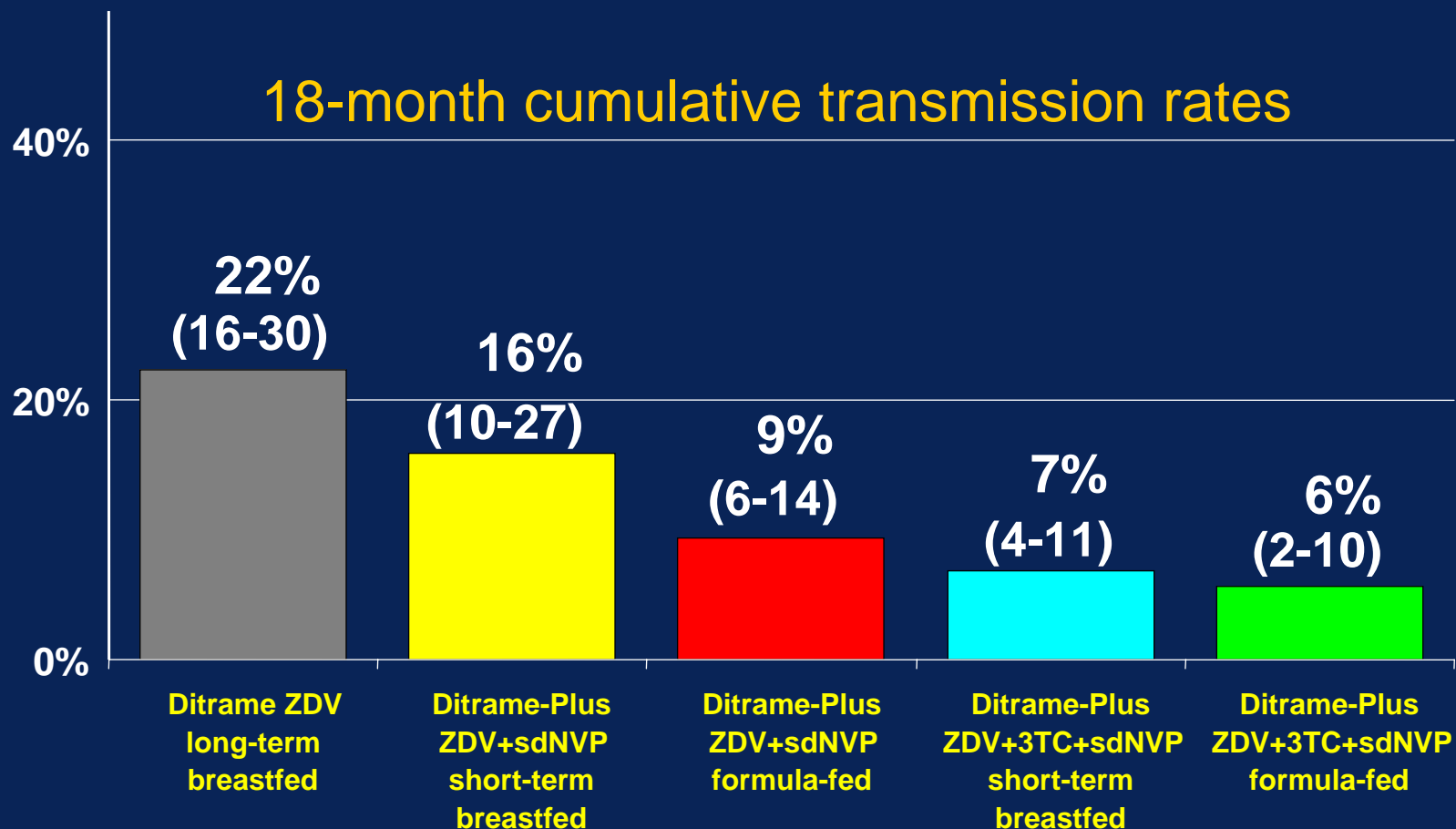
- IDU = 10% of global burden
- China introduces harm reduction:
 - Within 2 years 101 methadone programmes in 22 provinces for over 15 000 drug users making over 10 700 visits per day



12 months after the introduction of a Chinese harm reduction site

Prevention: PMTCT

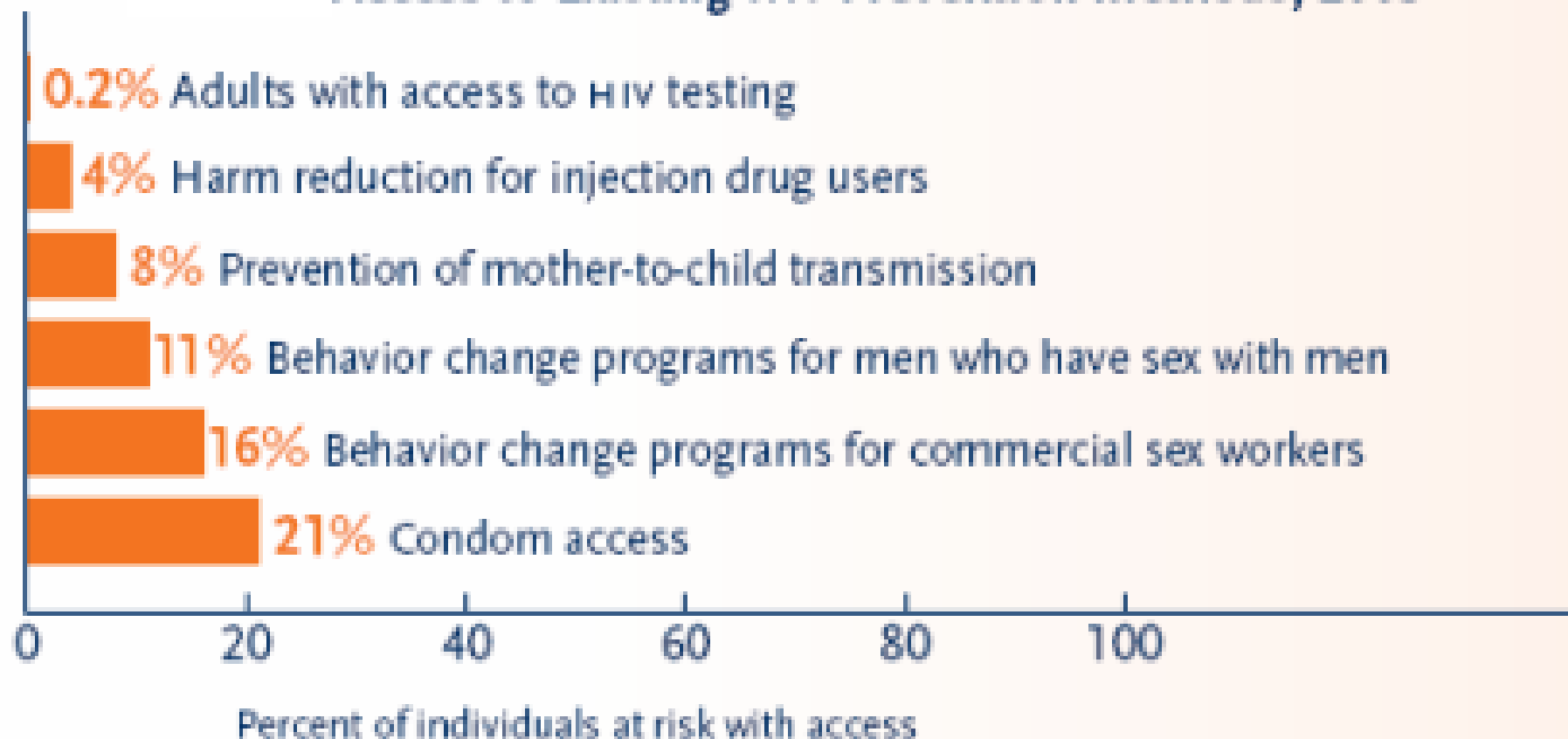
- Cote d' Ivoire 4 arm Randomized Controlled Trial



Translating evidence into action: the global failure in prevention scale up



Access to Existing HIV Prevention Methods, 2003



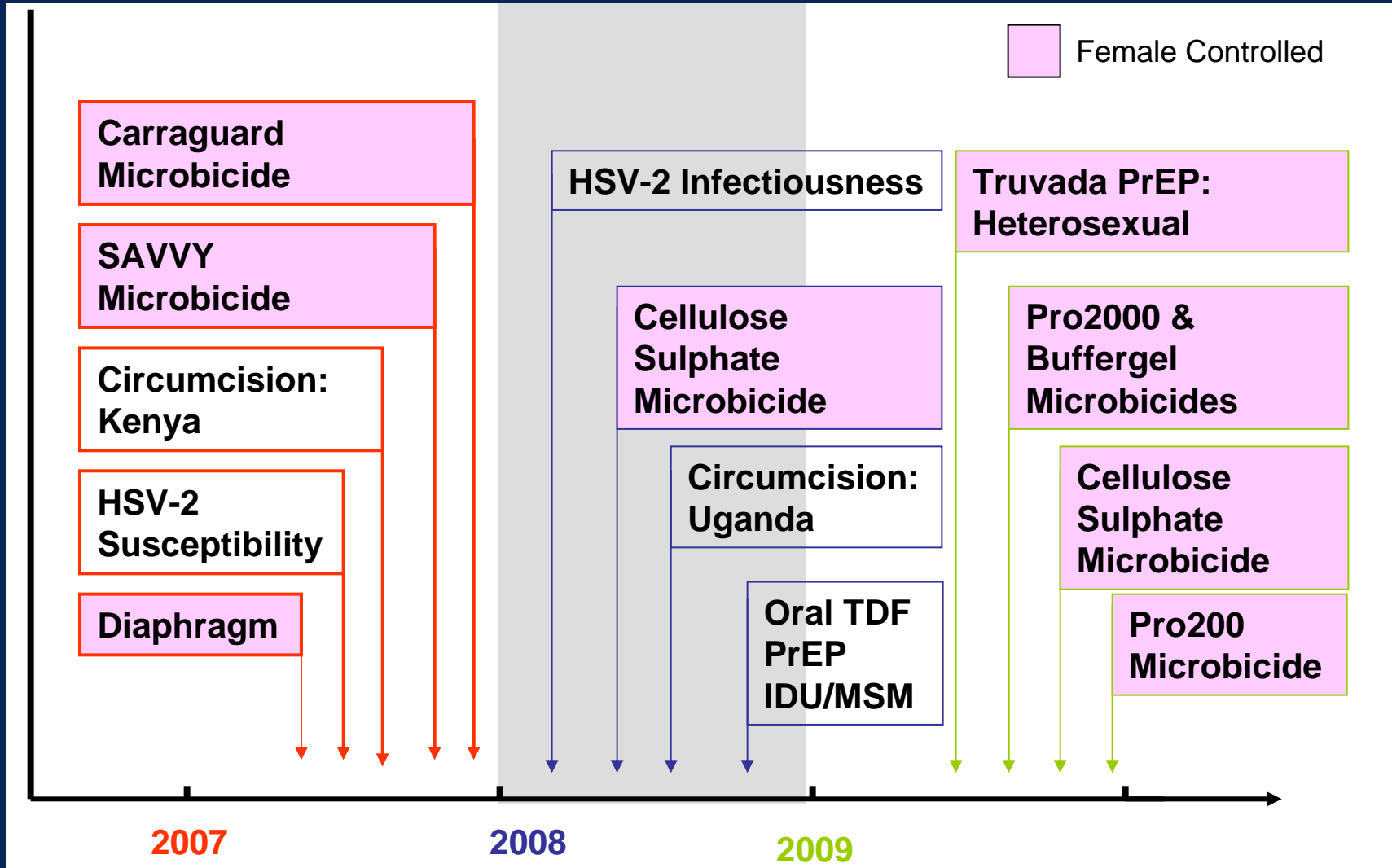
Source: USAID et al., 2004

Prevention: PrEP



- 936 women in Cameroon, Nigeria and Ghana
- Daily dose 300 mg oral tenofovir
- No safety concerns
- HIV seroconversions: 2 in TDF vs 6 in Placebo
- Difference not statistically significant ($p=0.24$)
- No evidence of TDF resistance in seroconvertors
- Conclusion: further efficacy studies warranted

Upcoming prevention trial results



Conclusion

- Treatment scale up creating new opportunities for prevention
- Need to improve scale up of known effective prevention strategies
- HIV epidemic continues to grow
- Not a single epidemic but a mosaic of multiple differing epidemics
- Need to deal with drivers of epidemic
- Continue to innovate with new prevention strategies



“History will judge us not by
our scientific advances, but
by what we do with our
scientific advances”

A Fauci 15 August 2006, Toronto IAC