

HARVARD UNIVERSITY SCHOOL OF PUBLIC HEALTH



**New Directions and Shifting Priorities  
in HIV Prevention (& some “Big Picture”  
Questions for Global Health...)**

**Daniel Halperin, PhD**

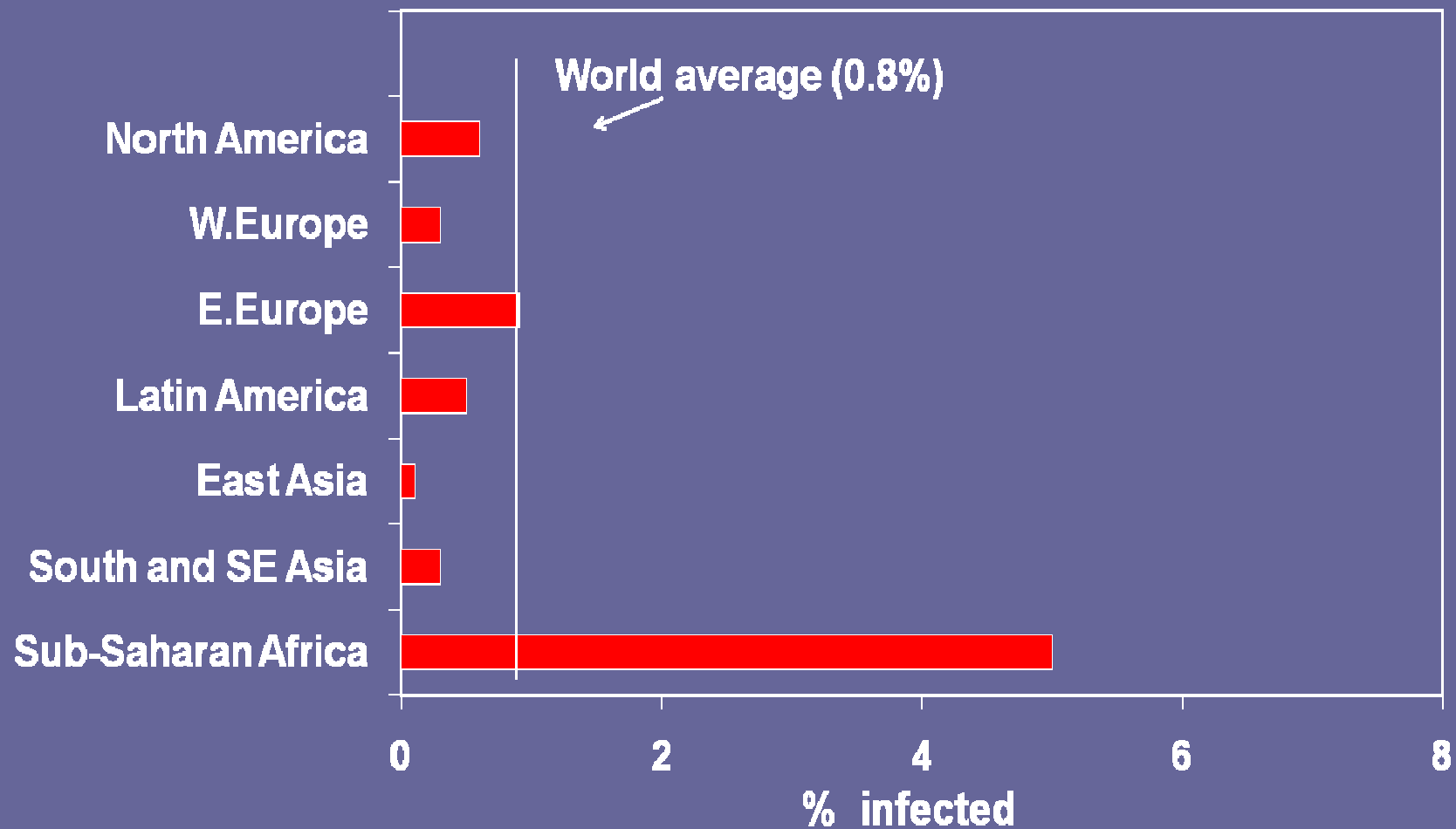
Department of Global Health and Population  
Harvard University School of Public Health

UN General Assembly, October 24, 2008

# Successes & Failures of AIDS Prevention (focus on sub-Saharan Africa)

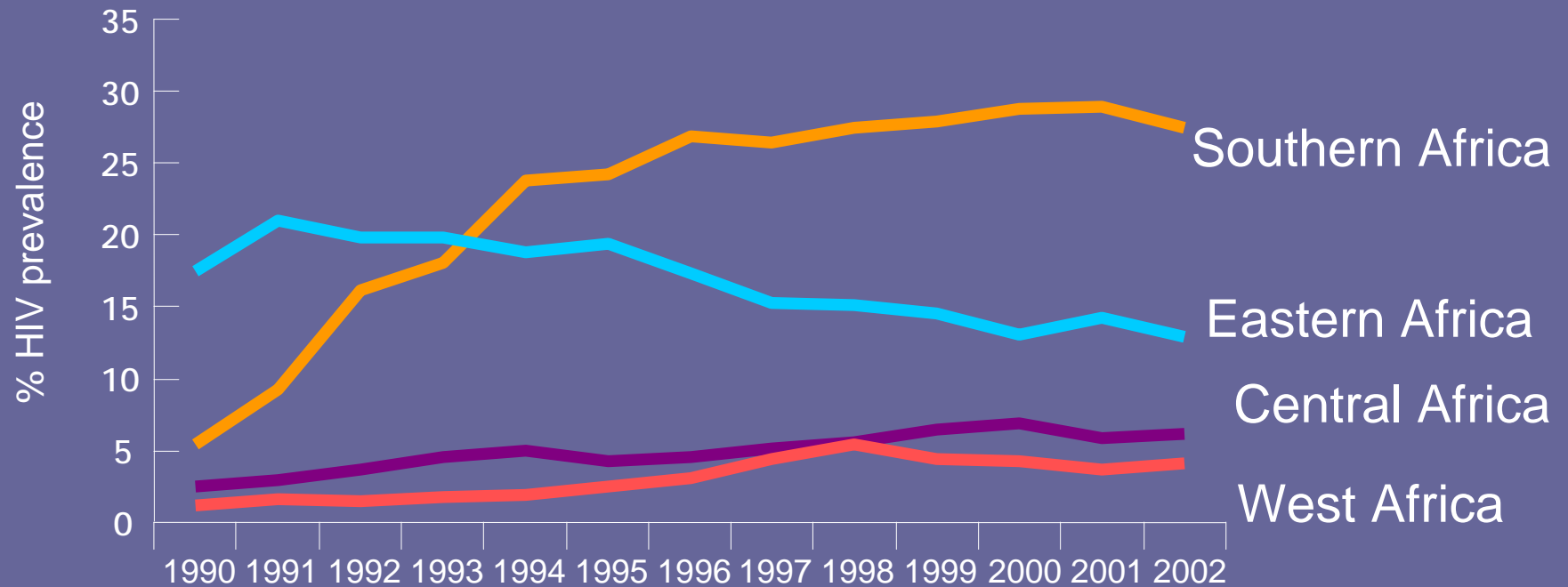
- Epidemiological background: Why is HIV so high in SSA, especially southern Africa?
- Evidence for the “standard” HIV prevention tools?
- New approaches and priorities for HIV prevention

# Percent of adults (15-49) infected with HIV in 2007



Source: UNAIDS 2007

# HIV Prevalence by Region

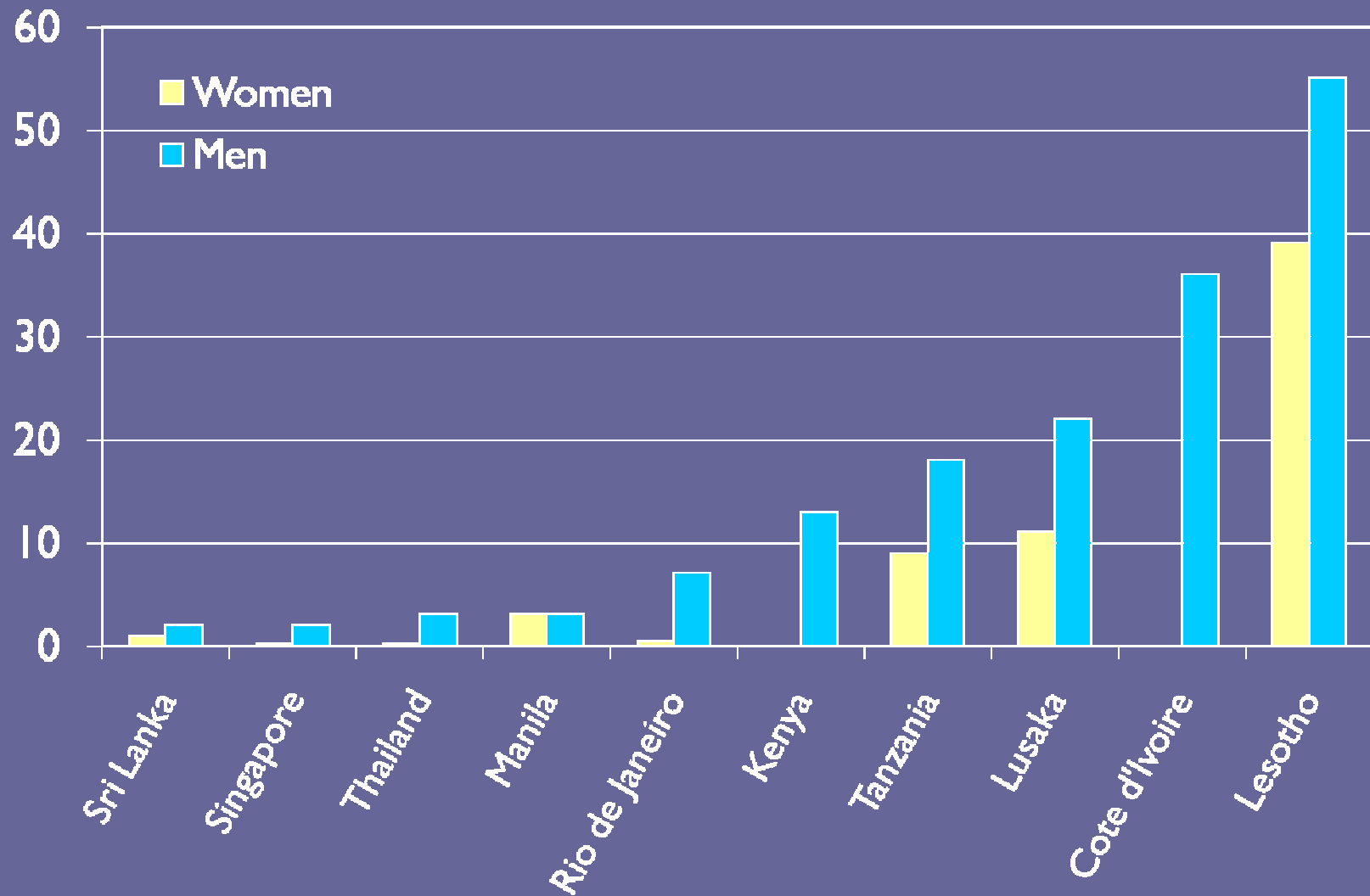


Source: Adapted from WHO analysis (Lancet 2004)

# HIV Transmission Patterns in Mashonaland, Rural Zimbabwe

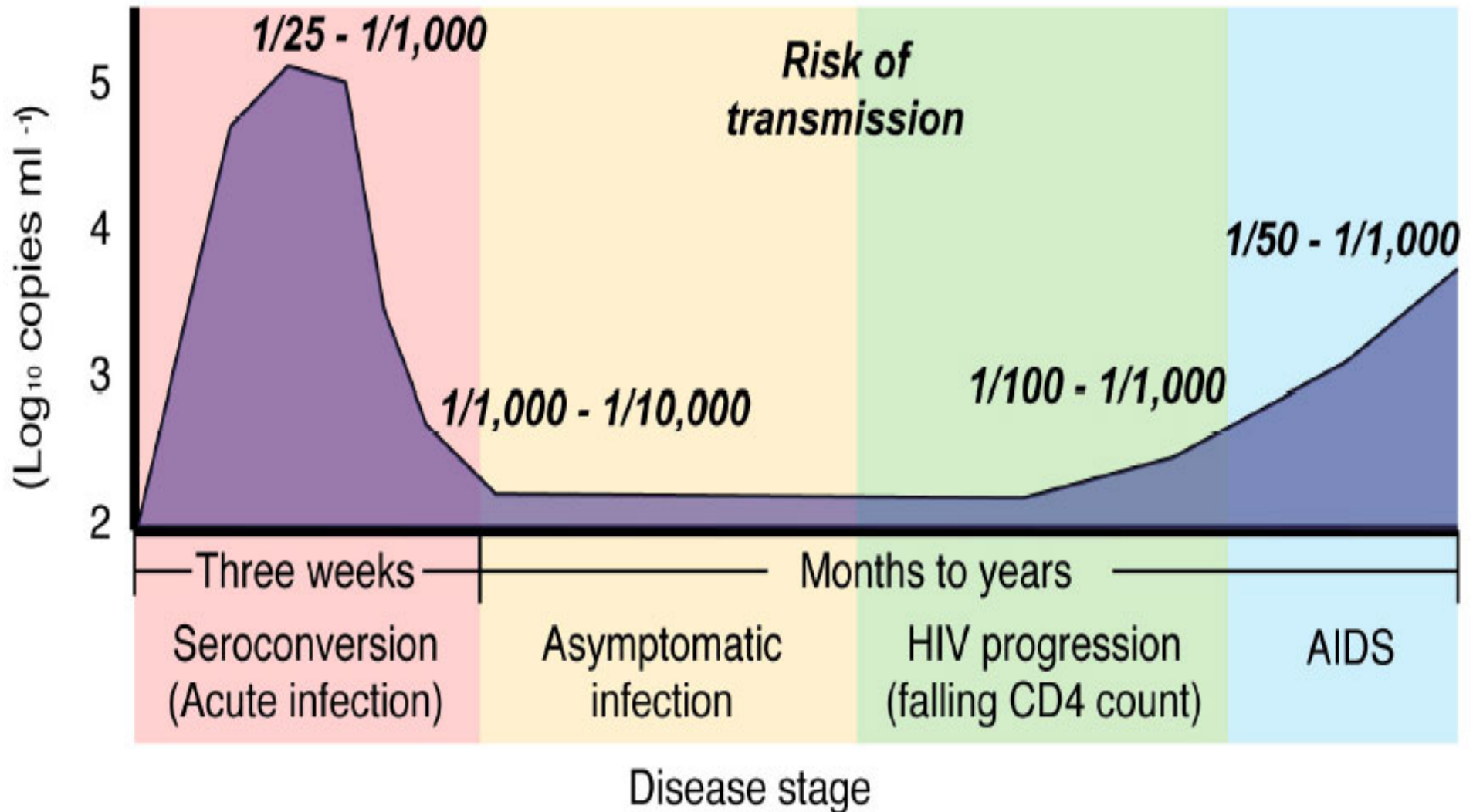


# Concurrent Partnerships Globally



Sources: M. Carael, 1995; Halperin and Epstein, 1994

# The “Acute Infection” Period



Source: Galvin, S.R. & Cohen, M.S. (2004) The role of sexually transmitted diseases in HIV infection. *Nature Reviews Microbiology*, 2(1).

# Sexual Networking in Likoma, Malawi

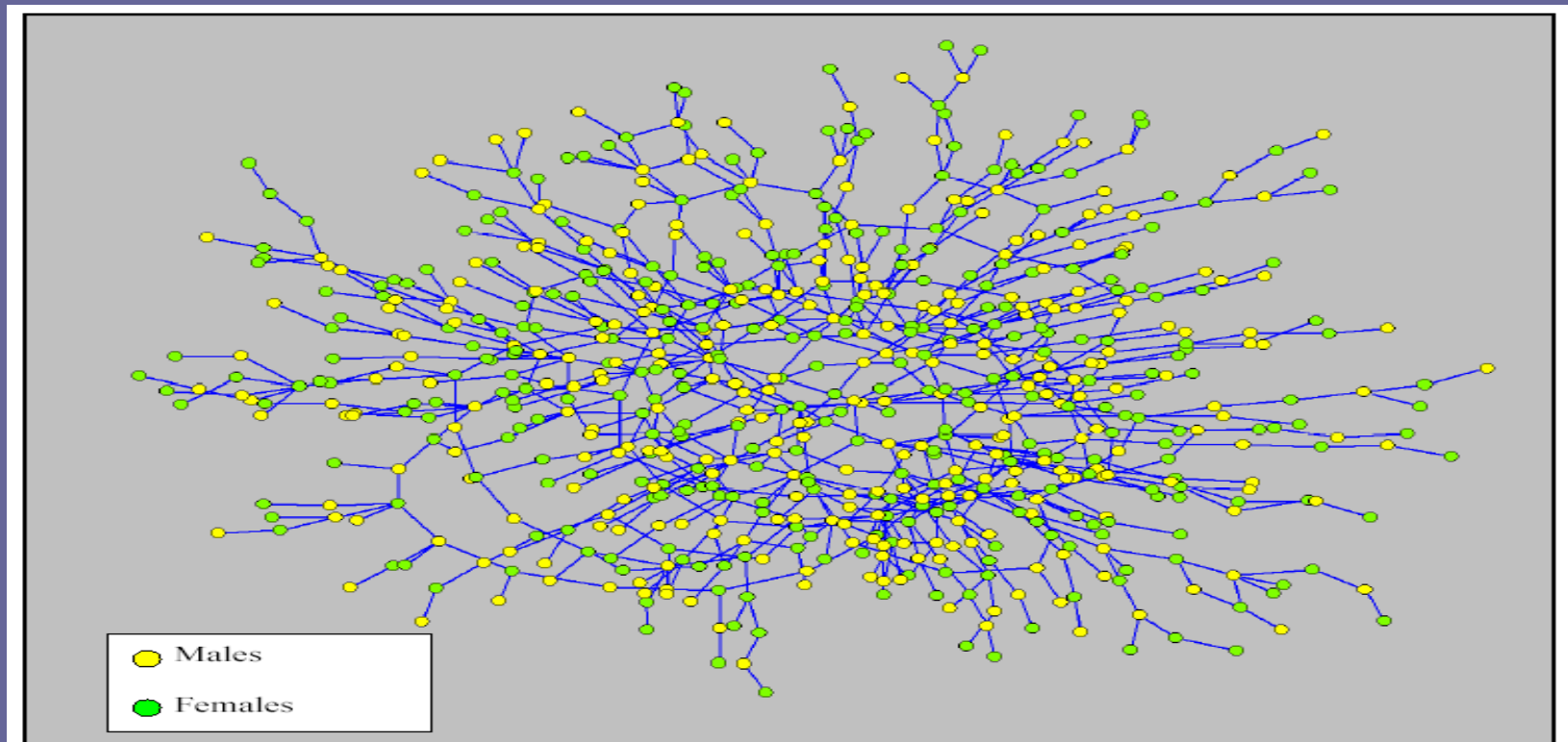


Fig. 5: largest connected component. N = 685. It comprises more than 65% of the population of the 7 villages surveyed.

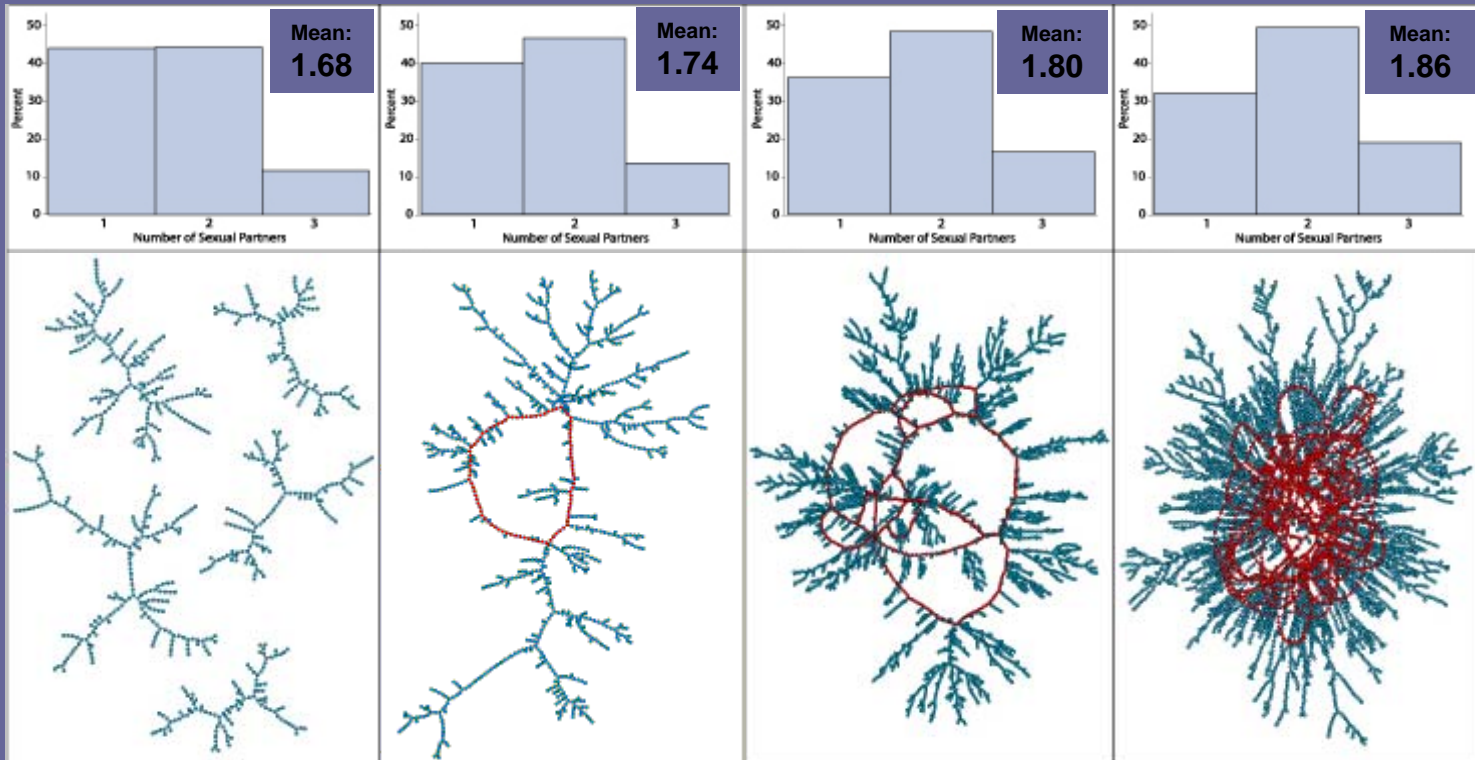
- A fifth of population in exclusive dyadic relationships
- Two-thirds linked by single chain of infections over last 3 years
- Networks not linked by sex workers or other “high frequency transmitters”
- Linked by decentralized, complex, robust chains of sexual relationships



# Modeling Sexual Networks

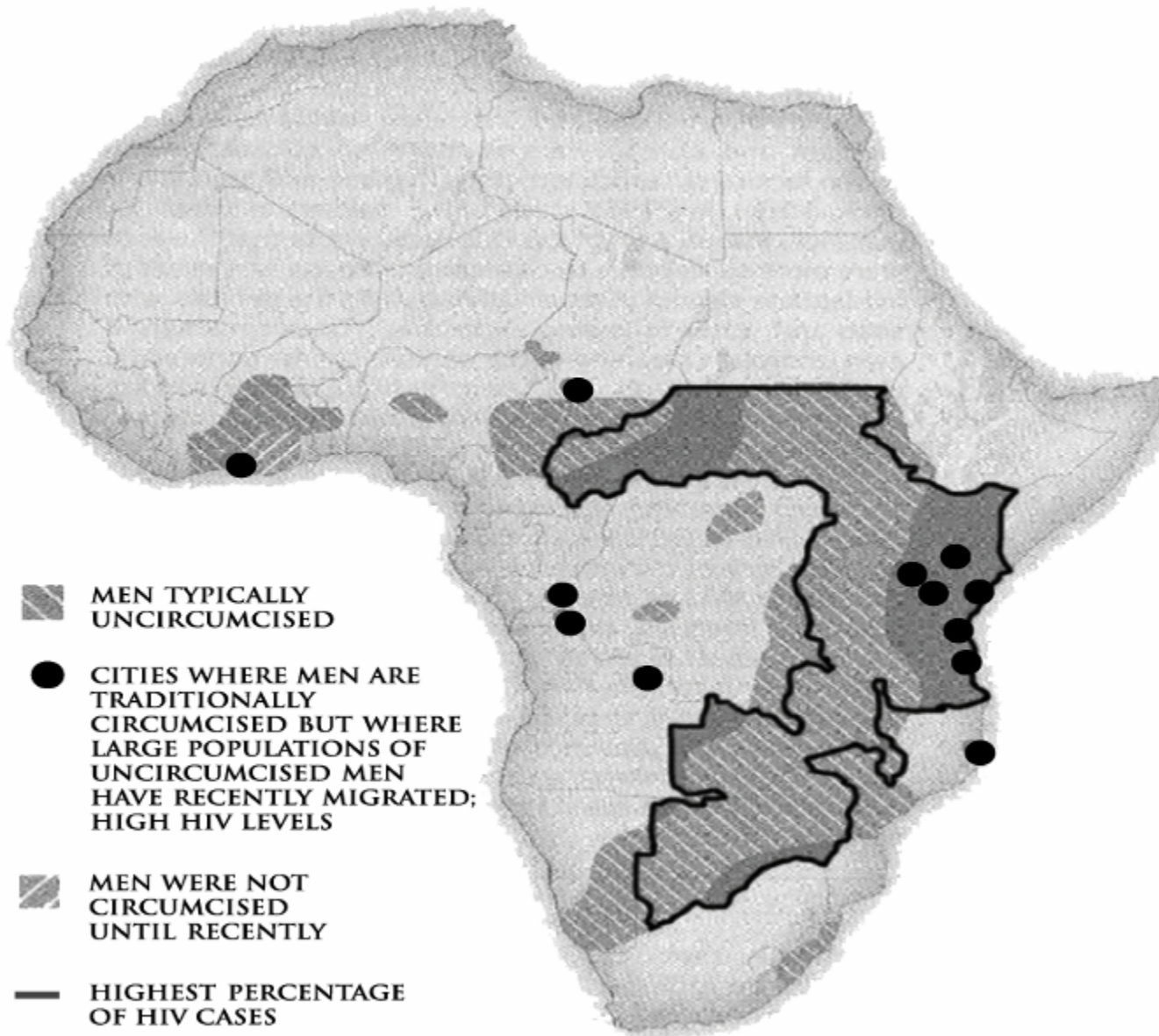
Low degree networks create a transmission core

Number of Partners



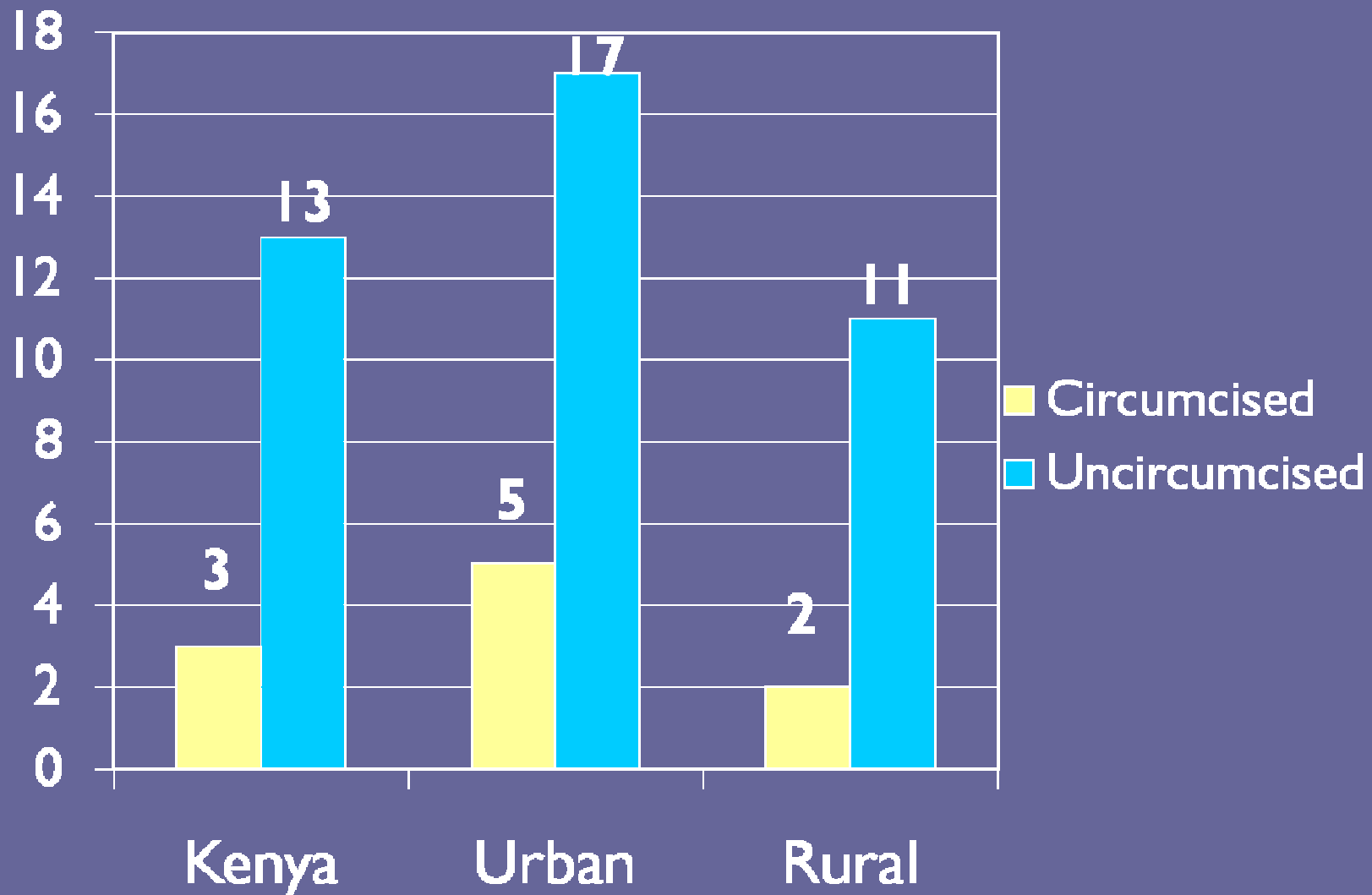
Source: Martina Morris, University of Washington and James Moody, Duke University, Meeting concurrent sexual partnerships and sexually transmitted infections, Princeton University, 6 May

## Regions in Africa Where Most Men Are Uncircumcised



Scientific American 1996

# HIV Prevalence by Male Circ. (Kenya)

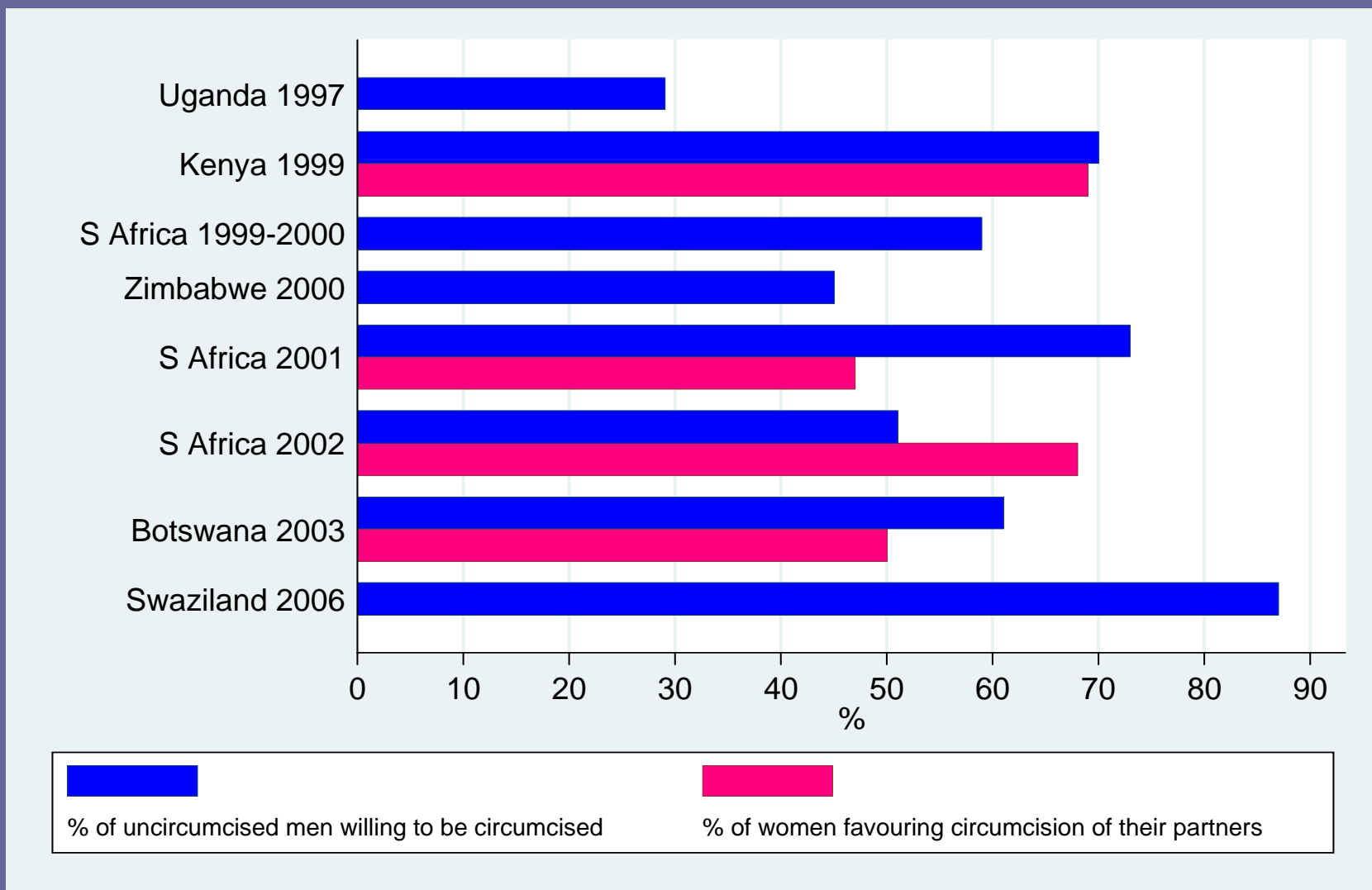




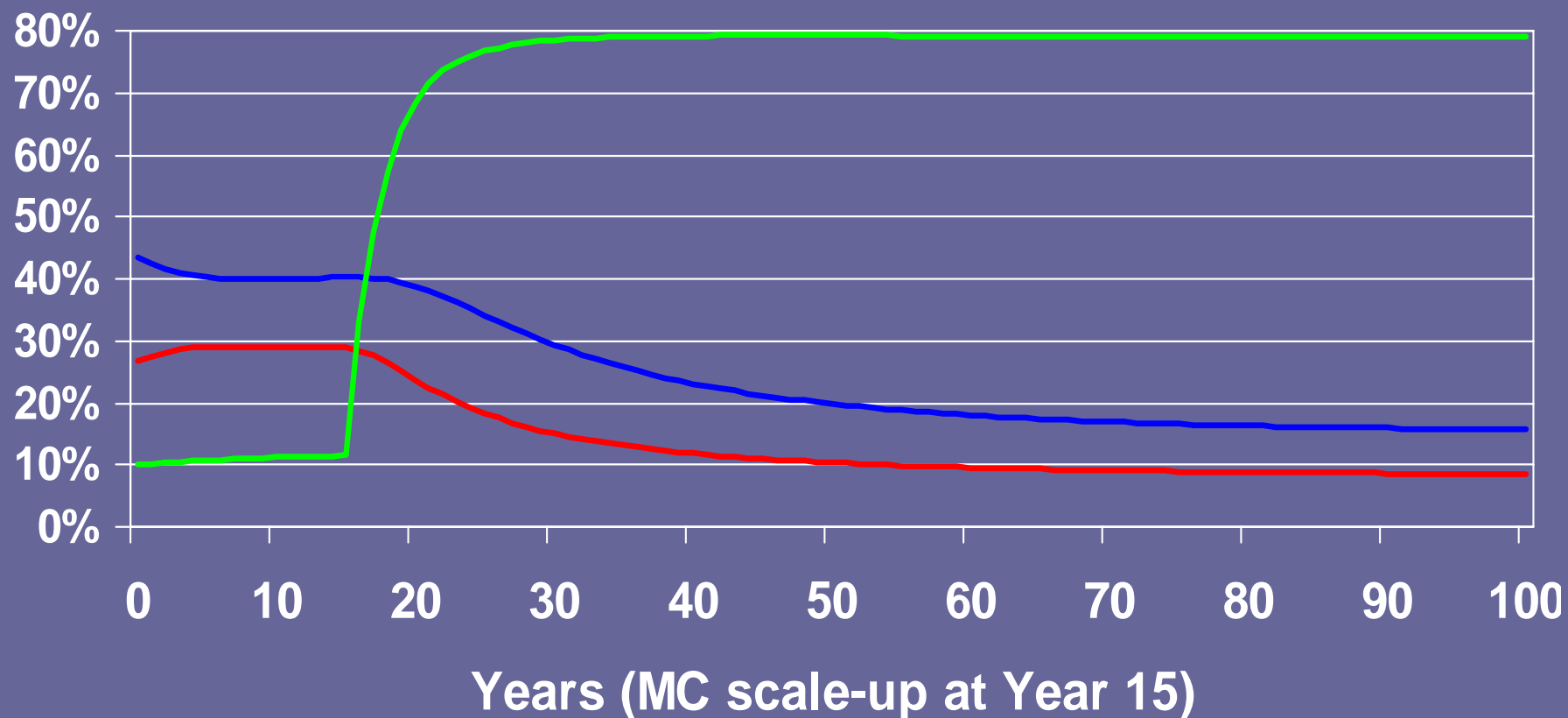
Physician and health show host Dr Themba Ntiwani, Swaziland: "Everyone wants to have it done. Not one person has called to say it's 'un-Swazi'"

Source: Timberg, Wash Post, Dec.

# Acceptability of MC in Currently Non-Circumcising Communities in Africa



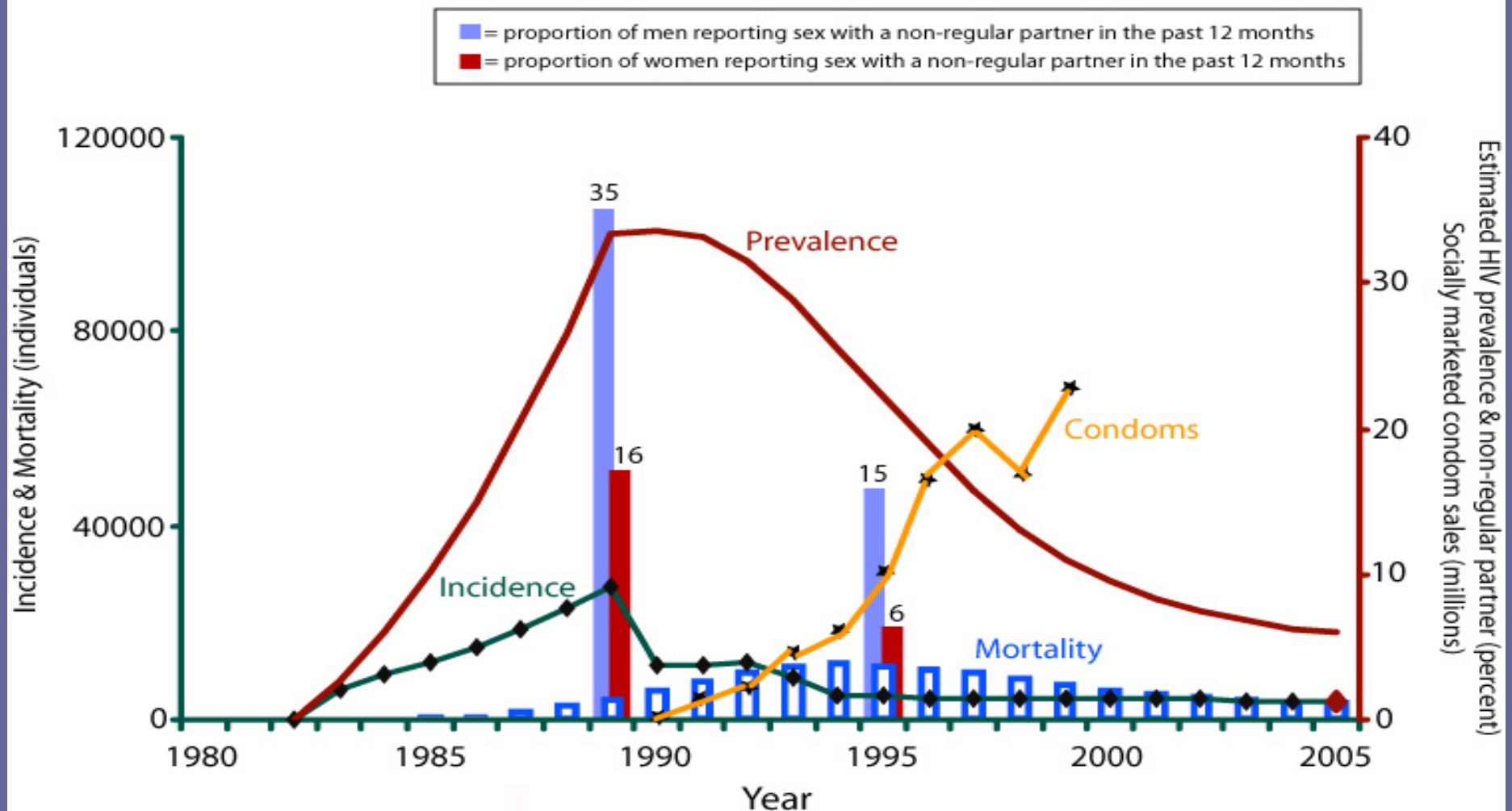
# Botswana – MC Uptake of 80% over 10 Years (Relative Risk = 0.33)



— Male HIV Prevalence      — Female Prev.      — MC Prev.

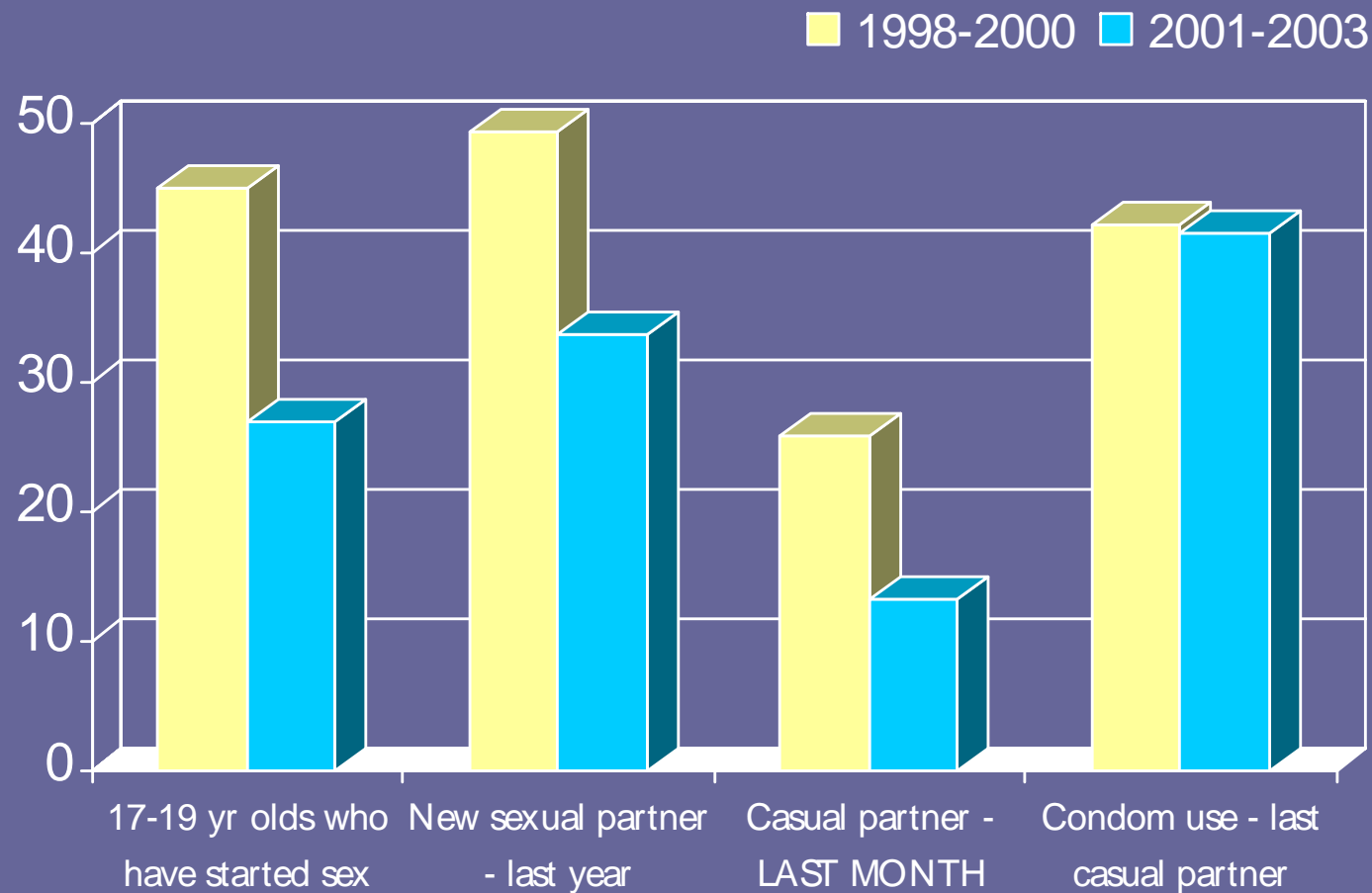
# Early successes: Uganda and “zero grazing”

“Trends” in HIV prevalence, incidence and possible correlates over time



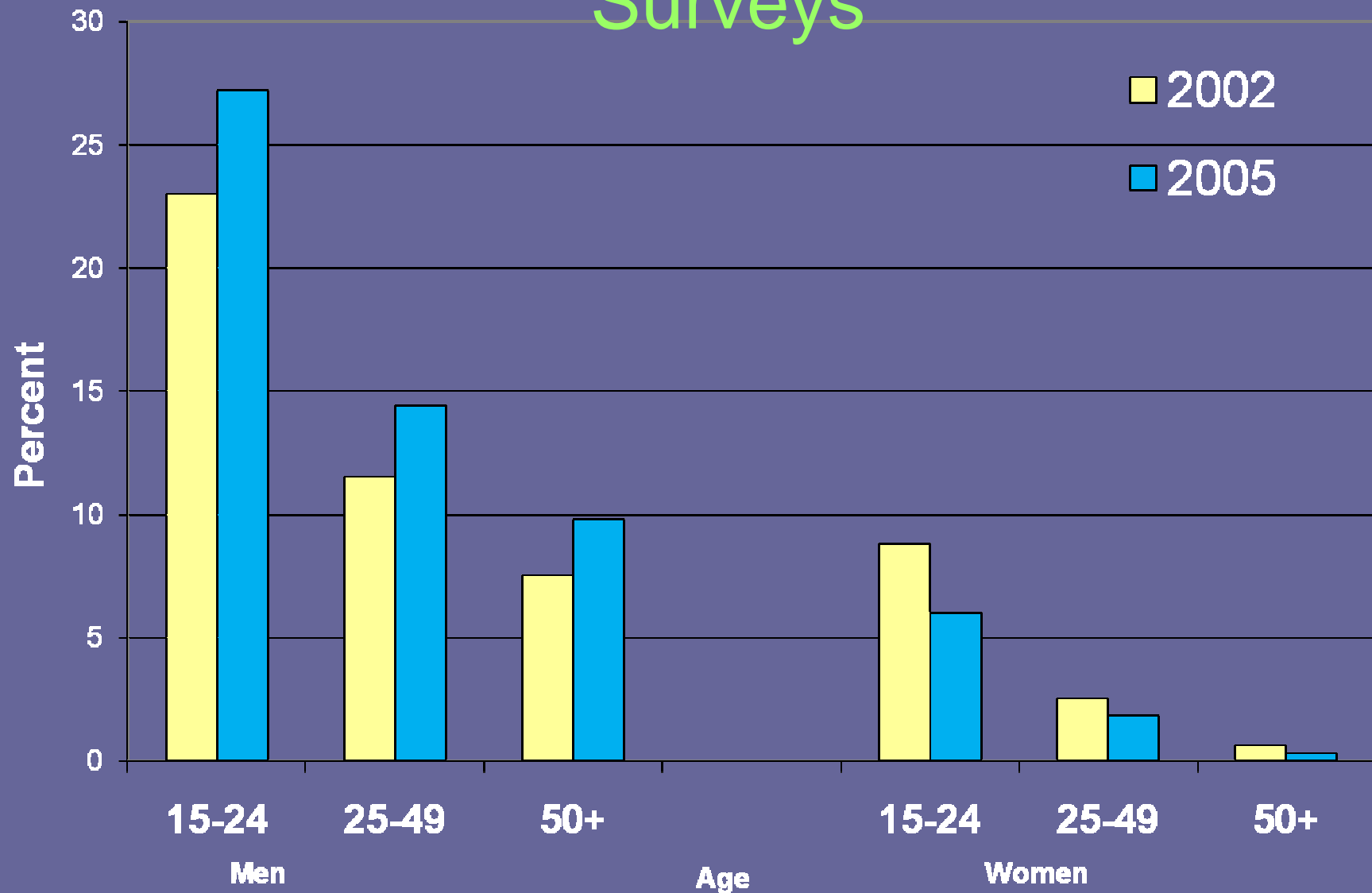
Adapted from Stoneburner and Low-Beer, in *Science* (30 April 2004)

# Behavior Change among Males in Manicaland, Zimbabwe





# % Reporting 2+ Partners in last 12 Months, South African National Surveys



**I'm Circumcised,  
proud of it...**



**and I'M  
STILL FAITHFUL TO MY PARTNER.**



For Access to Male Circumcision &  
other Male Sexual Reproductive  
Health Services, visit FLAS  
Mbatima  
Sanaa Street; Tel: 4046680/4049916  
Fax: 404 6807  
Email: flasaba07@fricaonline.co.ke



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# The Standard HIV Prevention Methods -

- ***Condom Promotion:*** Success stories (e.g., Thailand), in concentrated epidemics driven by commercial sex work, etc.
- ***HIV Testing and Counseling:*** Important as gateway to treatment/care – but little evidence of reducing risky behavior
- ***Treatment of Other Sexually Transmitted Diseases:*** Also important for public health reasons, yet 7 out of 8 clinical trials found reduced STDs but no impact on HIV
- ***Youth (including Abstinence-based) Programs:*** Worth promoting delay of debut, use of contraception, etc., but little likelihood of impacting on the overall HIV epidemic

# "ABCs" of HIV Prevention

**A B C C C**

**ircumcision  
ontraception**

# Which Model for Southern Africa?

## ○ **Botswana:**

- A mainly donor-driven, *top-down* response focusing on clinical service and commodity provision
- Prioritized condom promotion to general population
- Supported by strong political leadership

## ○ **Uganda:**

- Prioritized ***behavior change*** (particularly ***partner reduction***) in the general population through a “zero-grazing” approach, involving **churches**, traditional leaders & healers, etc.
- Featured a **grassroots, community-based**

## **The Difference between Response to AIDS in Botswana, compared to Uganda:**

**“Aids had not gone beyond the headspace of awareness, education and counselling to a lower centre of gravity between the gut and the heart of behaviour change.”**

**(Daniel Low Beer, 2003)**

## “Female-Controlled Method” of HIV Prevention?: Uganda in Late 1980s

The horror of Slim is forcing people to change social habits....A number of wives openly go so far as to confess that Slim has saved their marriages...In Bugolobi, a young housewife with three children, declared with a gleam in her eye, “There has been a positive change in our marriage. My husband stays at home much more. And I encourage him to do so by enthusiastically keeping him informed of the latest gossip about Slim victims.”

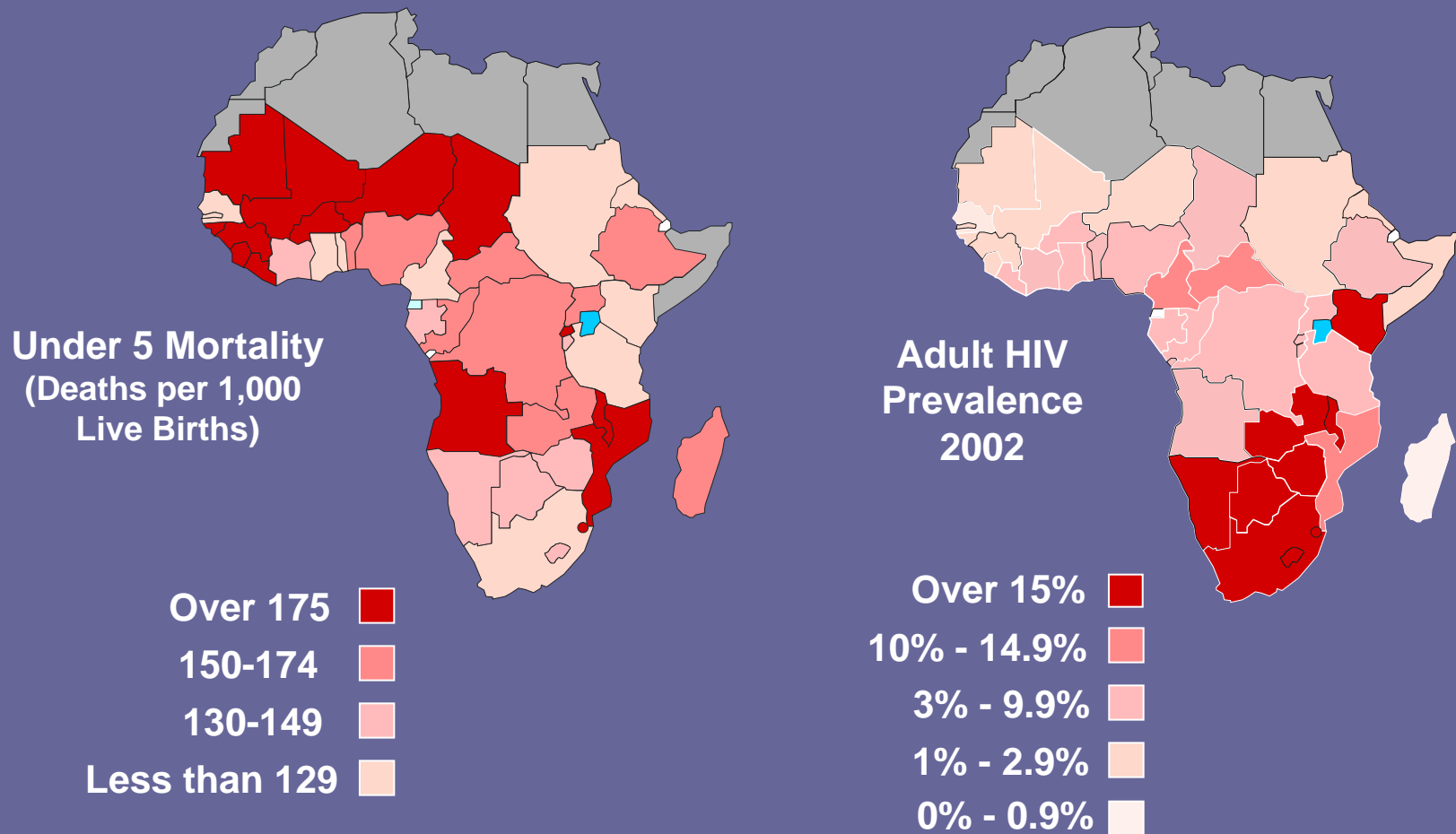
(New Vision, October 23, 1987, p.10)

# Role of Faith Communities in Uganda:

- Most people (98%) belong to one of three faith communities:
  - Catholic, Anglican, or Muslim
  - Churches are hierarchical and well organized
- Focus group respondents emphasized the role of the church:
  - During Sunday services
  - *During/after funerals*
- Behavioral focus
  - Initially on faithfulness and “zero grazing”
  - Many later accepted condoms (but mainly emphasized monogamy and abstinence)

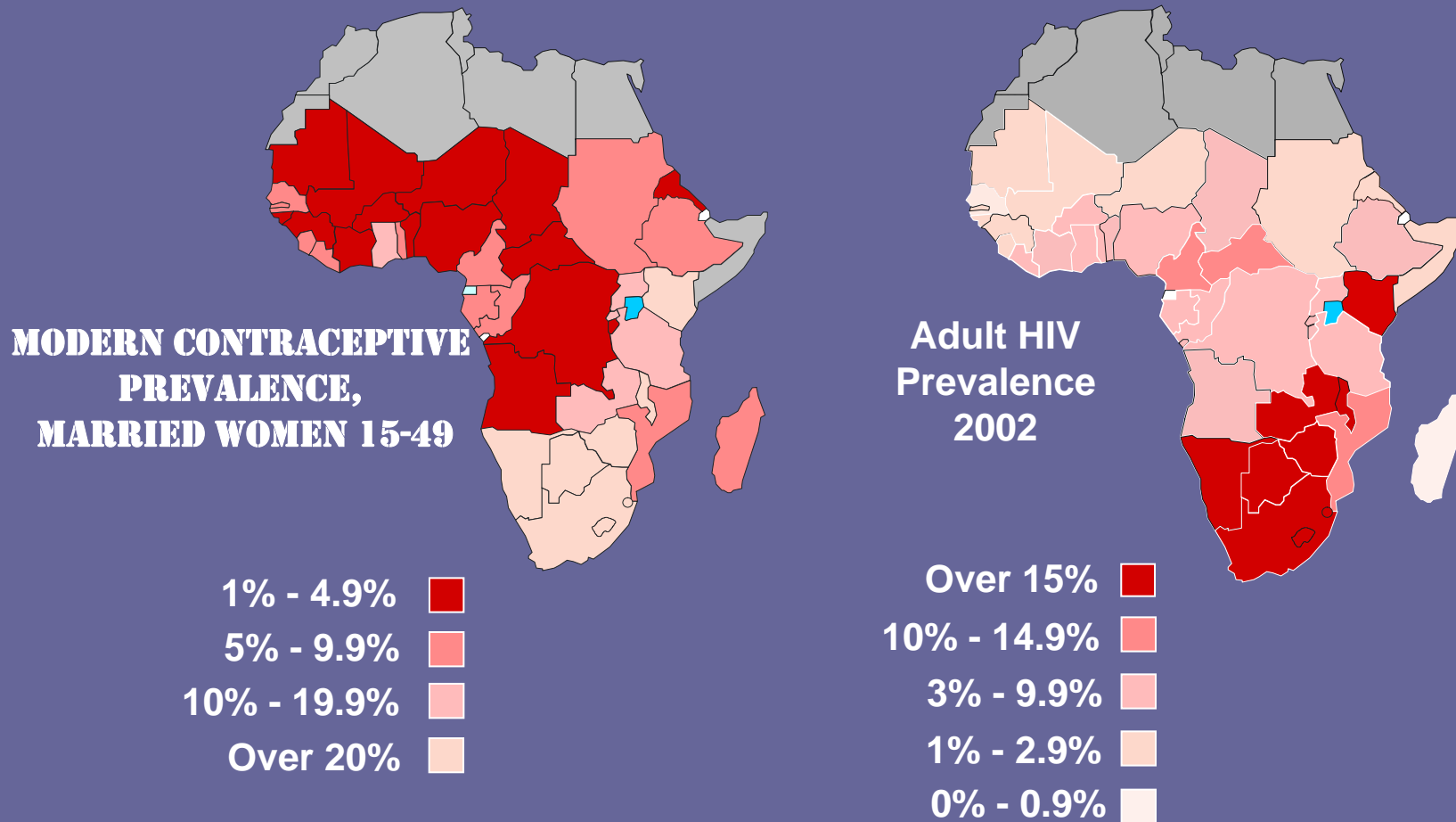


# Under 5 Mortality and Adult HIV Prevalence



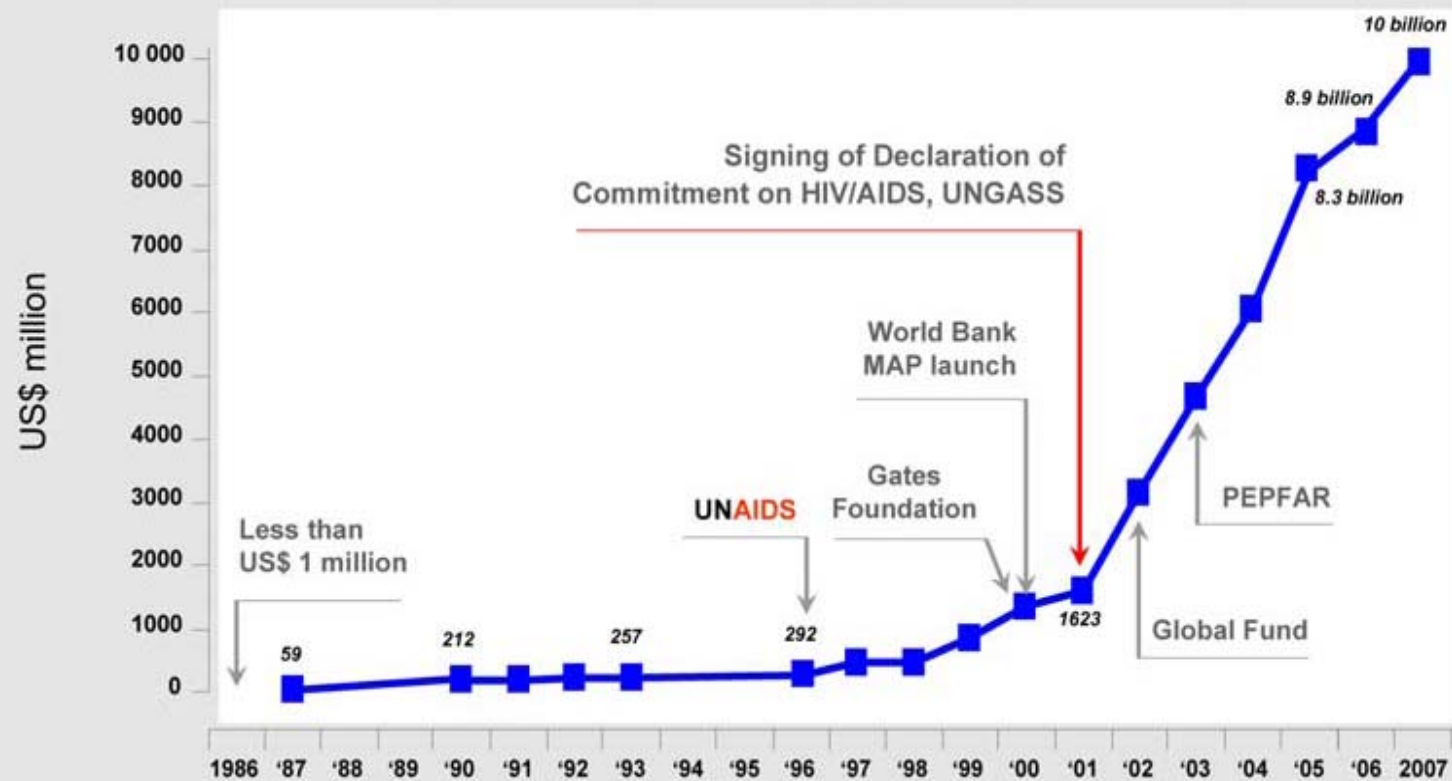
Source: UNAIDS/WHO; U.S. Census Bureau

# Contraceptive Prevalence and Adult HIV Prevalence



*Source: Report on the global HIV/AIDS epidemic. UNAIDS, July 2002; DHS; UN. Hill K, et al. Estimates of maternal mortality for 1995, Bulletin of the World Health Organization 79(3), WHO 2001: 182-193.*

# Total annual resources available for AIDS 1986-2007

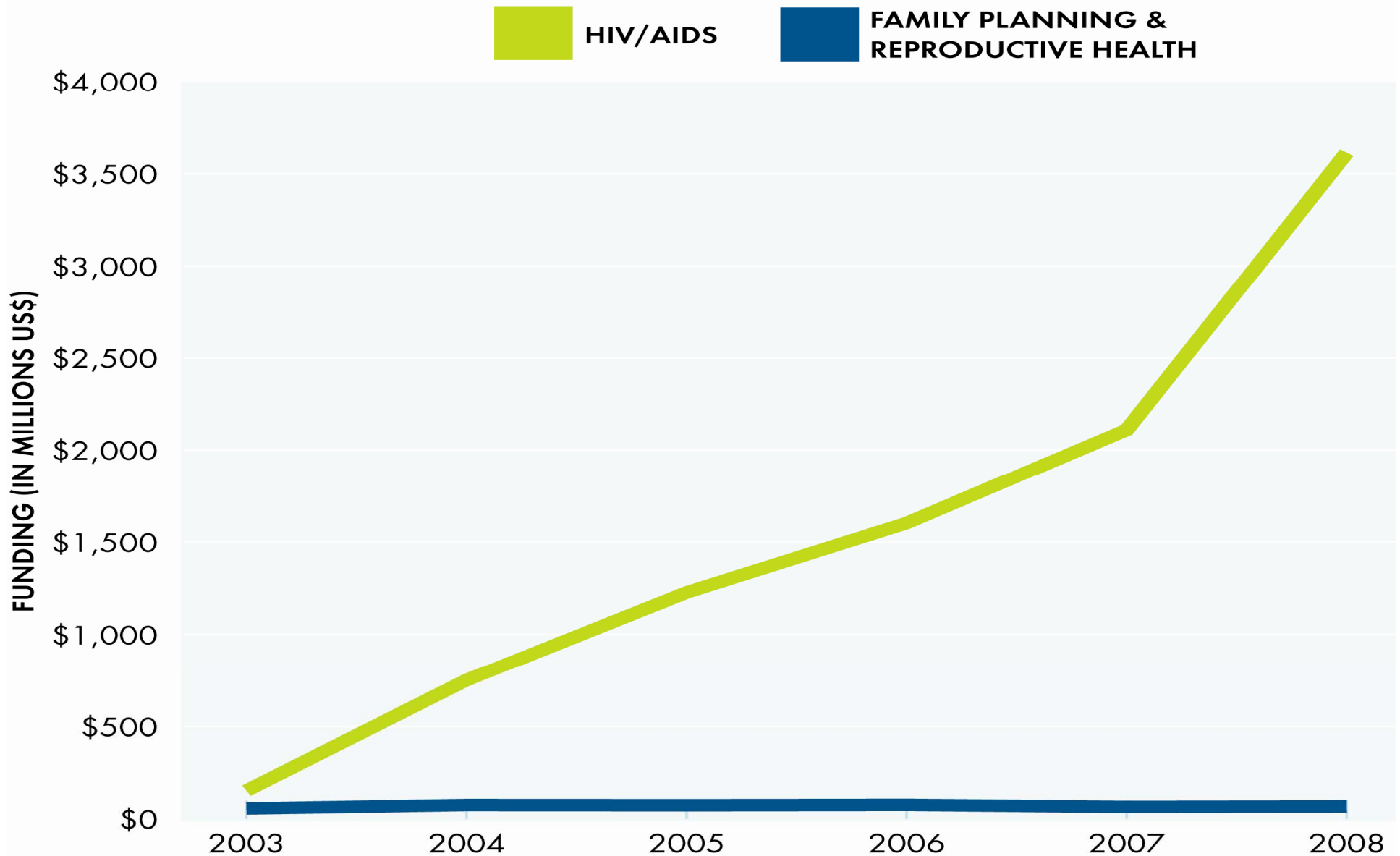


Notes : [1] 1986 - 2000 figures are for international funds only; [2] Domestic funds are included from 2001 onwards

[i] 1996 - 2005 data: Extracted from 2006 Report on the Global AIDS Epidemic (UNAIDS, 2006)

[ii] 1986 - 1993 data: AIDS in the World II. Edited by Jonathan Mann and Daniel J. M. Tarantola (1996)

**FIGURE 1: U.S. FP/RH and HIV Funding for Focus Countries, Allocated 2003-2006, Requested 2007-2008**



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[http://www.harvardaidsprp.org/symposia-  
events/HalperinHUPApresentation011707.ht  
ml](http://www.harvardaidsprp.org/symposia-events/HalperinHUPApresentation011707.html)