HIV transmission and sex:
Why can't we get it right?
"aka: "How much of this is behaviour and how much is inherent risk?"

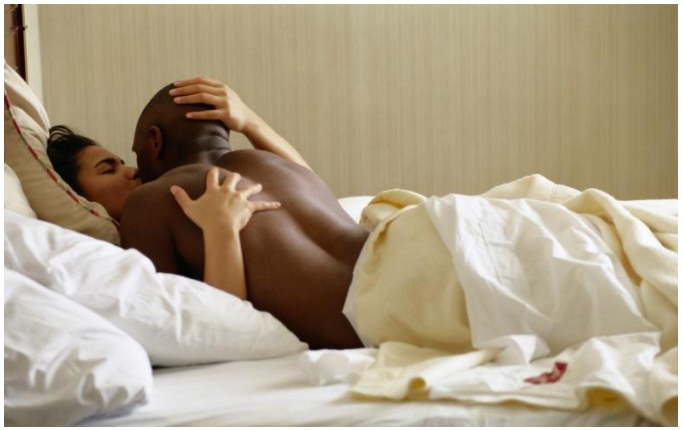
Francois Venter

Deputy Executive Director, WRHI

Wits Reproductive Health and HIV Institute

Associate Professor, Department of Medicine

University of the Witwatersrand, Johannesburg, South Africa



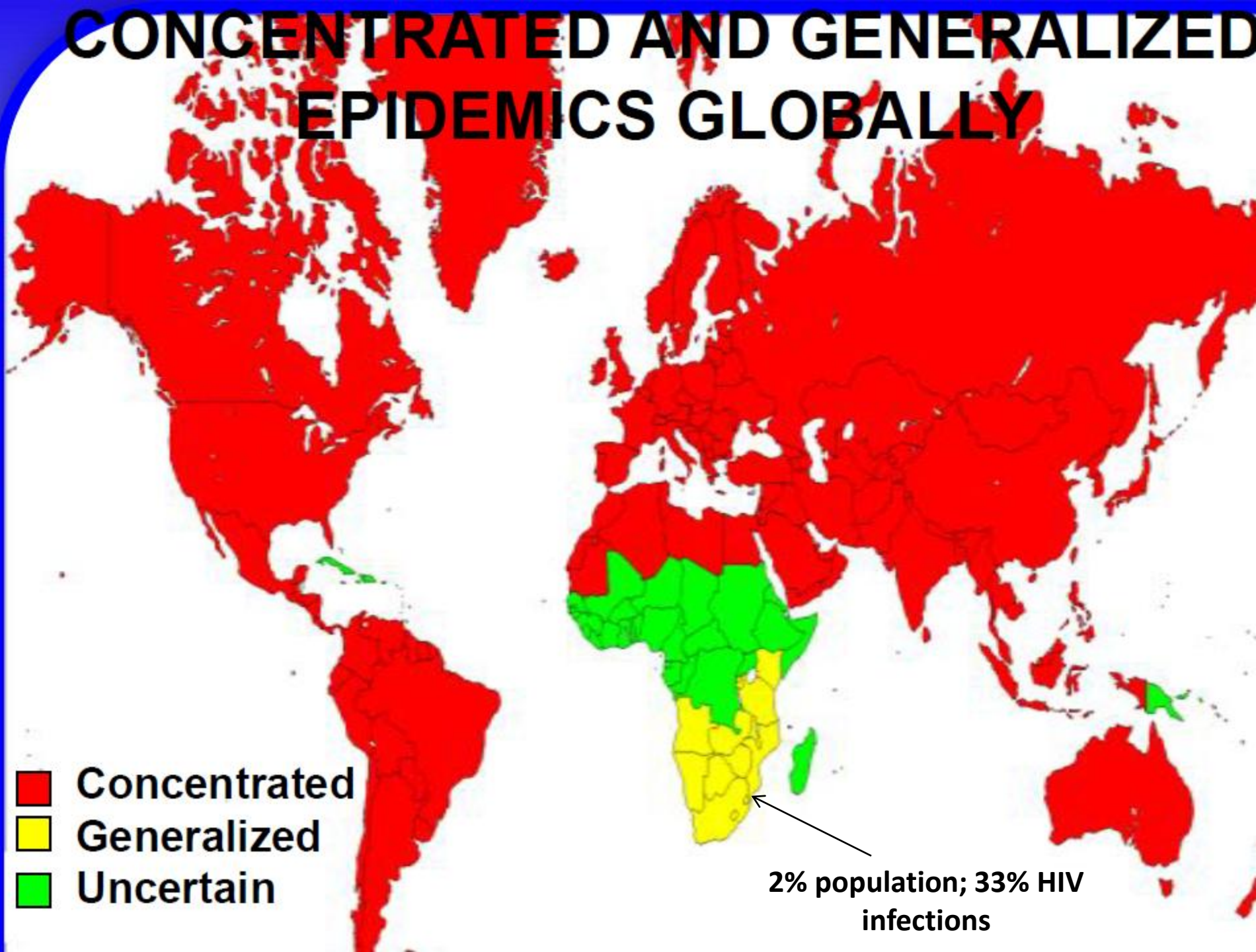
Thanks to David Wilson, Clinical Care Options, Helen Rees, Marlise Richter, Dan Savage, Daniel Halperin, Soul City, Mike Cohen, Laurie Bruns, Matthew Chersich, Samantha Barichievy ,Mark Lurie

WRHI
Wits Reproductive Health and HIV Institute

USAID
UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

OFFICE OF THE UNITED STATES GLOBAL AIDS COORDINATOR

CONCENTRATED AND GENERALIZED EPIDEMICS GLOBALLY



Warning

- Not for delicate sensibilities
- Too many slides, talk will jump all over the place

“It’s about sex. Duh!” – Cal Bruns, marketing guru, Matchbox

Why this talk?

- Growing frustration with prevention failure
- Promoting prevention programmes with no evidence
- Bad science and rhetoric

Sex is God's joke on human beings. ~Bette Davis

The NEW ENGLAND JOURNAL of MEDICINE

CASE RECORDS of the MASSACHUSETTS GENERAL HOSPITAL

Case 15-2011: A 19-Year-Old South African Woman with Headache, Fatigue, and Vaginal Discharge

W.D. Francois Venter, F.C.P., Thumbi Ndung'u, B.V.M., Ph.D., and Quarraisha Abdool Karim, Ph.D.

PRESENTATION OF CASE

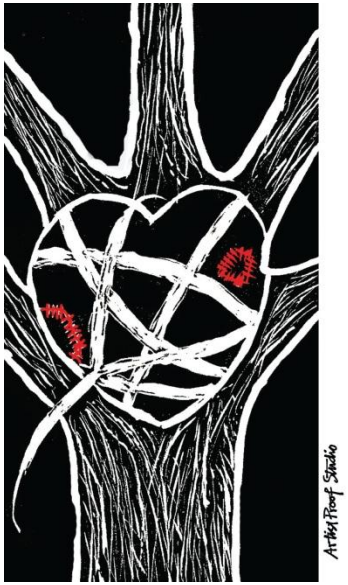
From the Wits Reproductive Health and HIV Institute and the Department of Medicine, University of the Witwatersrand, Johannesburg (W.D.F.V.); the HIV Patho-

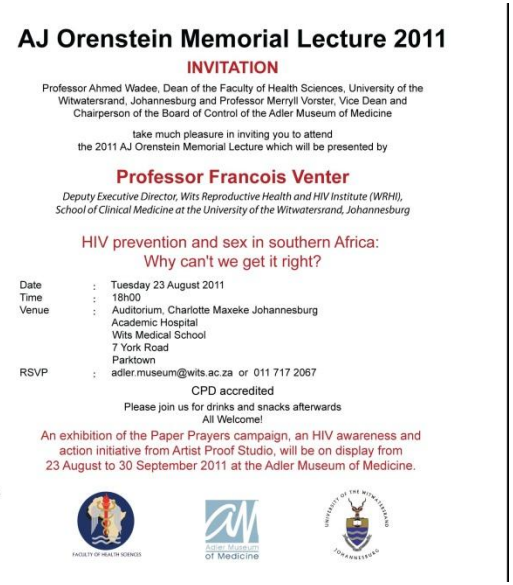
Dr. Fundisiwe Chonco (Department of Virology, University of KwaZulu-Natal, Durban, South Africa): A 19-year-old woman was seen in a clinic at McCord Hospital in Durban, KwaZulu-Natal Province, South Africa (which is affiliated with Massachu-

"Its like obesity. Behaviour change is impossible. Help them live with it." – Prof Jeff Wing, endocrinologist

History of this talk

- Email arguments with prevention mob
- Behaviour change debate – World Bank
- NEJM article, Kenya talk
- 5th AIDS Conference, July 2011
- AJ Orenstein Lecture, follow up lecture Society, SANAC…
- The Zille discussion – opinion piece of HIV and incarceration





AJ Orenstein Memorial Lecture 2011

INVITATION

Professor Ahmed Wadee, Dean of the Faculty of Health Sciences, University of the Witwatersrand, Johannesburg and Professor Merryll Vorster, Vice Dean and Chairperson of the Board of Control of the Adler Museum of Medicine

take much pleasure in inviting you to attend
the 2011 AJ Orenstein Memorial Lecture which will be presented by

Professor Francois Venter

Deputy Executive Director, Wits Reproductive Health and HIV Institute (WRHI), School of Clinical Medicine at the University of the Witwatersrand, Johannesburg

HIV prevention and sex in southern Africa:
Why can't we get it right?

Date : Tuesday 23 August 2011
Time : 18h00
Venue : Auditorium, Charlotte Maxeke Johannesburg Academic Hospital
Wits Medical School
7 York Road
Parktown
RSVP : adler.museum@wits.ac.za or 011 717 2067

CPD accredited
Please join us for drinks and snacks afterwards
All Welcome!

An exhibition of the Paper Prayers campaign, an HIV awareness and action initiative from Artist Proof Studio, will be on display from 23 August to 30 September 2011 at the Adler Museum of Medicine.

Sponsored Links: IOL Travel Personal Finance IOL Lifestyle Motoring SciTech Tonight

The Star

You want an e-tag? What you need to know

iol Home | The Star Home | News | World | Sport | Verve | Consumer Watch | Metro Watch

SA Time: 25 January 2012 04:25:28 PM

Moral panic clouds reality

November 29 2011 at 09:00am
By Francois Venter

Comment on this story

Helen Zille's recent very public foray into HIV prevention and treatment – "Why should we pay for irresponsible sexual behaviours?" – is only a more recent example of this popular wisdom.

The formation a decade ago of the Moral Regeneration Movement (ironically lead by Jacob Zuma), Thabo Mbeki's reflections on black male sexuality in an address at Fort Hare University, the various politicians who have lectured the nation (often subsequently, and hilariously, getting caught with their pants down in the wrong bedroom) have all

"I sit in my HIV clinic with my frightened, bewildered patients who have to endure the headlines screaming for their punishment.

These people look pretty normal to me. "

IOL news

Nelson Mandela
IOL's special feature

IOL Home | Crime & Courts | Politics | South Africa | Africa | World | Back Page | Special Features

SA Time: 25 January 2012 04:18:54 PM

Zille slams 'Aids Gestapo'

December 5 2011 at 07:43am
By Michelle Jones

Comment on this sto

Related Stories

- 'Get tested' contest upsets TAC
- Zille hails Simelane verdict
- First 'HIV lucky draw' winner picked

DA leader Helen Zille has accused HIV/Aids activists of acting like an "Aids Gestapo", a report has said.

According to the Cape Times, Zille wrote in her weekly newsletter on Sunday that human rights activists were selective in the rights they chose to promote and, while claiming to own the moral high ground, "they hunt in a vicious pack" to prevent anyone questioning their assumptions.

Zille said "slacktivists" was too gentle a term for such activists. Instead, she called them "Aids Gestapo", the report said.

DA leader Helen Zille has accused HIV/Aids activists of acting like an Aids Gestapo, a report has said. Photo: Melinda Stuurman

Asked who specifically the "Aids Gestapo" was, Zille reportedly said: "I am not going to personalise it by naming names. If I do that, it will merely end up as a wrangle and the points I am making will get lost."

"If you can't beat them, join them," Zille wrote in her newsletter. "(Venter) seems to be finding the ultimate cop-out to avoid the debate on behaviour change and reinforcing denialism."

THE BIG READ: Helen's hyperbole

Rebecca Hodes | 07 December, 2011 23:50

Helen Zille has been accused of racism after using the term 'professional black' in a Twitter argument. **Image by:** ESA ALEXANDER

Lest I be accused of knee-jerk anti-DA sentiment, I'd like to say that I have immense respect for Helen Zille. I have never doubted her commitment to

You ain't seen nothing yet • 25 January 2012, 16:14:49 (South Africa)

DAILY MAVERICK

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Opinionista — Rebecca Hodes

Helen Zille and the misuse of metaphor

In her tirade against the "Aids Gestapo", DA leader Helen Zille has misunderstood the role of race in recent debates about HIV infection in South Africa. And that's even before we consider how she has misapplied the Gestapo metaphor itself, thereby rendering her argument valueless.

Lest I be accused of knee-jerk anti-DA sentiment, I'd like to begin this column by stating that I have immense respect for Helen Zille. Yes, Zille made some errors in her tenure as leader of the opposition, but I have never doubted her commitment to democracy in South Africa. Unlike the present numbers of cohorts of cronies in government, particularly at provincial levels, it is

24 Twee 12

Disclosures

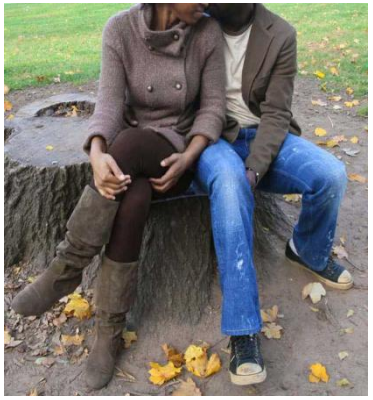
- Support from Pepfar, pharmaceutical companies, Gates Foundation
- Clinician NOT behaviourist – PEP and patient experience
- TMI: Heterosexual, in a relationship>year

“We need better statistics for South Africa. And notification!”

Getting to Success:
Improving HIV Prevention Efforts in South Africa

SOUTH AFRICA
HIV Epidemic, Response and Policy Synthesis

Caveats



- BAD data – poorly conducted studies, observational data, dubious conclusions
- ‘Common sense’ approach
- Sex data = nutritional data – recommendations with huge implications for lifestyle based on very poor research
- Relies largely on self-reported behaviours
- And non-verifiable ‘intended decision’
- No one really takes any account of data anyway – opinion upon opinion

Dutch study – men retracted their 'only oral' history

Keet et al., Orogenital sex and the transmission of HIV among homosexual men; AIDS 1992

- 102 homosexual men with known dates of seroconversion
- 20 reported no ano-genital sex behavior in prior 6-9 months on written questionnaires
- 11 of 20 (55%) later report receptive anal intercourse (RAI) in face-to-face interviews
- 5 of 9 (56%) who denied RAI had insertive anal intercourse

CDC 2007

- US: Average male population lifetime sexual partners = 7. Average female lifetime = 4
- Someone is lying

- “"The data shows that 31% of all deaths in 2011 were Aids-related. “ - SA Institute of Race Relations

Before and after initiation of ARV therapy! "…one of medicine's modern miracles"

How long will people live for?

- ? 20 years or more on the treatment package !! Danish study – 39 years!
- American – lose 12 years
- French – NORMAL after 6 years
- Uganda 2011 study: Normalises life expectancy
- Geriatrics, fertility

Decades! ***?normal life expectancy***

Reality check…

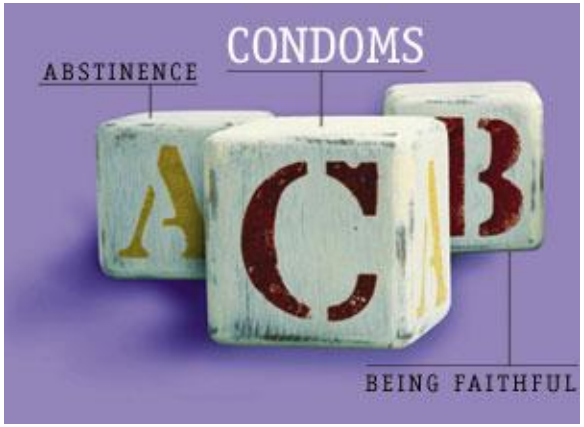
- ½ all South Africans will contract HIV
- And will need treatment for life

We have to fix prevention!

3 new infections

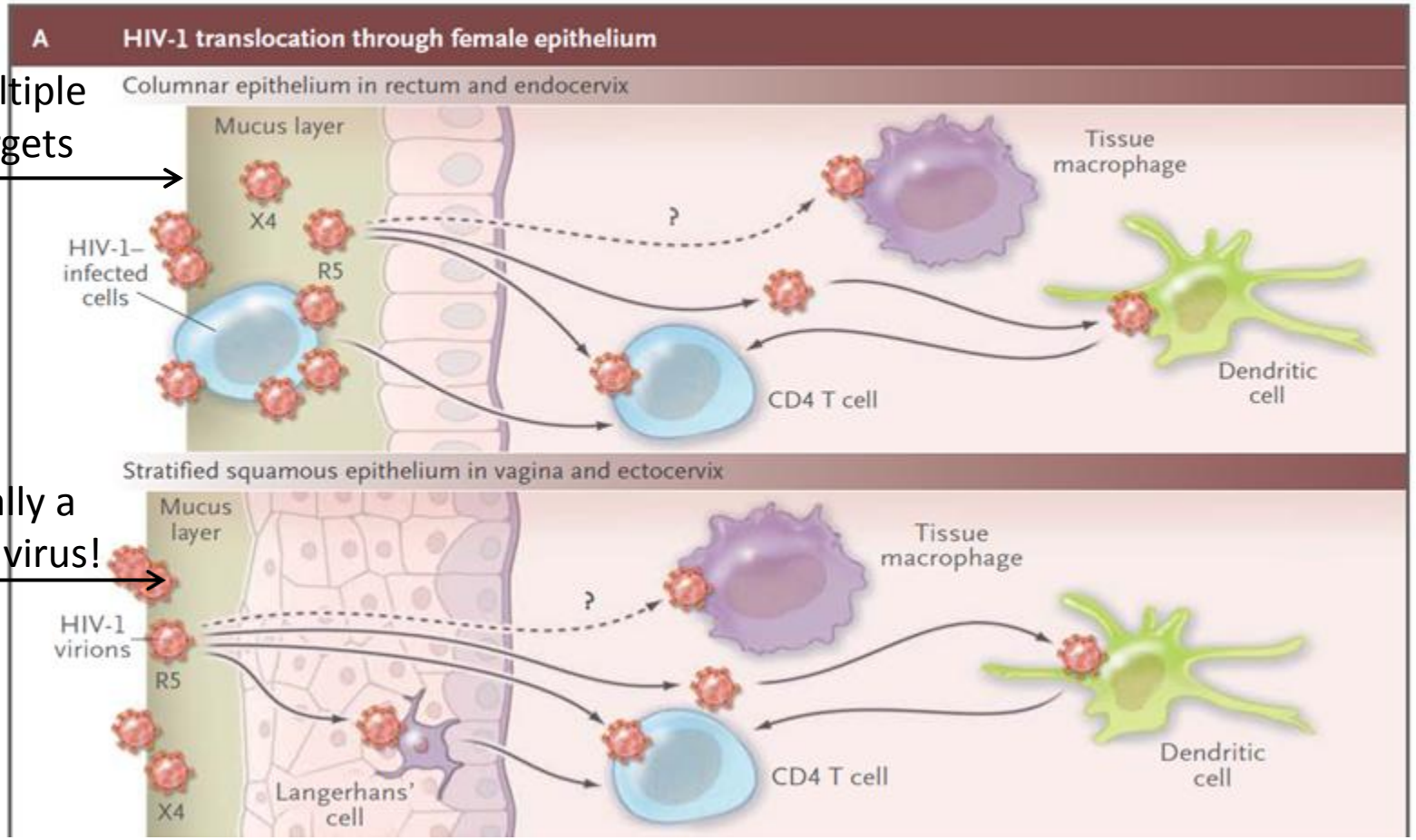
For every 2 people started on ART

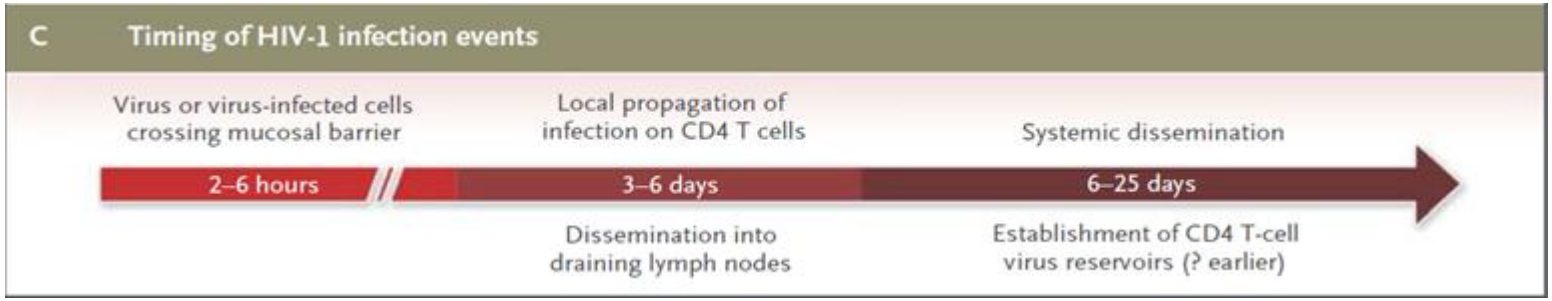
So how does transmission work?



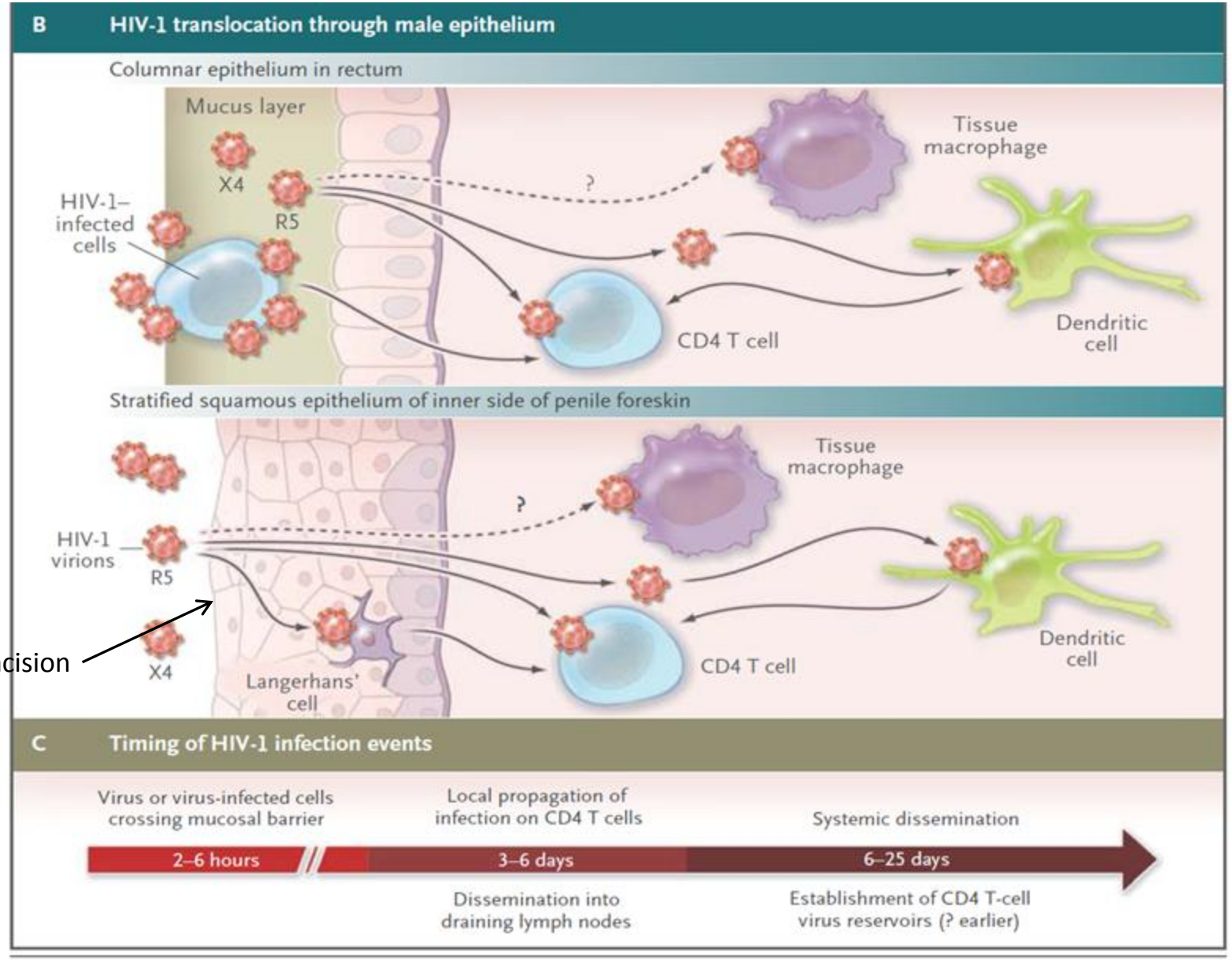
Multiple targets

Usually a single virus!





Cohen et al, NEJM, 2011



Circumcision

Cohen et al, NEJM, 2011

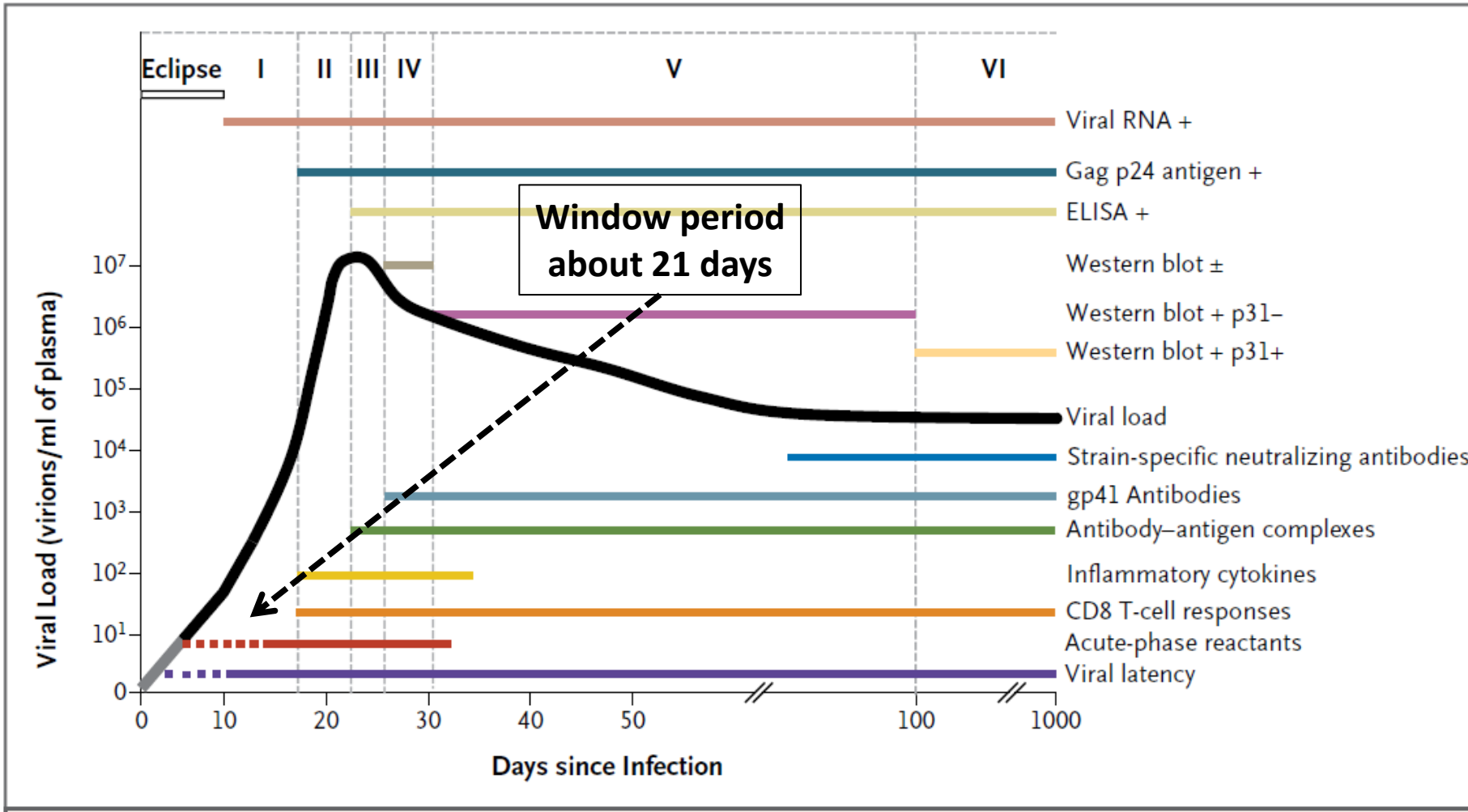


Figure 2. Natural History and Immunopathogenesis of HIV-1 Infection.

Cohen et al, NEJM, 2011

How does this help us?

Routes of Exposure and HIV.

INFECTION ROUTE **RISK OF INFECTION**

Sexual Transmission

a. Female-to-male transmission.....1 in 700 to 1 in 3,000
b. Male-to-female transmission.....1 in 200 to 1 in 2,000
c. Male-to-male transmission.....1 in 10 to 1 in 1,600
d. Fellatio??..... .0 %

It is hard to get HIV!

Parenteral transmission

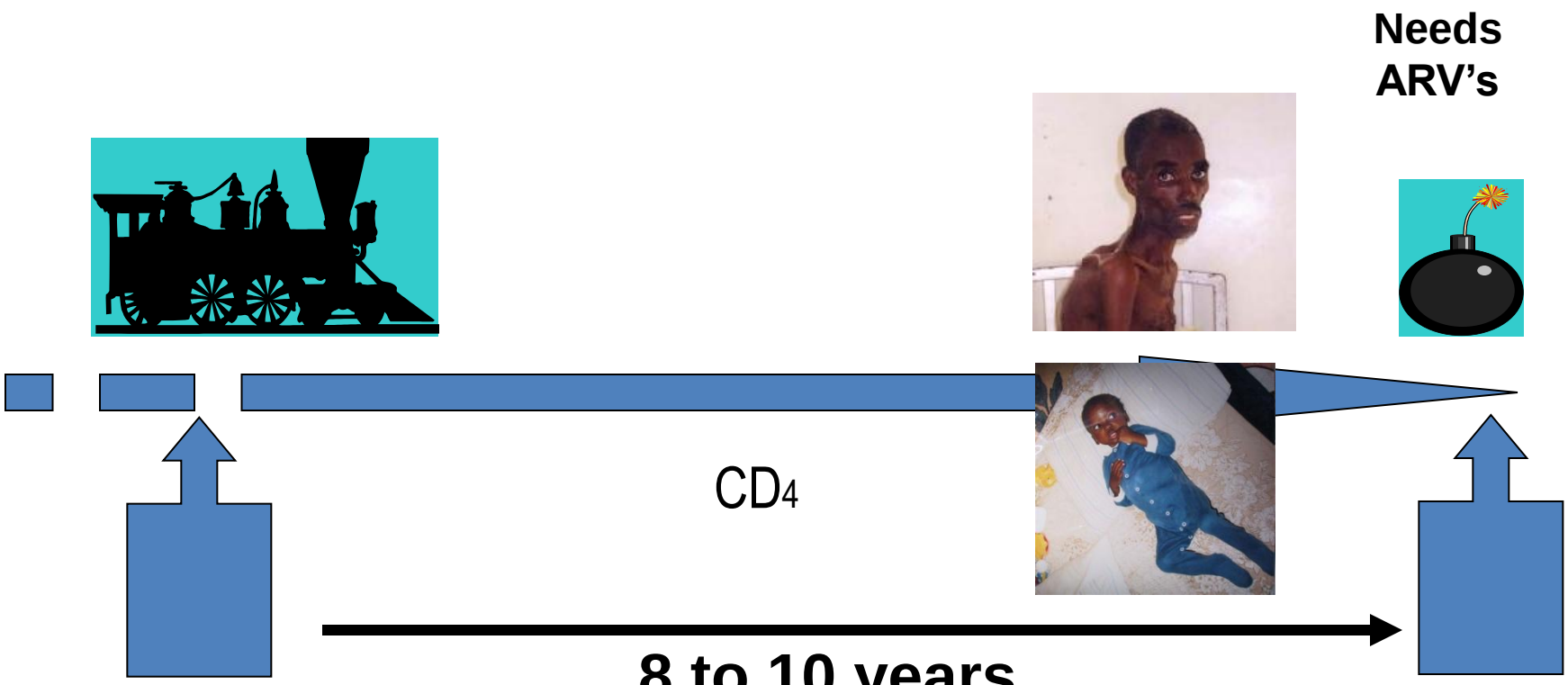
a. Transfusion of infected blood.....95 in 100
b. Needle sharing.....1 in 150
c. Needle stick.....1 in 200
d. Needle stick /AZT PEP.....1 in 10,000

Transmission from mother to infant

a. Without AZT treatment.....1 in 4
b. With AZT treatment.....Less than 1 in 10

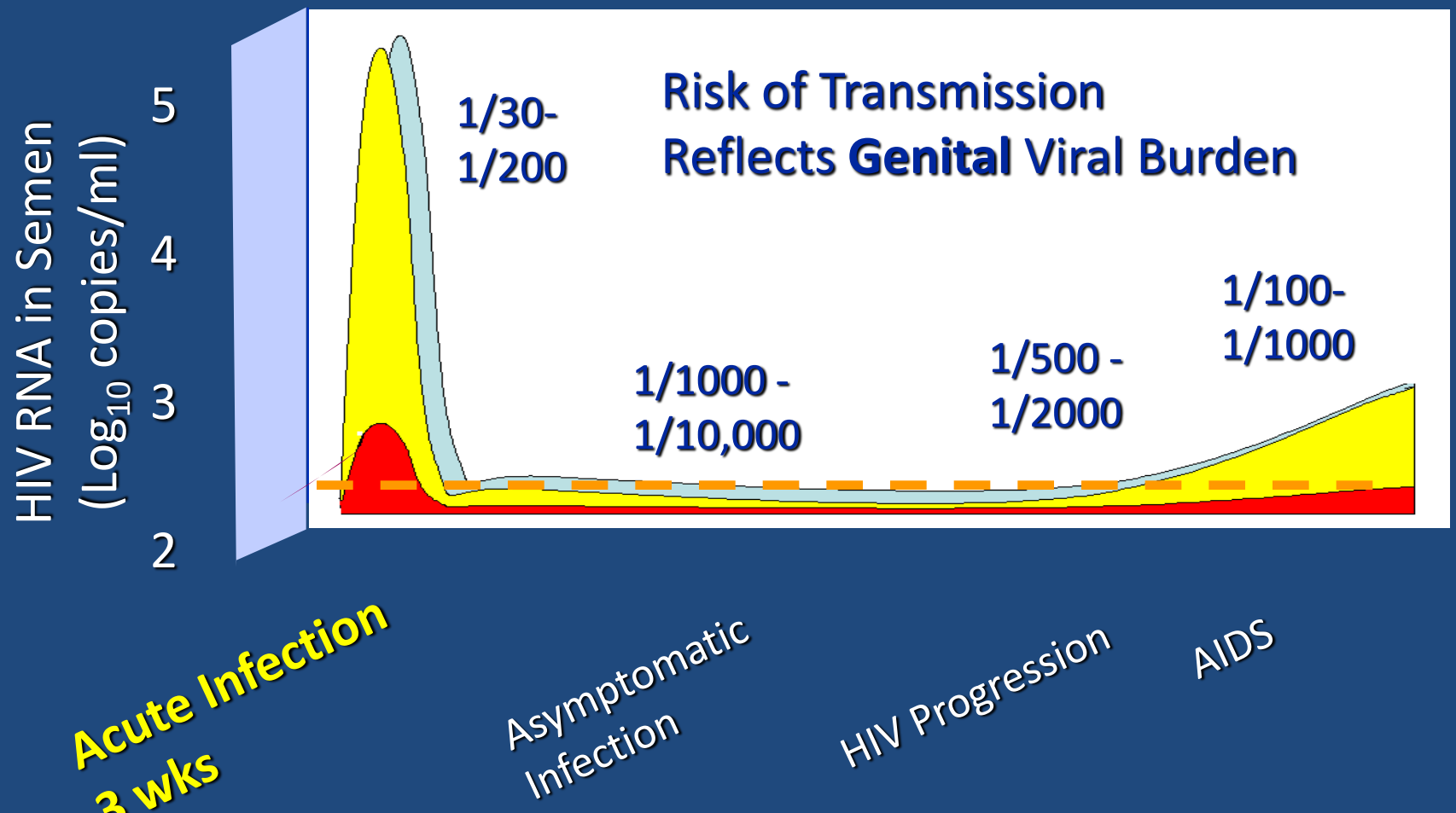
Adapted from Royce, Sena, Cates and Cohen, NEJM 336:1072-1078, 1997

HIV ‘natural history’



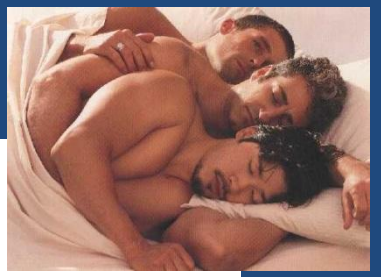
Sexual Transmission of HIV

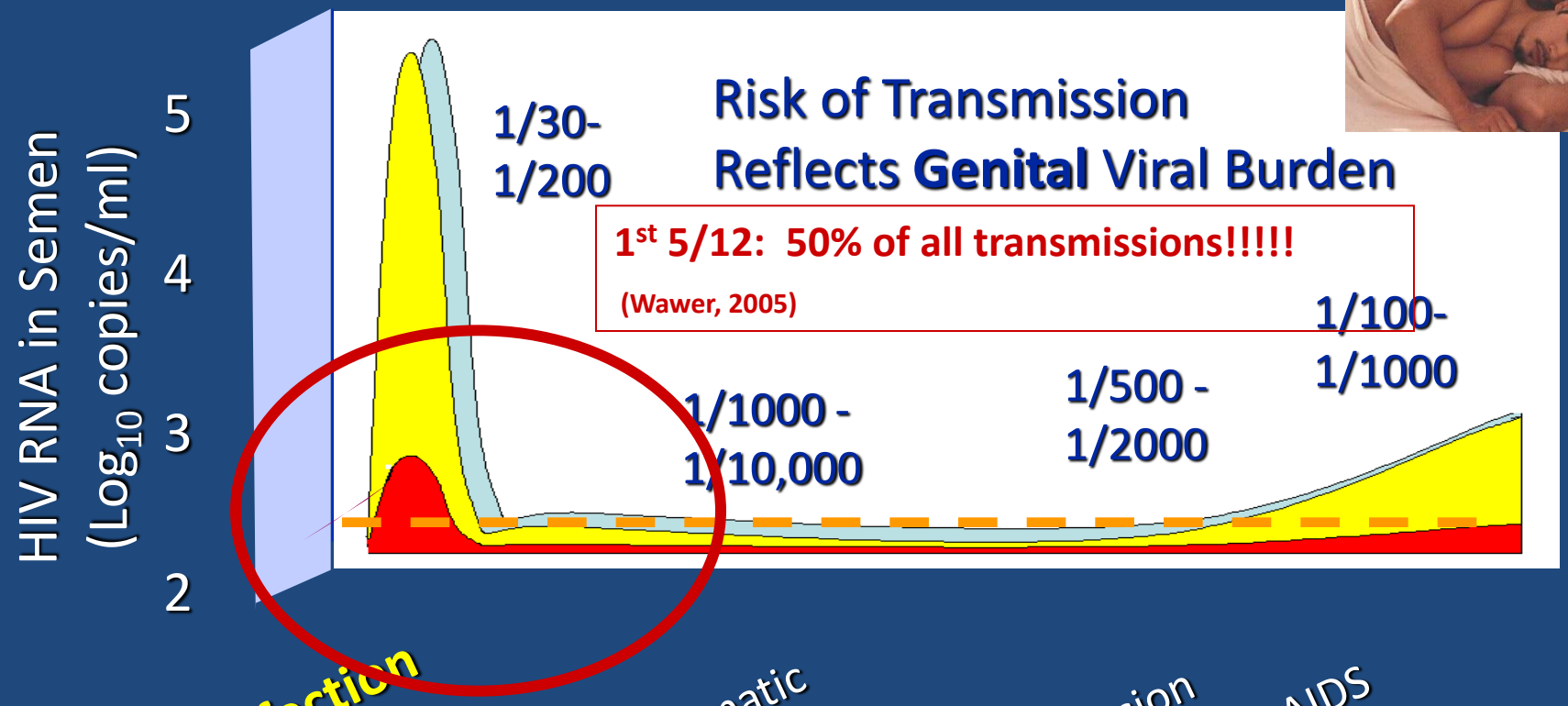
(Adapted from CohenWawer et al. Lancet 351: 1998; JID 2005)



Sexual Transmission of HIV

(Cohen et al. Lancet 351: 1998)





What is the biggest news of the year?

- HPTN 052

HPTN 052: Immediate vs Delayed ART in Serodiscordant Couples

HIV-infected, sexually active serodiscordant couples; CD4+ cell count of the infected partner: 350-550 cells/mm^3

(N = 1763 couples)

Immediate ART
Initiate ART at CD4+ cell count 350-550 cells/mm^3
(n = 886 couples)

Delayed ART
Initiate ART at CD4+ cell count ≤ 250 cells/mm^3*
(n = 877 couples)

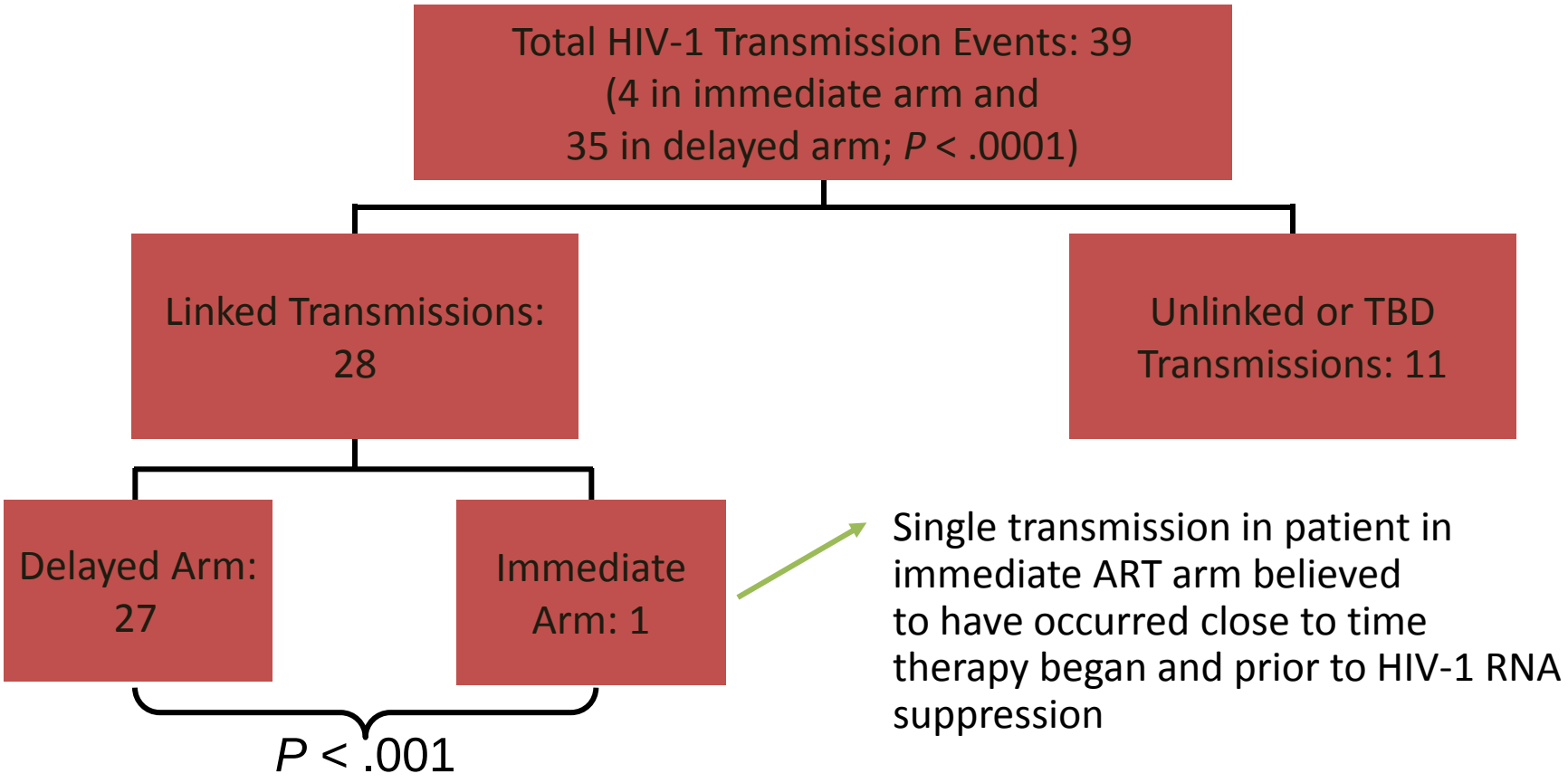
*Based on 2 consecutive values ≤ 250 cells/mm^3.

- Primary efficacy endpoint: virologically linked HIV transmission
- Primary clinical endpoints: WHO stage 4 events, pulmonary TB, severe bacterial infection and/or death
- Couples received intensive counseling on risk reduction and use of condoms

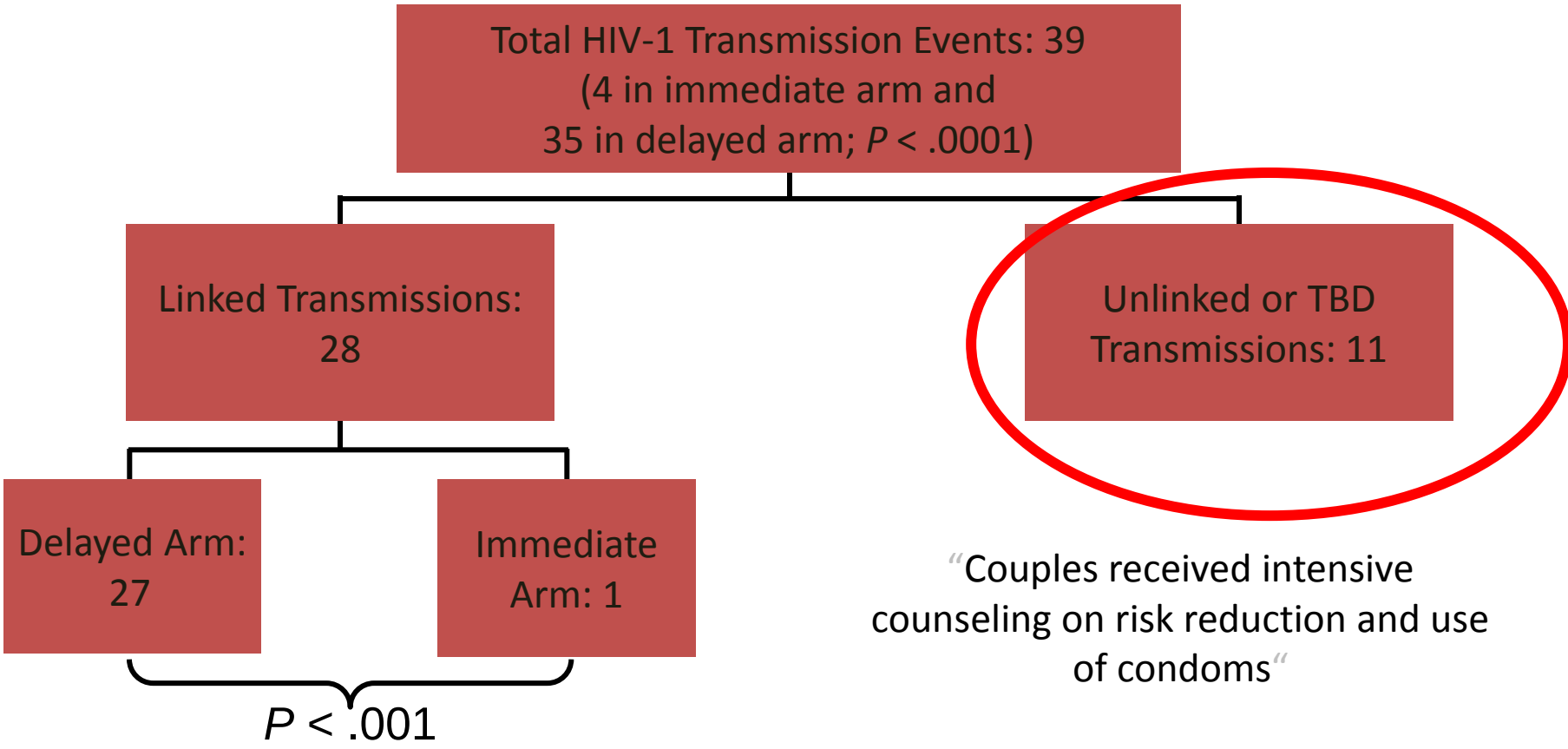
DSMB recommended release of results as soon as possible following April 28, 2011, review; follow-up continues but all HIV-infected partners offered ART after release of results

Cohen MS, et al. N Engl J Med. 2011].

HPTN 052: HIV Transmission Reduced by 96% in Serodiscordant Couples



HPTN 052: HIV Transmission Reduced by 96% in Serodiscordant Couples



"Couples received intensive counseling on risk reduction and use of condoms"

Antiretroviral therapy for HIV prevention

Universal voluntary HIV testing with immediate antiretroviral therapy as a strategy for elimination of HIV transmission: a mathematical model

Reuben M Granich, Charles F Gilks, Christopher Dye, Kevin M De Cock, Brian G Williams

Lancet 2009; 373: 48–57
Published Online November 26, 2008
DOI:10.1016/S0140-6736(08)61697-9

See Comment pages 7 and 9

Department of HIV/AIDS (R M Granich MD, Prof C F Gilks DPhil, Prof K M De Cock MD) and Stop TB Department (Prof C Dye DPhil, B G Williams PhD), WHO, Geneva, Switzerland

Correspondence to: Reuben Granich, Antiretroviral Treatment and HIV Care Unit, Department of HIV/AIDS, WHO, Avenue Appia 20, CH-1211, Geneva 27, Switzerland
granichr@who.int

Summary

Background Roughly 3 million people worldwide were receiving antiretroviral therapy (ART) at the end of 2007, but an estimated 6·7 million were still in need of treatment and a further 2·7 million became infected with HIV in 2007. Prevention efforts might reduce HIV incidence but are unlikely to eliminate this disease. We investigated a theoretical strategy of universal voluntary HIV testing and immediate treatment with ART, and examined the conditions under which the HIV epidemic could be driven towards elimination.

Methods We used mathematical models to explore the effect on the case reproduction number (stochastic model) and long-term dynamics of the HIV epidemic (deterministic transmission model) of testing all people in our test-case community (aged 15 years and older) for HIV every year and starting people on ART immediately after they are diagnosed HIV positive. We used data from South Africa as the test case for a generalised epidemic, and assumed that all HIV transmission was heterosexual.

Findings The studied strategy could greatly accelerate the transition from the present endemic phase, in which most adults living with HIV are not receiving ART, to an elimination phase, in which most are on ART, within 5 years. It could reduce HIV incidence and mortality to less than one case per 1000 people per year by 2016, or within 10 years of full implementation of the strategy, and reduce the prevalence of HIV to less than 1% within 50 years. We estimate that in 2032, the yearly cost of the present strategy and the theoretical strategy would both be US$1·7 billion; however, after this time, the cost of the present strategy would continue to increase whereas that of the theoretical strategy would decrease.

Interpretation Universal voluntary HIV testing and immediate ART, combined with present prevention approaches, could have a major effect on severe generalised HIV/AIDS epidemics. This approach merits further mathematical modelling, research, and broad consultation.

Funding None.

Mathematical model of universal HIV testing annually with immediate ART for HIV+ in southern African epidemic

95% reduction in HIV incidence in 10 years

Prevalence <1% in medium term

Major reduction in mortality

Cost-saving in medium term

Is expanded HIV treatment preventing new infections?: Impact of antiretroviral therapy on sexual risk behaviors in the developing world

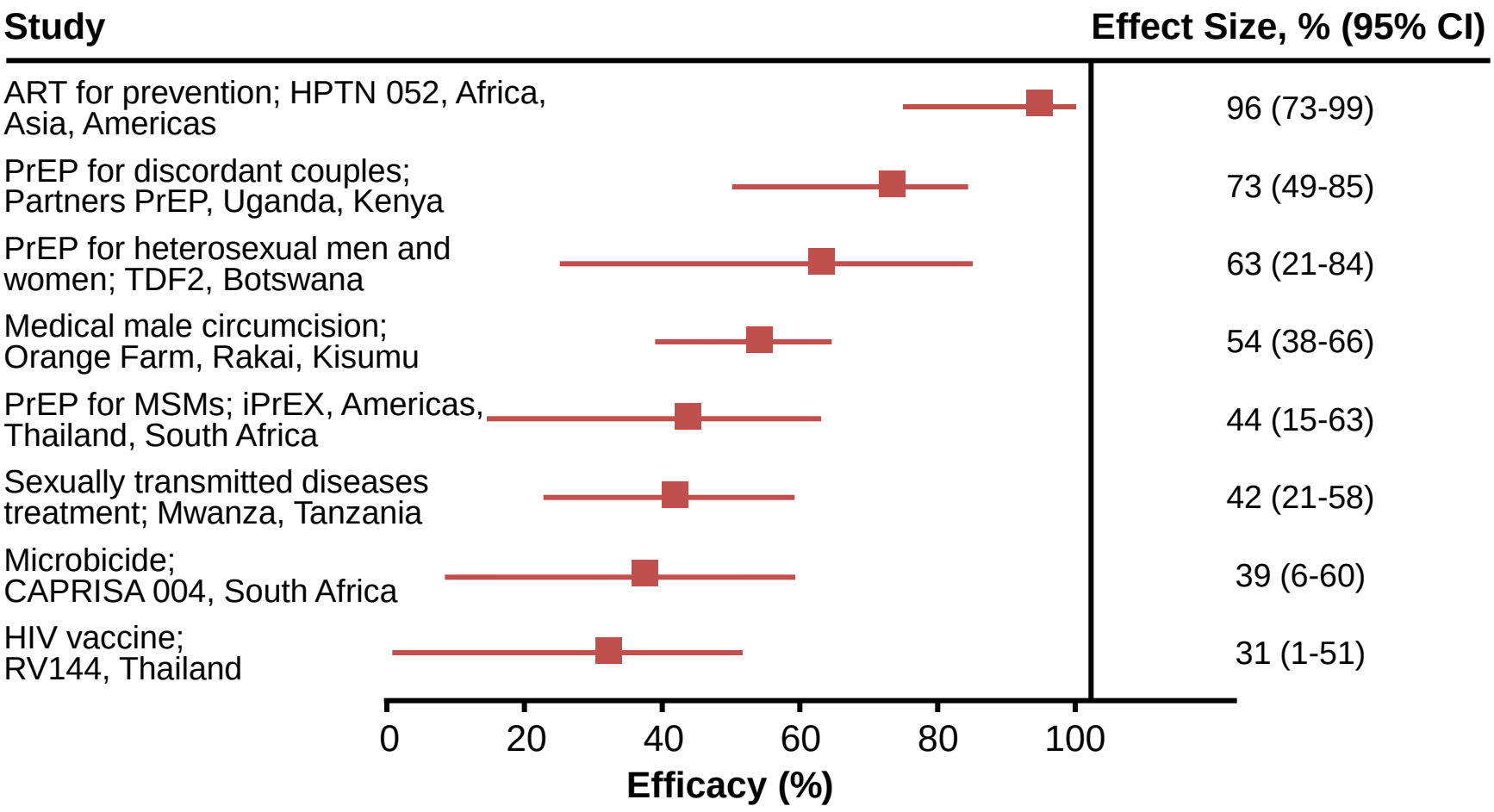
Kartik K Venkatesh[a], Timothy P Flanigan[a] and Kenneth H Mayer[b]

There have been dramatic increases in access to antiretroviral therapy (ART) across the developing world, and growing public health attention has focused on the possibility of utilizing ART as a means of slowing the global HIV epidemic. The preventive impact of ART will likely depend on decreasing levels of sexual risk behaviors following treatment initiation. The current review paper examines the impact of wider access to ART on sexual risk behaviors among HIV-infected individuals in the developing world. The observational studies to date demonstrate that ART is associated with a significant reduction in unprotected sex following treatment initiation. While data on the impact of ART on possible risk compensation is rapidly expanding across the developing world, more evidence is still needed before we can safely conclude expanded treatment will result in durable decreases in sexual risk behaviors.

AIDS 2011, **25**:000–000

Who is winning the biological prevention race?

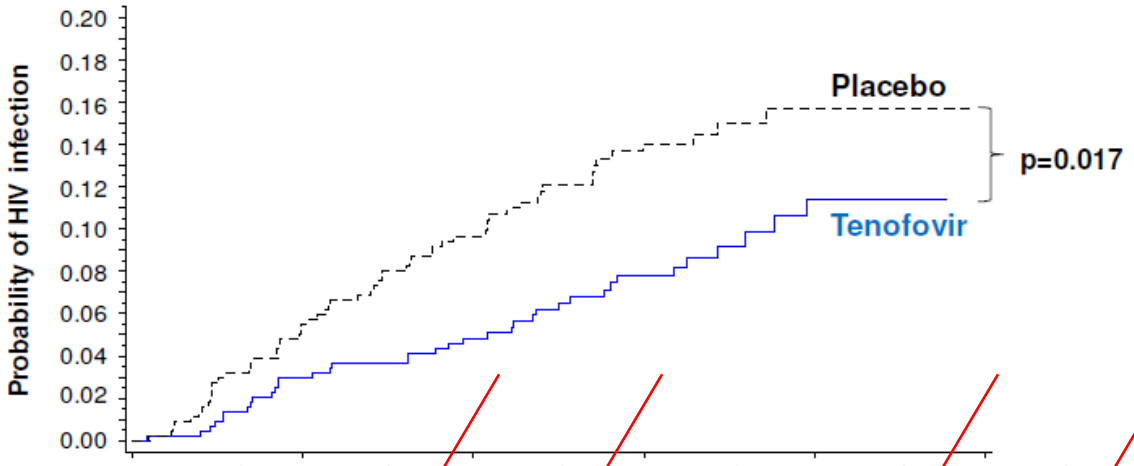
Efficacy of HIV Prevention Strategies From Randomized Clinical Trials



Abdool Karim SS, et al. Lancet. 2011;[Epub ahead of print].

But: Caprisa 004

HIV infection rates in the tenofovir and placebo gel groups: Kaplan-Meier survival probability



Months of follow-up	6	12	18	24	30
Cumulative HIV endpoints	37	65	88	97	98
Cumulative women-years	432	833	1143	1305	1341
HIV incidence rates (Tenofovir vs Placebo)	6.0 vs 11.2	5.2 vs 10.5	5.3 vs 10.2	5.6 vs 9.4	5.6 vs 9.1
Effectiveness (p-value)	47% (0.069)	50% (0.007)	47% (0.004)	40% (0.013)	39% (0.017)

WTF?

Despite condoms, counselling ….

Where is the behaviour change????

Partners PrEP: Both PrEP Strategies Significantly Reduce HIV Acquisition

Primary Efficacy Outcome, mITT* Analysis	TDF (n = 1584)	TDF/FTC (n = 1579)	Placebo (n = 1584)
HIV acquisitions, n	18	13	47
HIV incidence/100 PY	0.74	0.53	1.92
Efficacy vs placebo, % (95% CI)	62 (34-78)	73 (49-85)	--
▪ *P* value	.0003	< .0001	--

*mITT analysis includes HIV acquisitions not detected at enrollment.

- No difference in efficacy of TDF vs TDF/FTC in reducing HIV acquisition (*P* = .18)
- Both PrEP strategies associated with significant reduction in HIV transmission vs placebo in both men and women
  - TDF efficacy: 68% in women, 55% in men
  - TDF/FTC efficacy: 62% in women, 83% in men

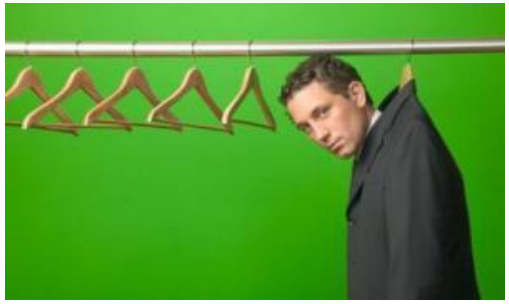
Baeten J, et al. IAS 2011. Abstract MOAX0106.

Partners PrEP: Other Outcomes

- Rates of death, serious adverse events, laboratory events low and not significantly different between arms
  - Mild GI effects primarily during Mo 1
- No significant difference in pregnancy rates between treatment arms
- Reported unprotected sexual behavior decreased on study, with similar decline observed across arms
  - **One third of participants in each arm reported sex outside relationship**

Baeten J, et al. IAS 2011. Abstract MOAX0106.

Lets talk about **closeting**



- “Closeted and in the closet are metaphors used to describe lesbian, gay, bisexual, transgender, queer/questioning and intersex (LGBTQI) people who have not disclosed their sexual orientation or gender identity “ – Wikipedia
- Associated with high risk behaviour – and poorer outcomes (HIV, suicide, substance use)
- Is it beyond gay men?

So, how is prevention going?

- Not great…

GLOBALLY, NEW HIV INFECTIONS HAV PEAKED

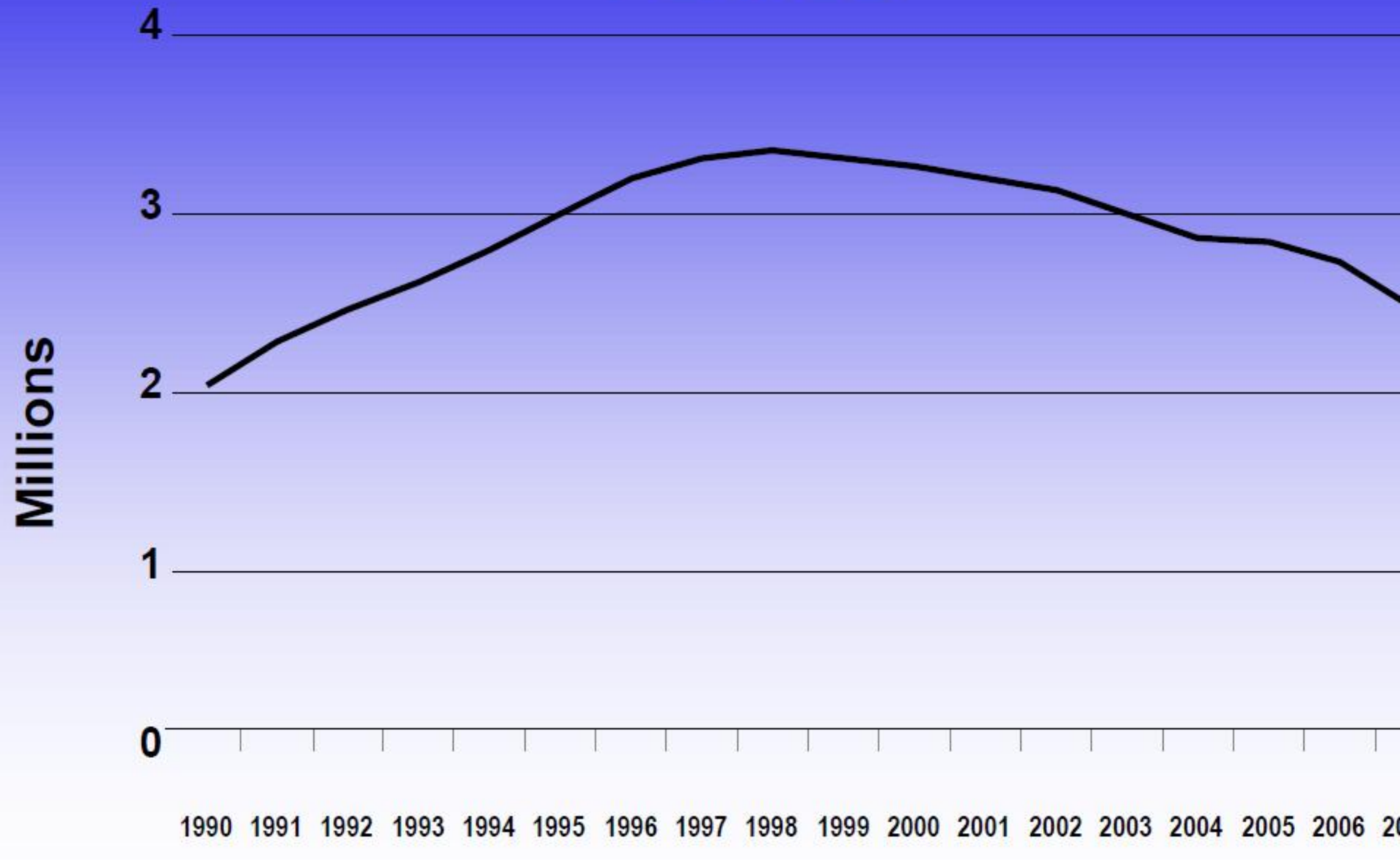
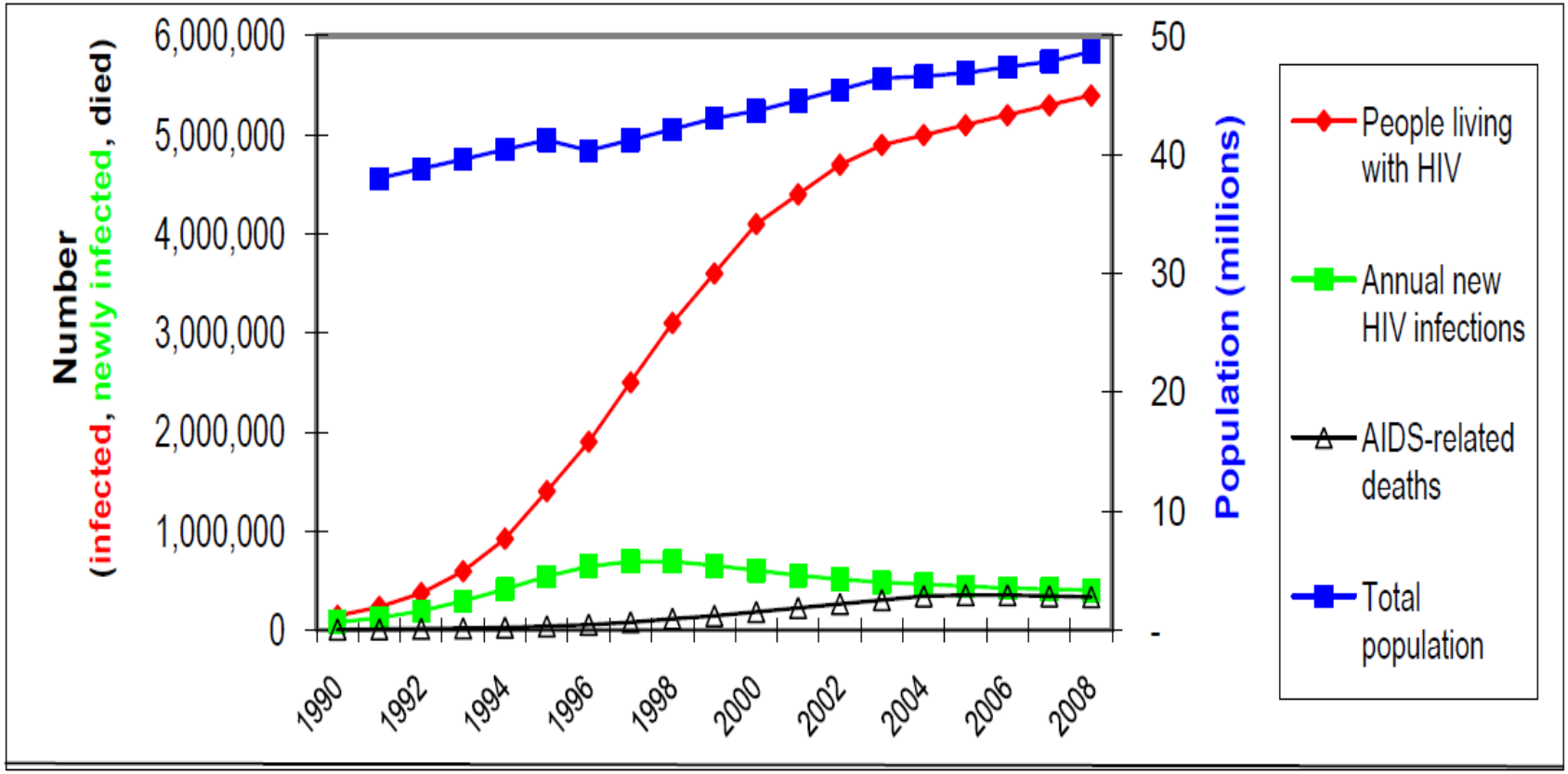


Figure 1. Modelled absolute numbers of PLHIV, annual new infections, AIDS-related deaths and total population, adults aged 15-49 years, South Africa (1990-2008)



Sources: Spectrum estimates and mid-year population estimates from www.statssa.gov.za

[2] The ASSA 2008 model also has revised assumptions about mortality rates in untreated HIV-infected individuals prompted by studies showing higher survival rates in African adults than had previously been assumed (ASSA, 2011).

JOURNAL OF THE ROYAL SOCIETY Interface

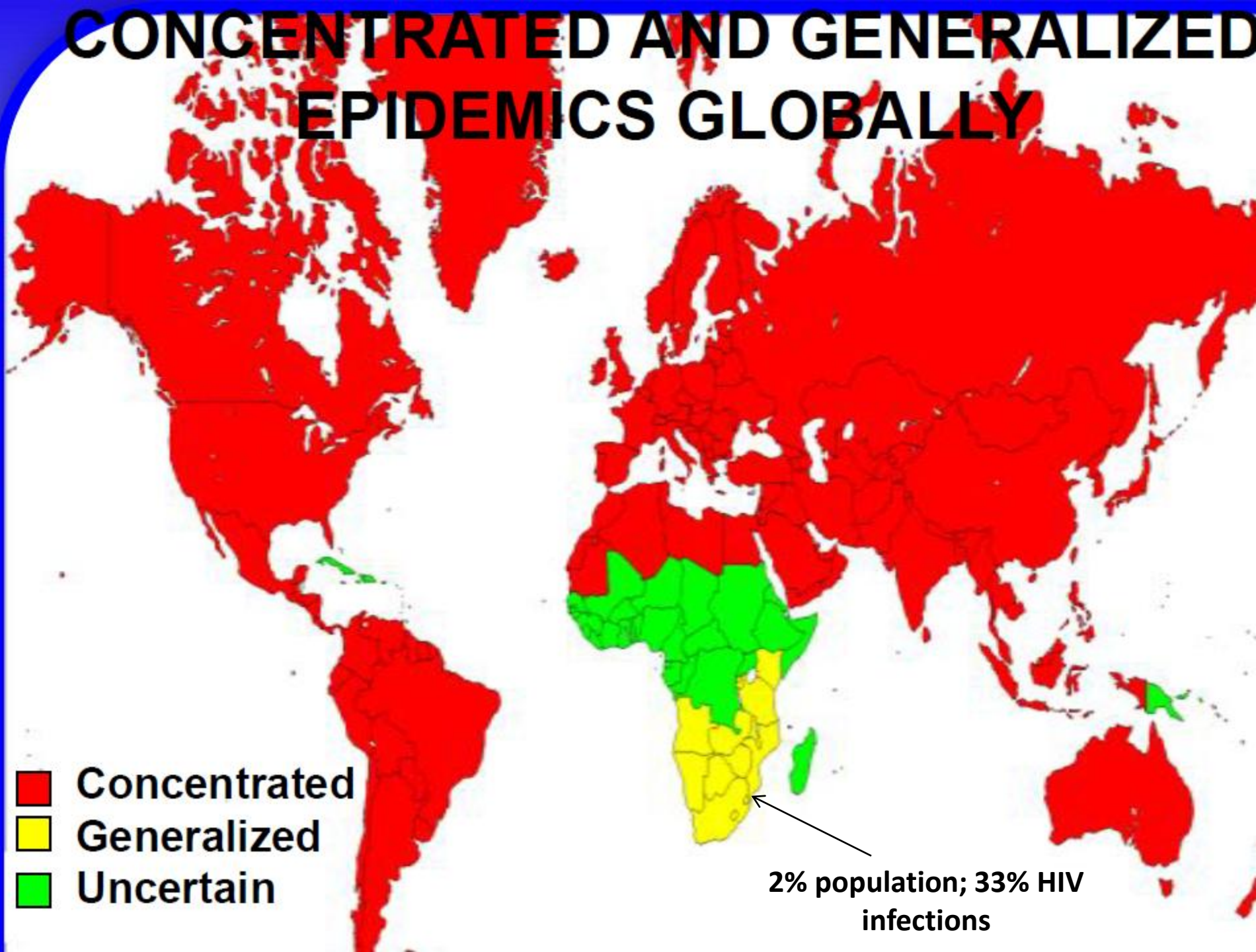
The effect of changes in condom usage and antiretroviral treatment coverage on human immunodeficiency virus incidence in South Africa: a model-based analysis

Leigh F. Johnson, Timothy B. Hallett, Thomas M. Rehle and Rob E. Dorrington

J. R. Soc. Interface published online 18 January 2012
doi: 10.1098/rsif.2011.0826

- "…estimated a small reduction in incidence owing to antiretroviral treatment by 2008. Increased condom use therefore appears to be the most significant factor explaining the recent South African HIV incidence decline."

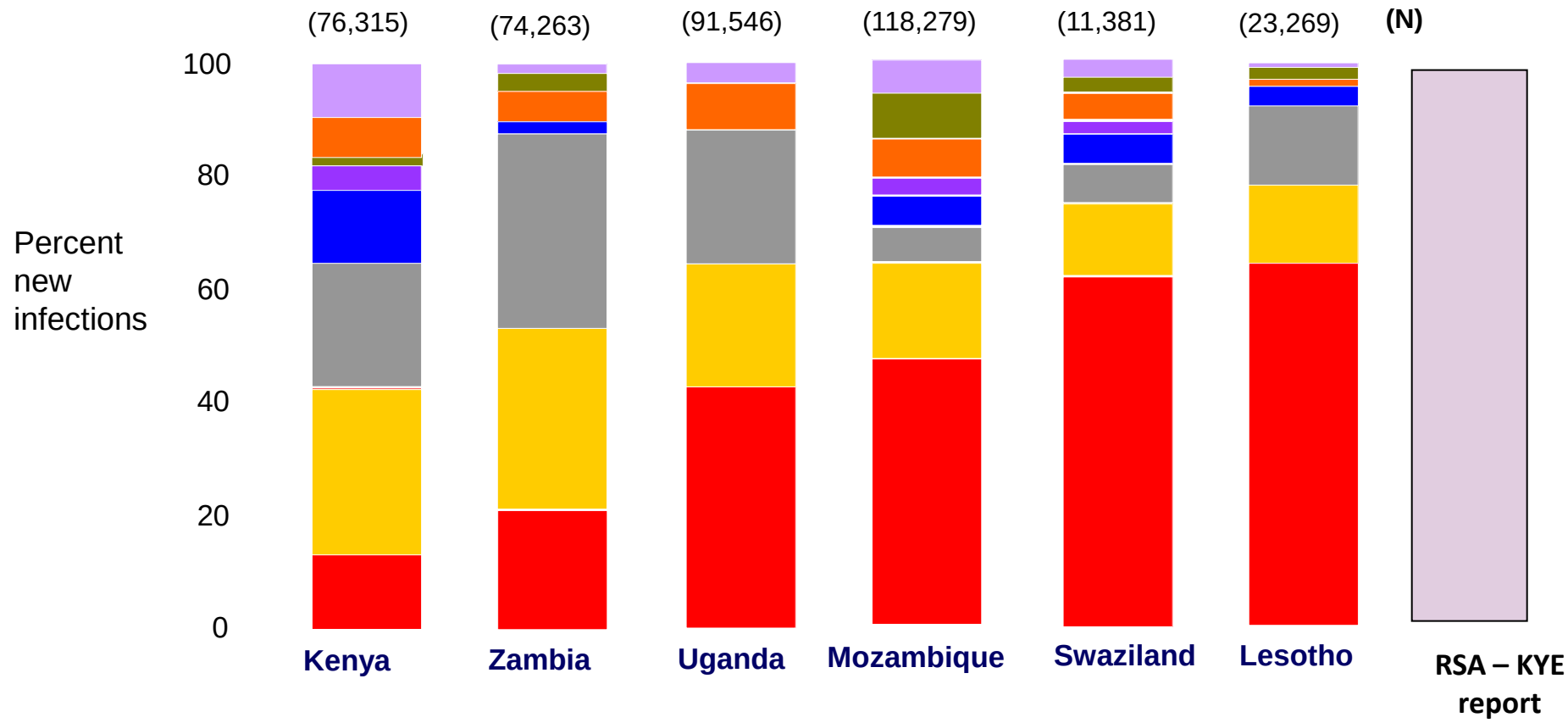
CONCENTRATED AND GENERALIZED EPIDEMICS GLOBALLY



Have we been targeting the Most at risk groups?

Who we are targeting for prevention?	MARP
General population	African females 20-34
In school youth	African males 25- 49
Out of school youth	People with disabilities
Pregnant mothers	People who are high-risk drinkers
Privately insured	Persons who use drugs for recreational purposes
Workplace	Men who have sex with men
	Males 50 years and older

HIV Incidence by modes of transmission



Sources: Draft results from Know your Epidemic project

Buzzword: Behaviour change

- “We can’t afford NOT to do behaviour change”

Behaviour change?…

- Despite 14-fold increase in condom use between 1997 and 2004!
- Education spending in $billions
- What behaviours were tackled? ABCs… ‘be faithful’

Types of relationships

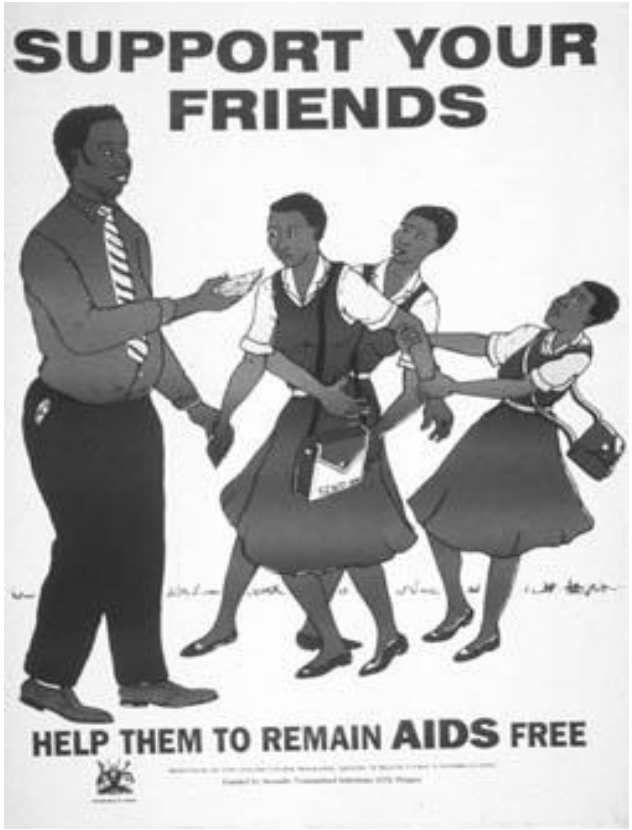
- Age discordance
- Sugar daddies
- Multiple partners
- Concurrency

Older partners

- Older partners associated with increased HIV risk
  (Pettifor, Rees 2005)

BUT: Age difference often < developed countries

- Role of Sugar Daddies?
  Kisumu, Kenya- Survey of 1,052 men (Luke 2002)
  - **… (sugar daddy relationships) accounted for only 4% of partnerships.**



KwaZulu-Natal

Jan 13 2012 9:57AM

Plan to cut sugar daddies short

- “In an effort to create a taboo against cross-generational sex, the KZN department of health has introduced a Sugar Daddy campaign that aims to discourage young women from trading sex for goods and money”

Concurrency and Africa: What's up?

Do multiple concurrent partnerships explain our epidemic?

Francois Venter

Deputy Executive Director, WRHI

(Wits Reproductive Health and HIV Research Institute)

Associate Professor, Department of Medicine

University of the Witwatersrand, Johannesburg, South Africa

May 2011

Thanks to: *Daniel Halperin, David Stanton, Helen Rees, Warren Parker, WHO, for their slides*

“Concurrent partners”

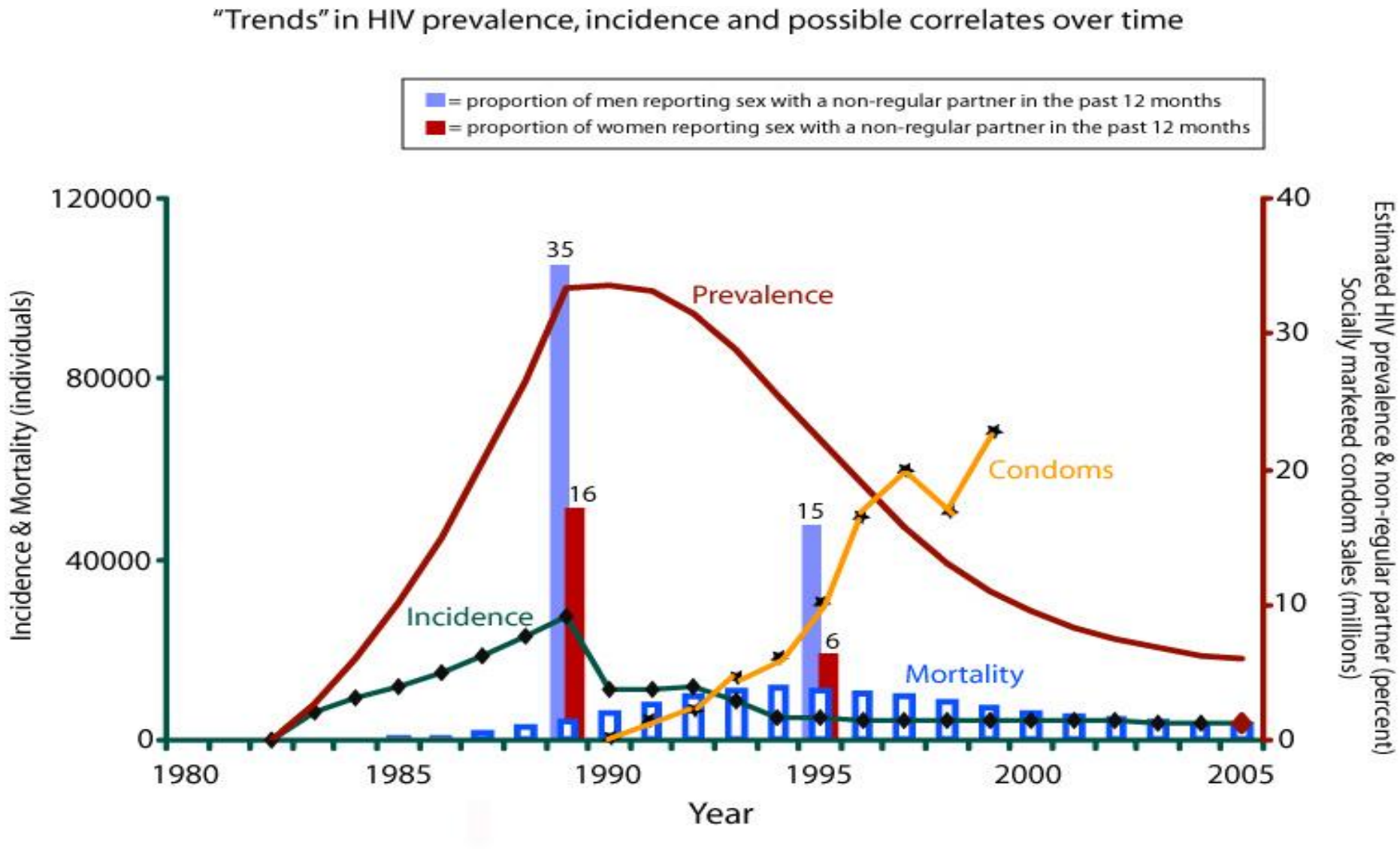
Reassessing HIV Prevention” [in Generalized Epidemics]
Potts M, Halperin D, Kirby D, Swidler A, Klausner J,
Marseille E, Hearst N ,Wamai R, Kahn J, Walsh J.

Science, May 9, 2008

“**The largest investments in HIV prevention** for generalized epidemics are being made into those interventions where evidence for large-scale impact is increasingly uncertain. Resources and attention need to be shifted to those approaches where the evidence of impact is greatest, **namely male circumcision and decreasing multiple concurrent partnerships [and increasing access to FP].”**

And: Halperin D, Potts M, Kirby D, Klausner J, Wamai R, Swidler A, Marseille E, Walsh, J, Hearst N. (Response letter), *Science*, September 19, 2008

Early successes: Uganda and “zero grazing”



Thinking

- People see people dying of a scary wasting illness around them
- They see promiscuous behaviour
- And they change their behaviour
- Less concurrency

But:

- Long lag phase
- Identifying ‘promiscuous people’ difficult – sex hidden
- Does not present uniformly
- Does NOT present as an STD

Sexual network structure and the spread of HIV in Africa: evidence from Likoma Island, Malawi

Stéphane Helleringer and Hans-Peter Kohler

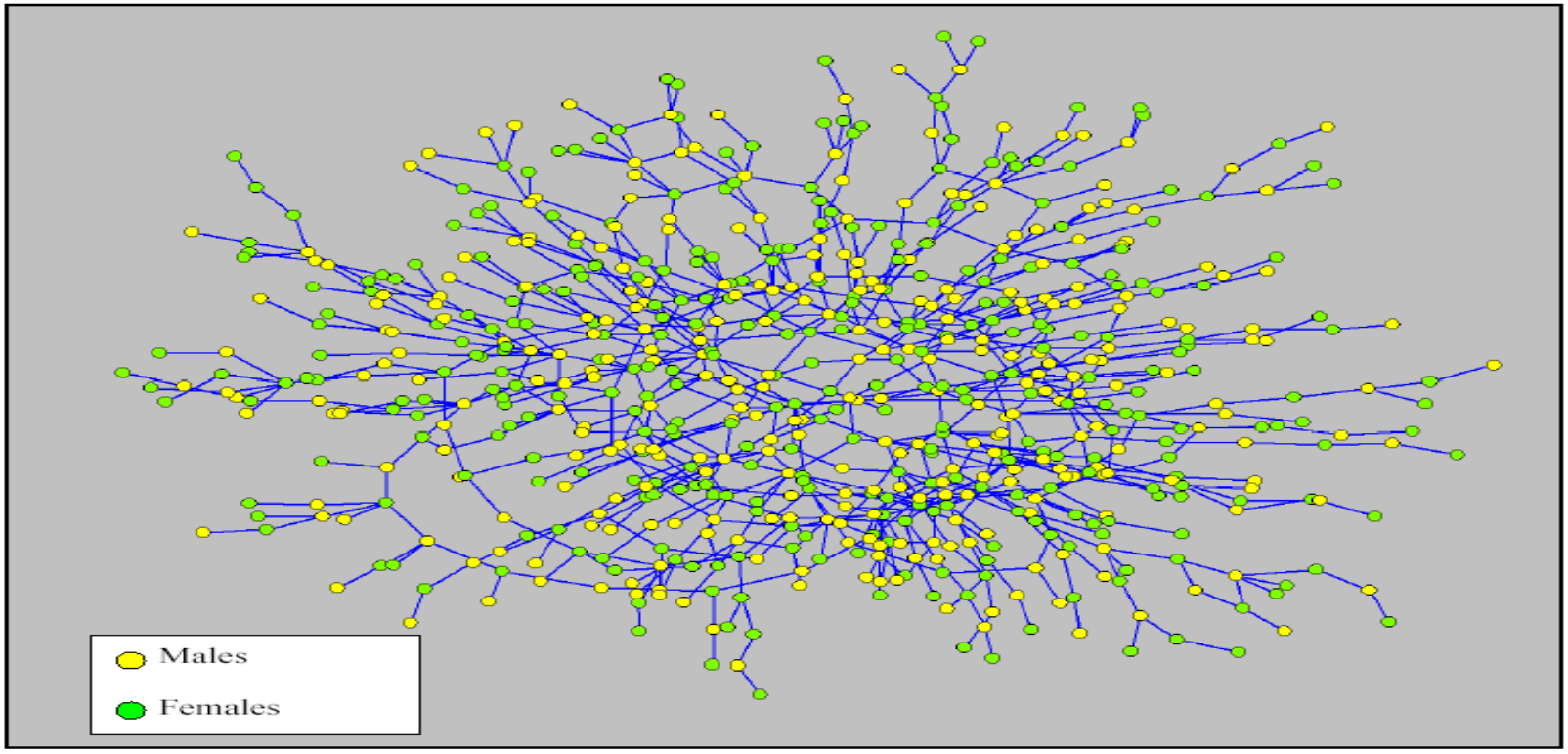
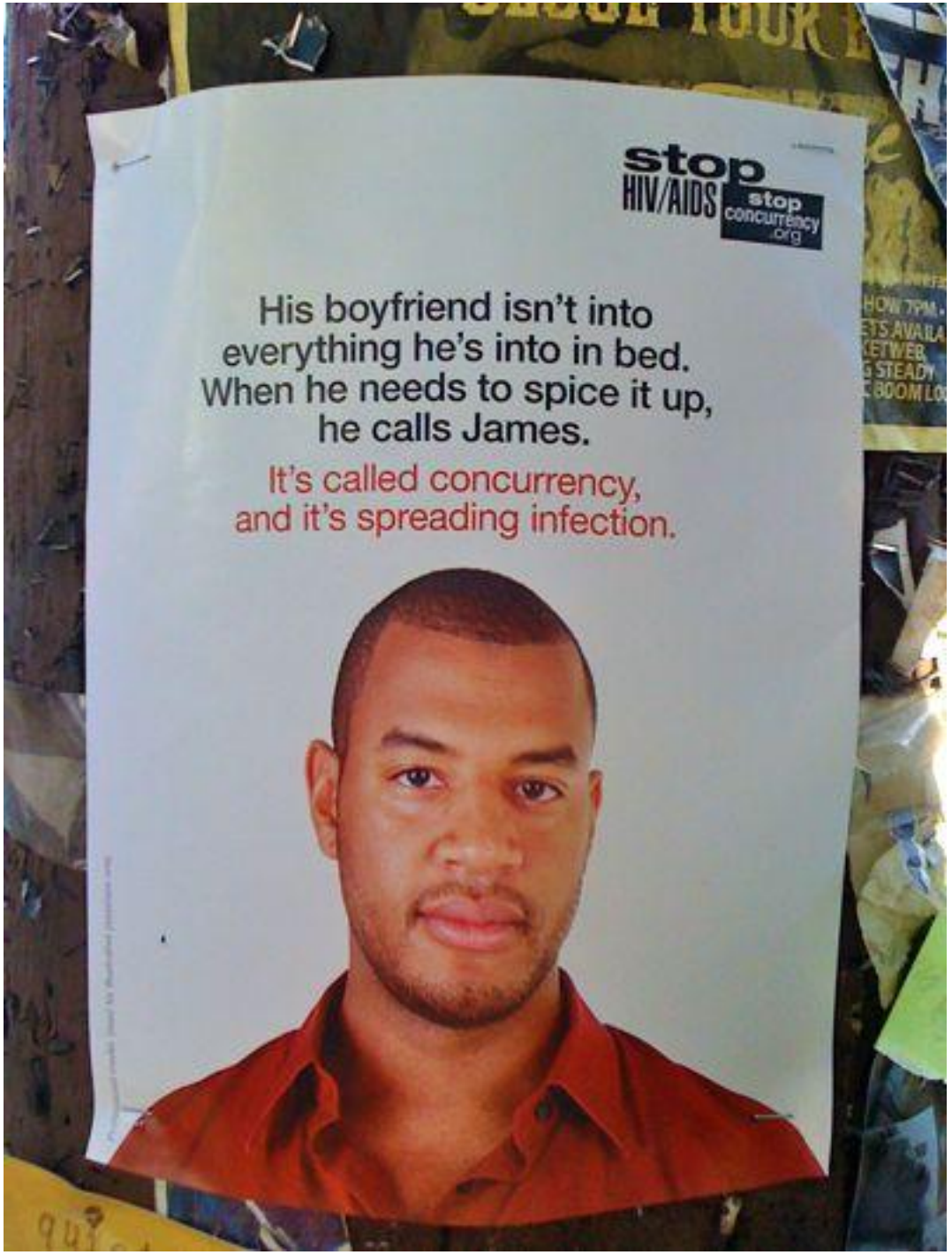


Fig. 5: largest connected component. N = 685. It comprises more than 65% of the population of the 7 villages surveyed.

- 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

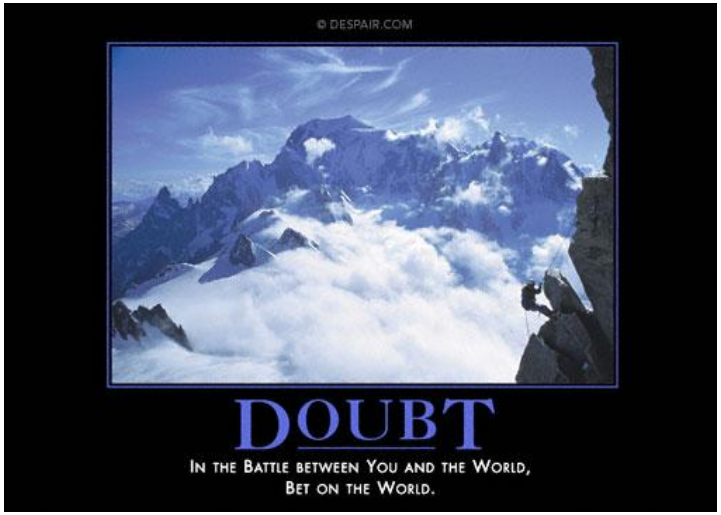
Source: Kohler H and Helleringer S. The Structure of Sexual Networks and the Spread of HIV in Sub-Saharan Africa: Evidence from Likoma Island (Malawi). PARC Working Paper Series: WPS 06-02


DiSCOM
Edgars
Alexander Forbes
I will not share my partner
ngoba...likusasa ngelami
Casual sex is dangerous. HIV Kills.
ClearChannel


stop
HIV/AIDS
stop
concurrency
.org
His boyfriend isn't into
everything he's into in bed.
When he needs to spice it up,
he calls James.
It's called concurrency,
and it's spreading infection.

BUT (but!):

- Question 1: DOES concurrency indeed drive HIV spread?
- Question 2: Does concurrency explain the Sub-Saharan epidemic?
- Question 3: Assuming concurrency IS the driver, can we do anything about it?



- Question 1: DOES concurrency indeed drive HIV spread?
- Plausible

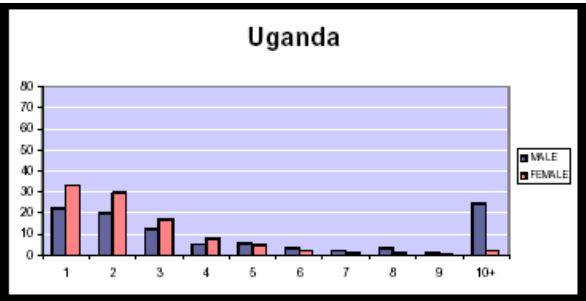
Lifetime number of sexual partners, selected countries, mid-1990s

Pct of men with 10+ partners

Uganda — **18% HIV+**

1994

(*Rakai Sexnet* study)



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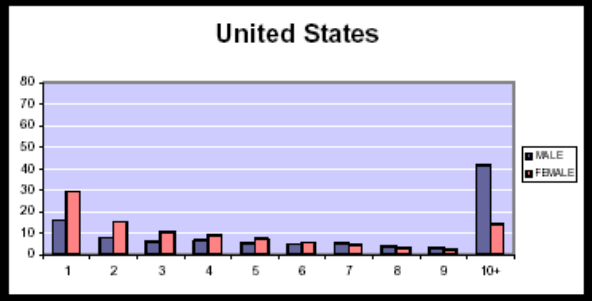
United States — **1% HIV+**

1994

(*NHSLS* study)



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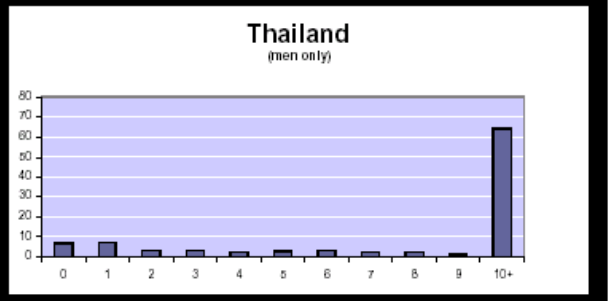
Thailand — **2% HIV+**

1993

(*BRAIDS* study)



>60

UW Network Modeling Project
Martina Morris, PI

NIH Council June 2003

Reported number of sexual partners: comparison of data from four African longitudinal studies

J Todd,[1] I Cremin,[2] N McGrath,[3,4] J-B Bwanika,[5] A Wringe,[3] M Marston,[3] I Kasamba,[1] P Mushati,[6] T Lutalo,[5] V Hosegood,[3] B Żaba[3]

[1] Medical Research Council/ Uganda Virus Research Institute, Uganda Research Unit on AIDS, Entebbe, Uganda; [2] Imperial College London, UK; [3] London School of Hygiene and Tropical Medicine, London, UK; [4] Africa Centre for Health and Population Studies, University of KwaZulu Natal, South Africa; [5] Rakai Health Science Program, Entebbe, Uganda; [6] Biomedical Research and Training Institute, Harare, Zimbabwe

Correspondence to: Dr J Todd, MRC Uganda Research Unit on AIDS, P O Box 49, Entebbe, Uganda; jim.todd@mrcuganda.org

Accepted 19 December 2008

ABSTRACT

Objective: To compare reported numbers of sexual partners in Eastern and Southern Africa.

Methods: Sexual partnership data from four longitudinal population-based surveys (1998–2007) in Zimbabwe, Uganda and South Africa were aggregated and overall proportions reporting more than one lifetime sexual partner calculated. A lexis-style table was used to illustrate the average lifetime sexual partners by site, sex, age group and birth cohort. The male-to-female ratio of mean number of partnerships in the last 12 months was calculated by site and survey. For each single year of age, the proportion sexually active in t number of partners in the past ye with more than one partner in the calculated.

Results: Over 90% of men and w 45 years of age reported being se past 12 months, with most repor partner. Overall, men reported hig sexual partners and partners in the The male-to-female ratio of mean year ranged from 1.41 to 1.86. In cohorts, individuals in later birth c sexual partners and a lower proportion reported multiple partnerships compared with earlier birth cohorts, whereas these behavioural changes were not observed in the Ugandan cohorts. Across the four sites, reports of sexual partnerships followed a similar pattern for each sex.

Conclusions: The longitudinal results show that reductions in the number of partnerships were more evident in southern Africa than in Uganda.

populations would be useful to see if behaviour change is occurring and if the patterns of reported sexual behaviour change are similar in different settings.

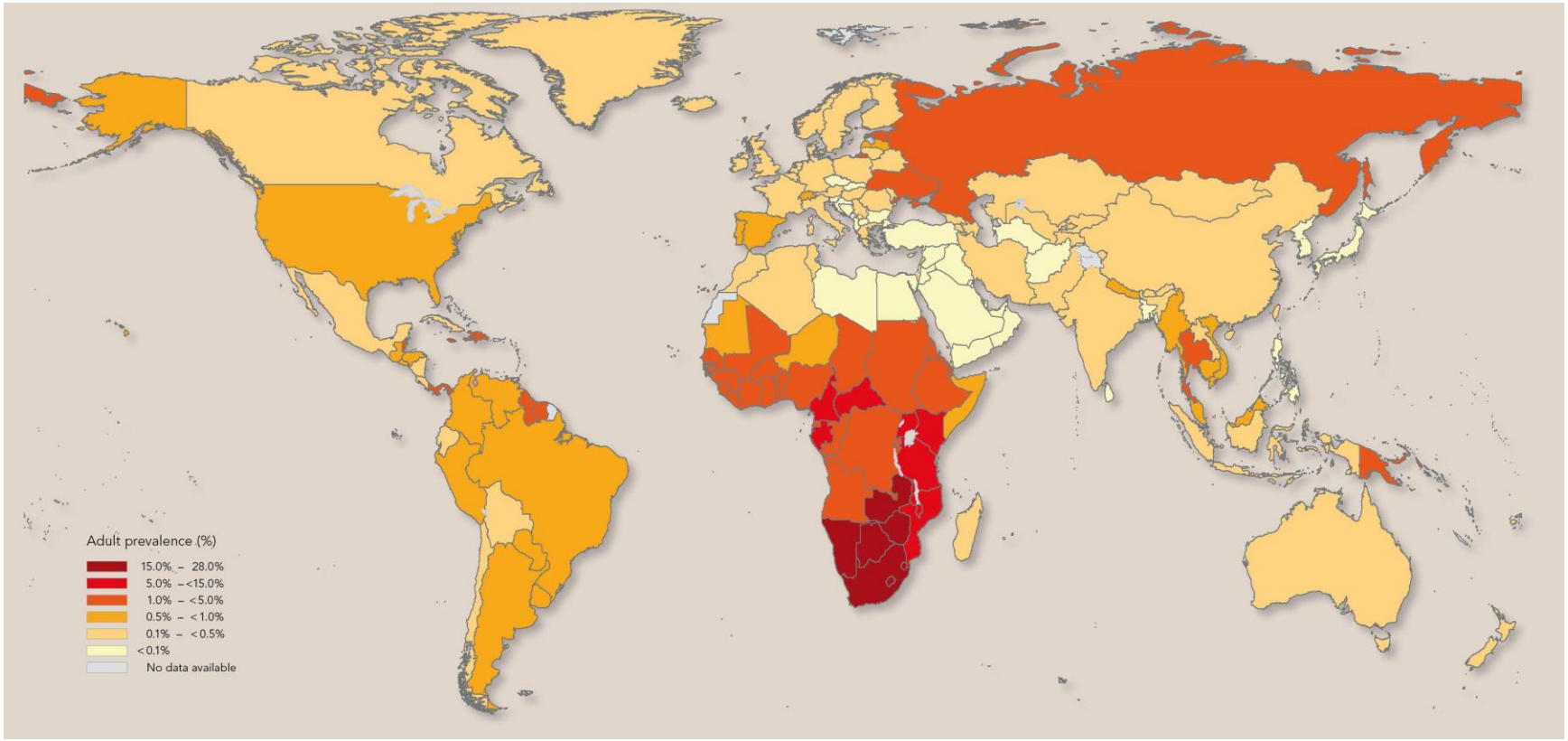
This paper compares reported sexual partnerships over a 10-year period across four sites in Africa, examining differentials by age, gender and site. Using two common definitions—(1) reported number of lifetime sexual partners and (2) reported number of sexual partners in the past 12 months—we can compare patterns of sexual behaviour in these populations across time. Since HIV is

Ugandan cohorts. Across the four sites, reports of sexual partnerships followed a similar pattern for each sex.
Conclusions: The longitudinal results show that reductions in the number of partnerships were more evident in southern Africa than in Uganda.

partners in the past 12 months in several surveys. Different sites asked the questions in a different way and used different selection criteria. However, within each site, data were used where similar questions had been asked in a consistent order across different survey rounds. Questionnaires and protocols are available through the ALPHA network.[8]

In the Masaka cohort in south-western Uganda,

- Question 2: Does concurrency explain the Sub-Saharan epidemic?



- Subtext: Is African sexual behaviour different?

DEMOGRAPHIC RESEARCH

VOLUME 21, ARTICLE 11, PAGES 289-340
PUBLISHED 10 SEPTEMBER 2009
http://www.demographic-research.org/Volumes/Vol21/11/
DOI: 10.4054/DemRes.2009.21.11

Research Article

Sexual behaviour patterns in South Africa and their association with the spread of HIV: Insights from a mathematical model

Leigh F. Johnson

Rob E. Dorrington

Debbie Bradshaw

Victoria Pillay-Van Wyk

Thomas M. Rehle

- "…A mathematical model "
- "Results suggest that concurrent partnerships and other non-spousal partnerships are major drivers of the HIV/AIDS epidemic in South Africa. "

AIDS Behav (2010) 14:17–24
DOI 10.1007/s10461-009-9583-5

COMMENTARY

Concurrent Partnerships as a Driver of the HIV Epidemic in Sub-Saharan Africa? The Evidence is Limited

Mark N. Lurie · Samantha Rosenthal

AIDS Behav (2010) 14:34–37
DOI 10.1007/s10461-009-9640-0

RESPONSE

The Concurrency Hypothesis in Sub-Saharan Africa: Convincing Empirical Evidence is Still Lacking. Response to Mah and Halperin, Epstein, and Morris

Mark N. Lurie · Samantha Rosenthal

Concurrent sexual partnerships do not explain the HIV epidemics in Africa: a systematic review of the evidence

Larry Sawers[1§], Eileen Stillwaggon[2]

Journal of the International AIDS Society 2010, **13**:34 doi:10.1186/1758-2652-13-34

Epstein and Morris *Journal of the International AIDS Society* 2011, **14**:13
http://www.jiasociety.org/content/14/1/13

JOURNAL OF THE INTERNATIONAL AIDS SOCIETY

COMMENTARY Open Access

Concurrent partnerships and HIV: an inconvenient truth

Helen Epstein[1*], Martina Morris[2]

Abstract

The strength of the evidence linking concurrency to HIV epidemic severity in southern and eastern Africa led the Joint United Nations Programme on HIV/AIDS and the Southern African Development Community in 2006 to conclude that high rates of concurrent sexual partnerships, combined with low rates of male circumcision and

Effect of concurrent sexual partnerships on rate of new HIV infections in a high-prevalence, rural South African population: a cohort study

Frank Tanser, Till Bärnighausen, Lauren Hund, Geoffrey P Garnett, Nuala McGrath, Marie-Louise Newell

Summary

Background Concurrent sexual partnerships are widely believed to be one of the main drivers of the HIV epidemic in sub-Saharan Africa. This view is supported by theoretical models predicting that increases in prevalence of concurrent partnerships could substantially increase the rate of spread of the disease. However, the effect of concurrent partnerships on HIV incidence has not been appropriately tested in a sub-Saharan African setting

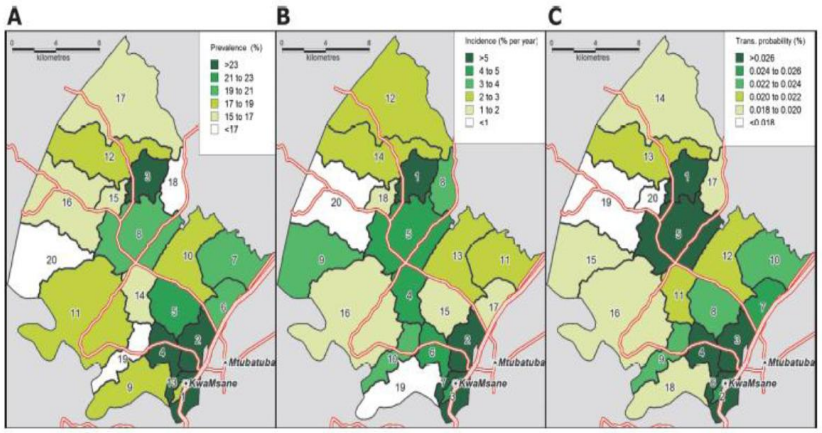
Methods For this population-based cohort study, in KwaZulu-Natal, South Africa, to try to find su

Lancet 2011; 378: 247–55

See Comment page 203

Africa Centre for Health and Population Studies, University

Figure 3. Community ranking according to HIV prevalence (A), HIV incidence (B) and transmission probability (C), Hlabisa sub-district, South Africa (2010)



Source: Barnighausen et al. (2010)

The Lancet, Volume 378, Issue 9787, Pages 247 - 255, 16 July 2011

KZN and the Africa Center

- Followed HIV negative women over 5 years
- **"With respect to reported lifetime partners, a clear exposure-response relation was evident"**
- "We find **no evidence** to suggest that concurrent partnerships are an important driver of HIV incidence in this typical high-prevalence rural African population. … need for straightforward, unambiguous messages aimed at the reduction of multiple partnerships……"

The Lancet, Volume 378, Issue 9787, Pages 247 - 255, 16 July 2011

J Acquir Immune Defic Syndr. 2012 Jan 1;59(1):65-71.

Outside sexual partnerships and risk of HIV acquisition for HIV uninfected partners in African HIV serodiscordant partnerships.

Ndase P, Celum C, Thomas K, Donnell D, Fife KH, Bukusi E, Delany-Moretlwe S, Baeten JM; Partners in Prevention HSVHIV Transmission Study Team.

- "A <5% reported sex with the infected partner and an outside partner in the same month"
- "HIV incidence was similar (2.87 vs. 3.02, p=0.7)"

Question 3: Assuming concurrency IS the driver, can we do anything about it?

AIDS Behav
DOI 10.1007/s10461-011-9922-1

ORIGINAL PAPER

Evaluation of a Peer Network-Based Sexual Risk Reduction Intervention for Men in Beer Halls in Zimbabwe: Results from a Randomized Controlled Trial

Katherine Fritz · Willi McFarland · Robert Wyrod · Charles Chasakara · Knox Makumbe · Admire Chirowodza · Chamunorwa Mashoko · Timothy Kellogg · Godfrey Woelk

"Beer halls are venues in which male bonding, alcohol consumption and sexual risk taking are intertwined."

"**we found no evidence of an impact** of the intervention on our primary outcome measure: episodes of unprotected sex with non-wife partners in the preceding 6 months (median 5.4 episodes for men at intervention beer halls vs. 5.1 among controls, P = 0.98). There was also no evidence that the intervention reduced other risks for HIV."

"The findings suggest that **the peer education program was not effective** in reducing the age of sexual debut or condom use. Issues around the implementation of the program suggested that this was sub-optimal."

Can Peer Education Make a Difference? Evaluation of a South African Adolescent Peer Education Program to Promote Sexual and Reproductive Health

Amanda J. Mason-Jones, Catherine Mathews and Alan J. Flisher

AIDS and Behavior
Volume 15, Number 8, 1605-1611, DOI: 10.1007/s10461-011-0012-1 , August 2011

“My skepticism lies whether counseling interventions can change human behavior. Marketing can. Chaos, crisis, death, information can but I've not be convinced by 1:1 or group-level interventions with cute names.” – Dr Jeff Klausner, ex-CDC SA

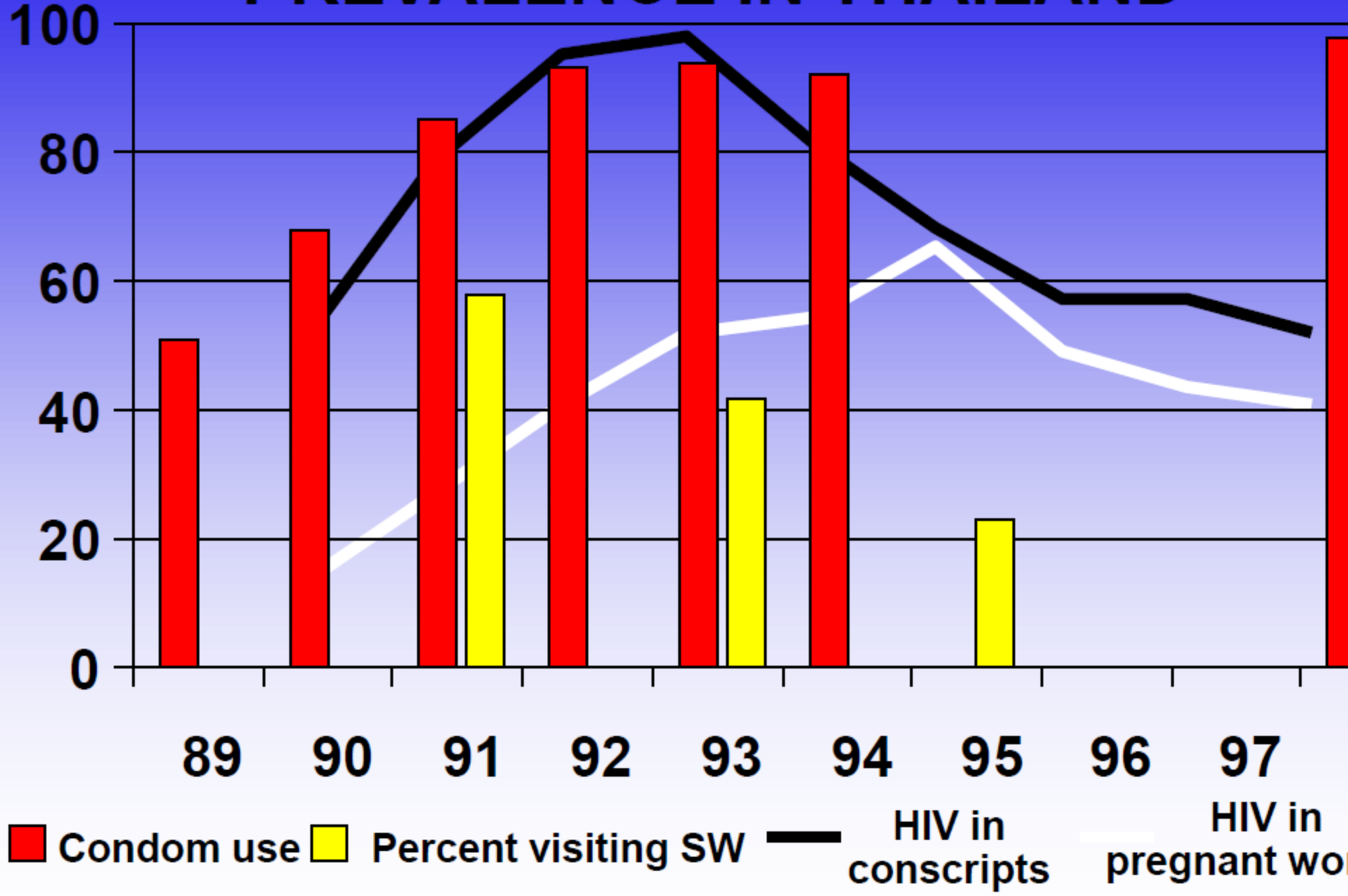
And what if we're wrong about concurrency ?

- Intrusive, expensive, anxiety provoking
- Does NOT convincingly explain the SSA epidemic
- Need better quality data to make policy decisions

What about sex work?

- Illegal in SA, high levels of police harassment
- Challenge the two extremes views of sex work
- We ‘closet’ sex workers

BEHAVIOR CHANGE AND DECLINING H PREVALENCE IN THAILAND



Effective sex worker programmes?

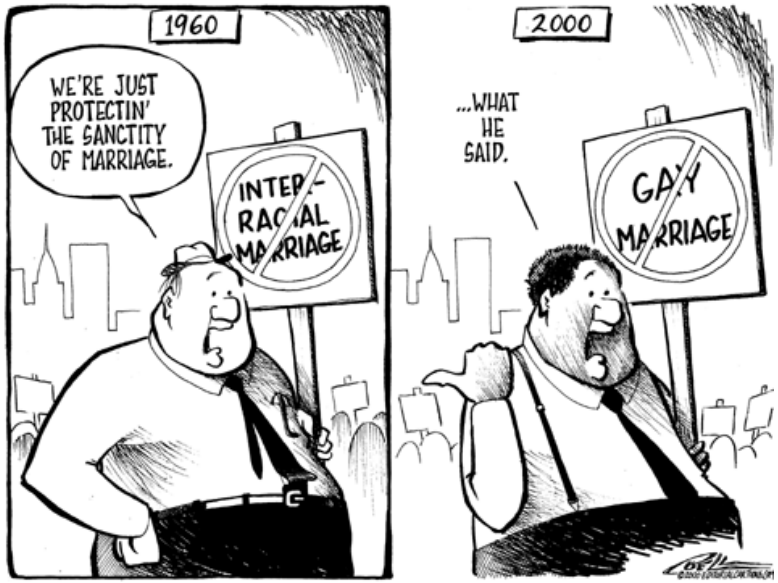
- Education – often by peers
- Condoms and sexual health services
- HIV testing and counselling
- Supportive legal environment

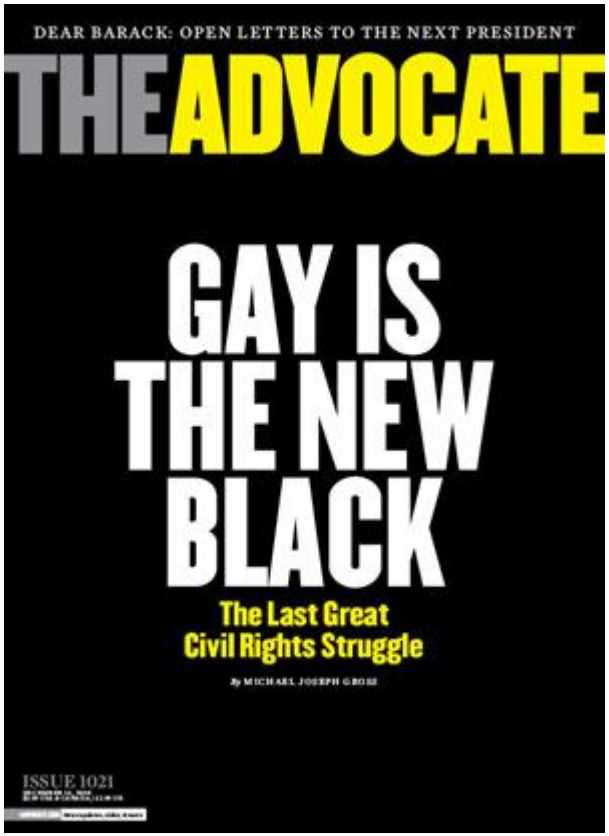
What about the clients?

- Tijuana – sex work demographic
- Clients ‘closeted’

What about the gays?

- Men-who-have sex with men; the ‘down low’
- Transgenders
- “Silent” in Africa



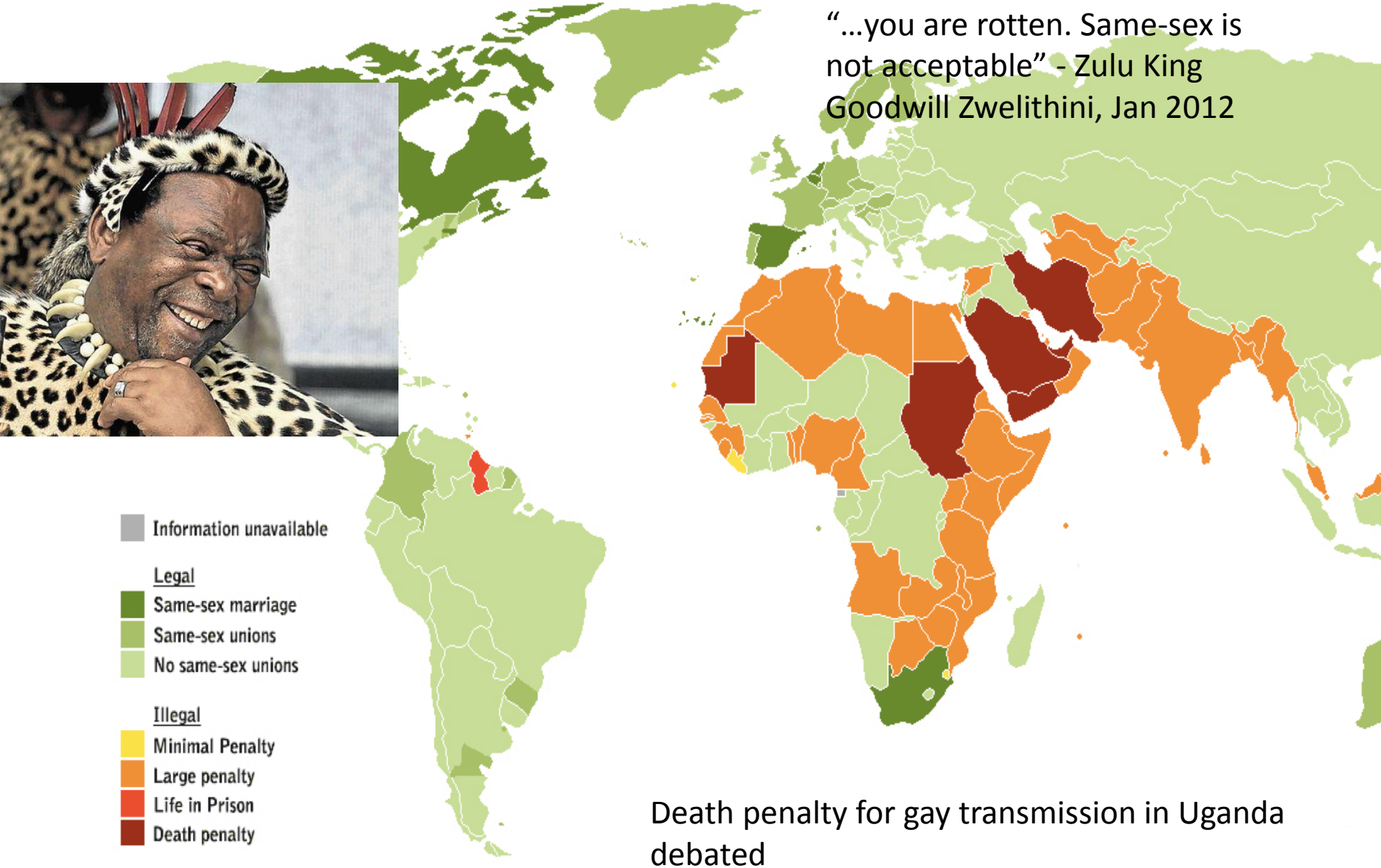


HIV ODDS RATIOS FOR MSM

REGION	COUNTRIES	OR	CI
Americas	15	33.3	32.3-34.2
Asia	7	18.7	17.7-19.7
Africa	4	3.8	3.3-4.3

"Sex between men is responsible for more than a quarter of new HIV infections in parts of the Middle East and North Africa" - Mumtaz G, Hilmi N, McFarland W, Kaplan RL, Akala FA, et al. (2011) Are HIV Epidemics among Men Who Have Sex with Men Emerging in the Middle East and North Africa?: A Systematic Review and Data Synthesis. PLoS Med 8(8): e1000444.

"…you are rotten. Same-sex is not acceptable" - Zulu King Goodwill Zwelithini, Jan 2012



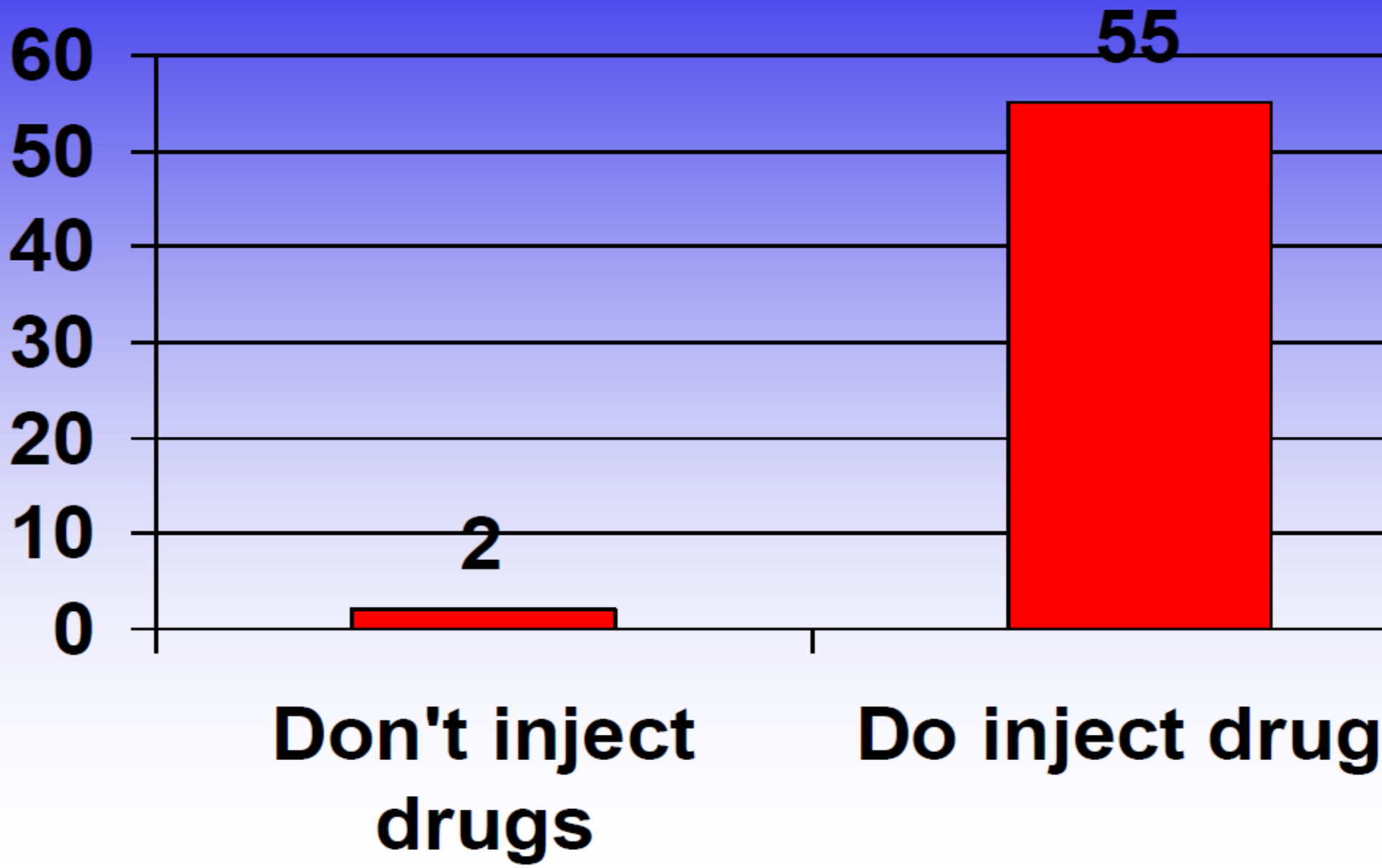
Death penalty for gay transmission in Uganda debated

Africa drives closeting! And it affects HIV control

Drug use?

- Needle exchange works
- Few successes internationally – Netherlands, Canada…

HIV PREVALENCE AMONG SW IN HAIPHONG, VIETNAM



Drug use in SA?

- Intravenous use uncommon
- Other drugs vary
- Conventional debate: Hysteria and legislation

But!

- Its not sex workers, MSM or drug users who drive the majority SA epidemic

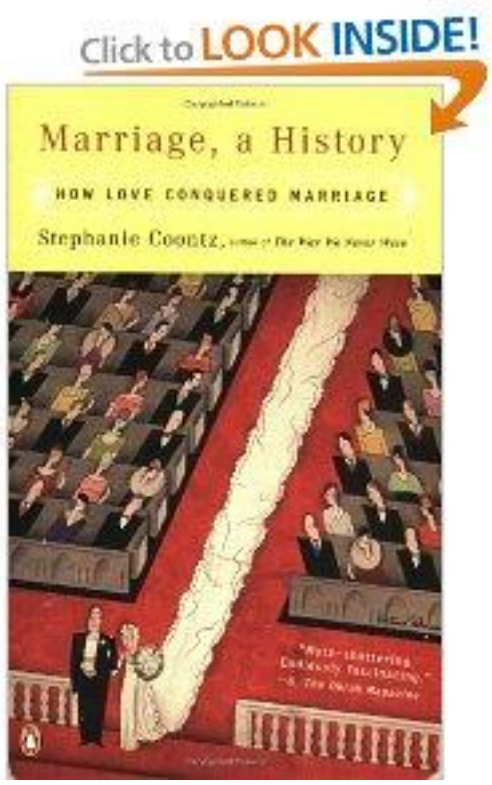
Stop screwing around!

- “men have multiple partners”
- US: Up to 80% of one or both partners cheat in a stable relationship
- KZN: 1/3 men cheated over 5 years
- Shisana/HSRC: Married women higher risk than married men

Paternity testing….

Marriage protective?

- Data varies – married women high risk in some; marriage protective in others
- Tiger Woods, Bill Clinton, Angelina Jolie, Jacob Zuma, King Mwswati, Elizabeth Tailor…
- Hypocrisy of the American right (and left)



What about marriage? And lobola?

- Late marriage increases the likelihood of exposure to high life-time number of sexual partners, and concurrency

Demographic characteristics (n=7006)	15-19	20-30	31-39	40-49	50-65
Marital Status					
Unmarried	98.5	82.4	49.2	34.7	37.7
Cohabiting with boyfriend/girlfriend	1.1	7.2	11.2	8.2	2.9
Married	0.4	10.4	39.7	57.2	59.4

- Very low marriage rates in 20-30, very little cohabitation, low overall likelihood of marriage

Source: dervied from Parker, W. presentation given 11 Dec. 2007; **Setting a New Agenda for HIV Prevention;** Johannesburg, SA.

Sex changes rapidly!

- Oral sex internationally - Journal of Sexual Medicine 2010: By ages 25-29, 8/9 women have performed fellatio, ½ done it in the past month. For men and cunnilingus, the numbers only slightly lower.
- Anal sex in the US
- CDC 2007: 38.2 % of men between 20 and 39; 32.6 percent of women ages 18 to 44 engage in heterosexual anal sex.
- Journal of Sexual Medicine 2010: In 1992, the highest percentage of women in any age group who admitted to anal sex was 33. In 2002, it was 35. **Now it's 46%.**
- Among women who had vaginal sex in their last encounter, the percentage who said they reached orgasm was 65. Among those who received oral sex, it was 81. But among those who had anal sex, it was 94. **Anal sex outscored cunnilingus.**

"Don't worry, it only seems kinky the first time." ~Author Unknown

HIV and anal sex in SA

Heterosexual anal intercourse increases risk of HIV infection among young South African men

Tim Lane[a], Audrey Pettifor[b], Sophie Pascoe[c], Agnes Fiamma[d] and Helen Rees[e]

Data from a nationally representative household survey of South African youth aged 15–24 years found that sexually active men reporting anal intercourse were nearly twice as likely to be HIV infected as men reporting only vaginal sex (OR 1.7, 95% CI 1.0–3.0). The associated risk was more pronounced among men aged 15–19 years (OR 4.3, 95% CI 1.5–12.1). The association among women was not significant (OR 1.2, 95% CI 0.7–2.0).

The association between heterosexual anal intercourse and HIV infection is not well studied, despite the

The prevalence of anal intercourse in this sample was 3.6% among both men and women. Sexually experienced youth accounted for 67% of the entire sample. Among sexually experienced youth, 5.5% of men and 5.3% of women reported ever engaging in anal intercourse. Only 0.06% of men reported other men as sexual partners; we therefore presume that we are describing heterosexual

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AIDS, 2006

Networking and the internet

- Porn and the internet
- Allowed for rapid connections within small communities
- Facebook and MSM in Africa
- Grindr
- ?porn link to LESS sexual violence

Behaviours change rapidly…

- **Mark Hunter** notes fundamental changes in late apartheid/post apartheid SA
- rising unemployment and social inequalities esp for poor women
- greatly reduced marital rates, increase of one person households
- rising levels of women's migration, especially circular movements between rural areas and areas.

ELSEVIER

Social Science & Medicine 64 (2007) 689–700

SOCIAL SCIENCE & MEDICINE

www.elsevier.com/locate/socscimed

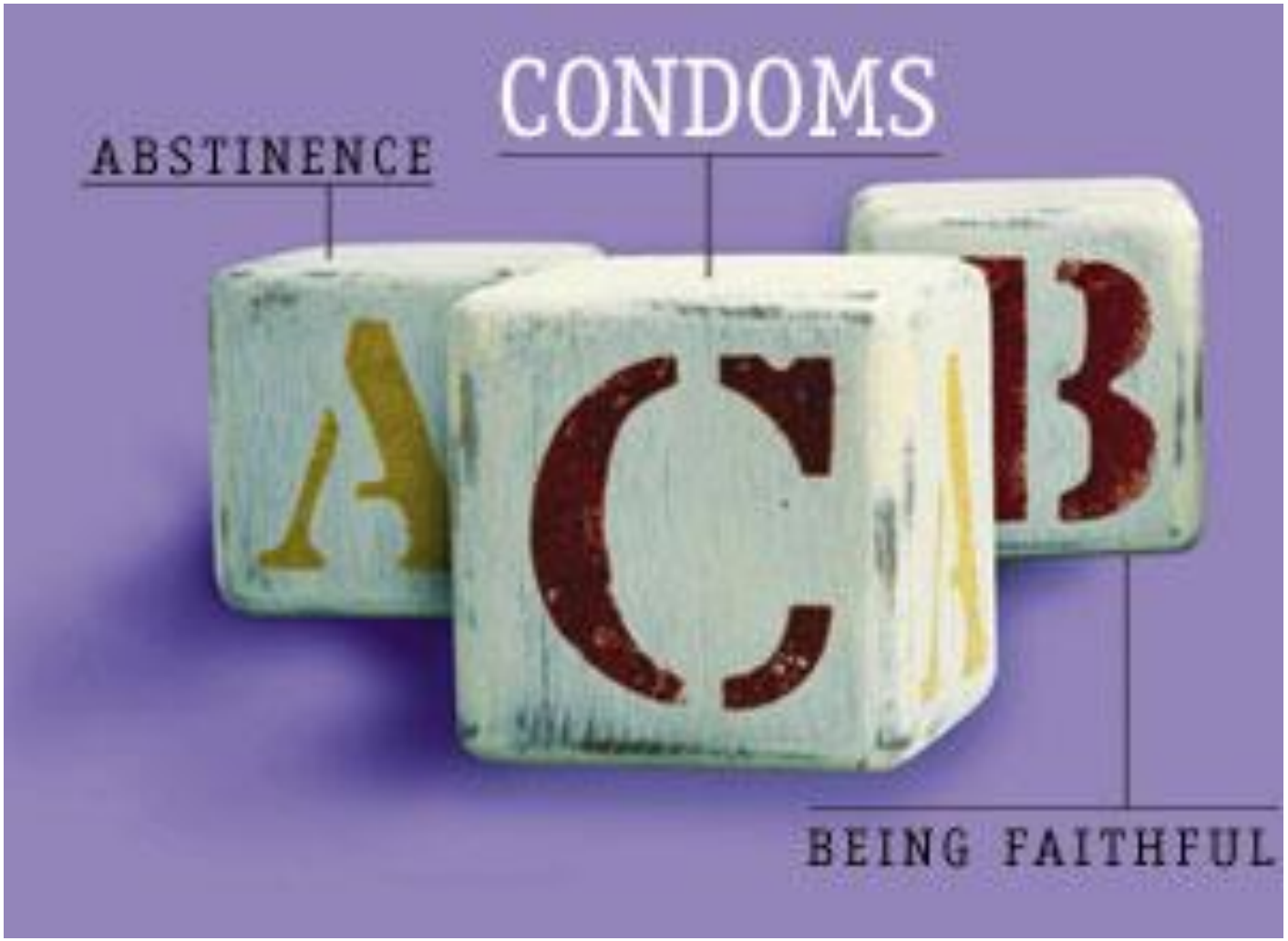
The changing political economy of sex in South Africa: The significance of unemployment and inequalities to the scale of the AIDS pandemic

Mark Hunter*

Department of Social Sciences/Geography, University of Toronto at Scarborough, 1265 Military Trail, Toronto, Ont., Canada M1C 1A4

Available online 9 November 2006

What if the biological transmission risk is SO high, that ABC doesn't work?



ELSEVIER

JOURNAL OF ADOLESCENT HEALTH

www.jahonline.org

Original Article

A Tale of Two Countries: Rethinking Sexual Risk for HIV Among Young People in South Africa and the United States

Audrey E. Pettifor, Ph.D., M.P.H.[a,b,*], Brooke A. Levandowski, Ph.D.[a], Catherine Macphail, Ph.D.[b], William C. Miller, M.D., Ph.D.[a,c], Joyce Tabor, M.S.[d], Carol Ford, M.D.[e], Cheryl R. Stein, Ph.D.[f], Helen Rees, M.D.[b], and Myron Cohen, M.D.[a,c]

[a] Department of Epidemiology, University of North Carolina, Chapel Hill, North Carolina
[b] Reproductive Health and HIV Research Unit, University of the Witwatersrand, Johannesburg, South Africa
[c] Division of Infectious Diseases, School of Medicine, University of North Carolina, Chapel Hill, North Carolina
[d] Carolina Population Center, University of North Carolina, Chapel Hill, North Carolina
[e] Division of General Pediatrics and Adolescent Medicine, Department of Pediatrics, School of Medicine, University of North Carolina, Chapel Hill, North Carolina
[f] Department of Preventive Medicine, Mount Sinai School of Medicine, New York, New York

Article history: Received February 26, 2010; Accepted October 10, 2010
Keywords: Adolescents; Sexual behaviour; HIV; South Africa; United States

- "…Young people in the US report riskier sexual behaviors than young people in SA, despite the much higher prevalence of HIV infection in SA. Factors above and beyond sexual behavior likely play a key role in the ongoing transmission of HIV in South African youth,"

Table 1
Weighted proportions and means of sexual behavior characteristics of South African and US young women and men, aged 18–24

Characteristic	Young women			Young men		
	South Africa (n = 3,951)	United States (n = 7,166)	*t* test *p* value	South Africa (n = 3,597)	United States (n = 6,285)	*t* test *p* value
Ever had vaginal sex % (95% CI)	84.4 (82.3–86.4)	87.9 (86.6–89.2)	<.001	81.9 (79.2–84.6)	86.0 (84.6–87.5)	<.001
Age at coital debut mean (range)	17.4 (7–24)	16.3 (10–24)	<.001	16.7 (7–24)	16.4 (10–24)	.04
Condom use at last sexual act % (95% CI)	45.4 (42.2–48.6)	36.1 (34.0–38.1)	<.001	58.0 (51.7–64.3)	48.0 (45.6–50.4)	<.001
Number of lifetime sexual partners mean (range)	2.4 (1–90)	5.7 (1–50)	<.001	5.2 (1–80)	7.1 (1–50)	<.001
Age difference with last sexual partner mean (range)	4.0 (−3 to 37)	2.6 (−6 to 31)	<.001	−1.6 (−9 to 21)	−.2 (−11 to 31)	<.001

“

Journal of Adolescent Health 49 (2011) 227–229

ELSEVIER

JOURNAL OF ADOLESCENT HEALTH

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Editorial

The Wrong Place at the Wrong Time: Geographic Disparities in Young People's HIV Risk

Heather Jaspan, M.D., Ph.D.
Seattle Biomedical Research Institute
Seattle, Washington
Division of Immunology
Institute of Infectious Diseases and Molecular Medicine
University of Cape Town
Cape Town, South Africa

“There is a state of emergency among teenage girls in Southern Africa. Behavioral change campaigns have failed to demonstrate an effect on HIV incidence in heterosexual adolescents and will not likely have a large impact on adolescents in whom risky behaviors are not the primary problem.”

“This comparison of two nationally representative surveys of young people starkly underscores that behaviour is not the sole determinant of HIV risk.” Cait Hankins, UNAIDS

Immune activation is a dominant factor in the pathogenesis of African AIDS

Bentwich Z, Kalinkovich A, Weisman Z (1995)

First paper to show immune susceptibility in African AIDS

Human genes in HIV infection

Data from HIV natural history cohorts, candidate gene analyses & genome-wide studies have identified genes involved in HIV susceptibility :

1. innate & adaptive immunity (HLAs)
2. HIV dependency factors (CCR5)
3. intrinsic anti-virus factors (APOBEC)

Thanks to: Samantha Barichievy , CSIR

Biological risks…

Hum Genet (2008) 123:557–598
DOI 10.1007/s00439-008-0511-y

REVIEW

Genetic studies of African populations: an overview on disease susceptibility and response to vaccines and therapeutics

Giorgio Sirugo · Branwen J. Hennig · Adebowale A. Adeyemo · Alice Matimba · Melanie J. Newport · Muntaser E. Ibrahim · Kelli K. Ryckman · Alessandra Tacconelli · Renato Mariani-Costantini · Giuseppe Novelli · Himla Soodyall · Charles N. Rotimi · Raj S. Ramesar · Sarah A. Tishkoff · Scott M. Williams

REVIEW ARTICLE

Biological Factors that May Contribute to Regional and Racial Disparities in HIV Prevalence

Rupert Kaul[1,2], Craig R. Cohen[3,4], Duncan Chege[1], Tae J. Yi[1], Wangari Tharao[5], Lyle R. McKinnon[1,2], Robert Remis[6], Omu Anzala[2,7], Joshua Kimani[2,8]

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[2]Department of Medical Microbiology, University of Nairobi, Nairobi, Kenya;
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American Journal of Reproductive Immunology 65 (2011) 317–324

"Considering biological causes for these racial disparities may help to destigmatize the issue and lead to new and more effective strategies for prevention.

Biological risks...

Tissue Antigens ISSN 0001-

REVIEW ARTICLE

Genetic determinants of HIV-1 infection and progression to AIDS: immune response genes

G. Kaur & N. Mehra

Department of Transplant Immunology and Immunogenetics, All India Institute of Medical Sciences, Ansari Nagar, New Delhi, India

Review

Host genes associated with HIV/AIDS: advances in gene discovery

Ping An and Cheryl A. Winkler

Laboratory of Genomic Diversity, SAIC-Frederick, Inc., National Cancer Institute at Fr

THE JOURNAL OF IMMUNOLOGY

Proteases in MHC Class I Presentation and Cross-Presentation

Kenneth L. Rock, Diego J. Farfán-Arribas and Lianjun Shen

J Immunol 2010;184:9-15
doi:10.4049/jimmunol.0903399
http://www.jimmunol.org/content/184/1/9

Tissue Antigens ISSN 0001-2815

REVIEW ARTICLE

Genetic determinants of HIV-1 infection and progression to AIDS: immune response genes

G. Kaur & N. Mehra

Department of Tra ty

Antivir Ther. 2009 ; 14(6): 731–738. doi:10.3851/IMP1253.

Host genome influences on HIV-1 disease

Jacques Fellay
Center for Human Genome Variation Institute for Genome Sciences & Policy Duke University

Abstract

HIV host genetics seeks to describe as comprehensively as possible the impact of human genetic variation on the individual response to HIV-1 infection. Many associations between specific gene

Thanks to: Samantha Barichievy , CSIR

Viral differences?

- Max Essex, Chair of the Harvard AIDS Initiative – "**about 30% of people acutely infected with HIV-1 Clade C maintain a high viral load for a much longer period than "**

Biological Factors that May Contribute to Regional and Racial Disparities in HIV Prevalence

Rupert Kaul[1,2], Craig R. Cohen[3,4], Duncan Chege[1], Tae J. Yi[1], Wangari Tharao[5], Lyle R. McKinnon[1,2], Robert Remis[6], Omu Anzala[2,7], Joshua Kimani[2,8]

[1]Department of Medicine, University of Toronto, Toronto, ON, Canada;
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[4]Center of Expertise on Women's Health & Empowerment, University of California Global Health Institute, San Francisco, CA, USA;
[5]Women's Health in Women's Hands, Toronto, ON, Canada;
[6]Dalla Lana School of Public Health, University of Toronto, Toronto, ON, Canada;
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Keywords
Africa, co-infections, HIV transmission, male circumcision, mucosal immunology, race

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Submitted November 26, 2010;
accepted November 30, 2010.

Citation
Kaul R, Cohen CR, Chege D, Yi TJ, Tharao W, McKinnon LR, Remis R, Anzala O, Kimani J. Biological factors that may contribute to regional and racial disparities in HIV prevalence. Am J Reprod Immunol 2011; 65: 317–324

doi:10.1111/j.1600-0897.2010.00962.x

Despite tremendous regional and subregional disparities in HIV prevalence around the world, epidemiology consistently demonstrates that black communities have been disproportionately affected by the pandemic. There are many reasons for this, and a narrow focus on socio-behavioural causes may be seen as laying blame on affected communities or individuals. HIV sexual transmission is very inefficient, and a number of biological factors are critical in determining whether an unprotected sexual exposure to HIV results in productive infection. This review will focus on ways in which biology, rather than behaviour, may contribute to regional and racial differences in HIV epidemic spread. Specific areas of focus are viral factors, host genetics, and the impact of co-infections and host immunology. Considering biological causes for these racial disparities may help to destigmatize the issue and lead to new and more effective strategies for prevention.

Highly efficient HIV transmission to young women in South Africa

Audrey E. Pettifor[b,d], Michael G. Hudgens[c], Brooke A. Levandowski[b], Helen V. Rees[d] and Myron S. Cohen[a,b]

Background: Young women in sub-Saharan Africa are at very high risk of HIV acquisition, and high prevalence levels have been observed among women reporting

Discussion

Our data indicate an incredibly high risk of HIV transmission per-partnership in young women in South Africa. These findings are supported by data from another large population-based study of young people in South Africa, which reported a per-partner HIV transmission probability estimate close to 1.0 for young women [4]. Similarly, Glynn *et al.* [3] concluded that the risk of HIV transmission at the first episode of sexual intercourse must be extremely efficient based on the high prevalence of infection observed among young women reporting one lifetime partner and few sexual contacts in Kisumu, Kenya. Taken together, these studies suggest that the probability of HIV acquisition among young women exposed to a single infected partner is extremely high.

Pettifor A, Hudgens M, Levandowski B, Rees H, Cohen M. Highly efficient HIV transmission to young women in South Africa. AIDS. 2007 Apr 23;21(7):861-865.

Determinants of Per-Coital-Act HIV-1 Infectivity Among African HIV-1-Serodiscordant Couples

James P. Hughes[1,5], Jared M. Baeten[2,3,9], Jairam R. Lingappa[2,3,4], Amalia S. Magaret[4,10], Anna Wald[2,9], Guy de Bruyn[6], James Kiarie[7], Mubiana Inambao[8], William Kilembe[8], Carey Farquhar[2,9], Connie Celum[2,3,9] and the Partners in Prevention HSV/HIV Transmission Study Team

1/525

1/1000

- Of 3297 couples experiencing 86 linked HIV-1 transmissions, the unadjusted per-act risks of unprotected male-to-female (MTF) and female-to-male (FTM) transmission were 0.0019 (95% confidence interval [CI], .0010–.0037) and 0.0010 (95% CI, .00060–.0017), respectively.

Note: NOT 'normal' population

J Infect Dis. (2012) 205 (3): 358-365. doi: 10.1093/infdis/jir747 First published online: January 11, 2012

- Modifiable risk factors for HIV-1 transmission were plasma HIV-1 RNA level and condom use, and, in HIV-1–uninfected partners, herpes simplex virus 2 infection, genital ulcers, *Trichomonas vaginalis*, vaginitis or cervicitis, and male circumcision

AIDS
OFFICIAL JOURNAL OF THE INTERNATIONAL AIDS SOCIETY

24 September 2011 - Volume 25 - Issue 15 - p 1887–1895
doi: 10.1097/QAD.0b013e32834a9338
Epidemiology and Social

Increased risk of HIV-1 transmission in pregnancy: a prospective study among African HIV-1-serodiscordant couples

Mugo, Nelly R.[a,b,c]; Heffron, Renee[c,d]; Donnell, Deborah[g]; Wald, Anna[d,e,f,h]; Were, Edwin O.[i]; Rees, Helen[j]; Celum, Connie[c,d,e]; Kiarie, James N.[a,b,c]; Cohen, Craig R.[k]; Kayintekore, Kayitesi[l]; Baeten, Jared M.[c,d,e]; for the Partners in Prevention HSVHIV Transmission Study Team

- “HIV-1 risk increased two-fold during pregnancy. Elevated risk of HIV-1 acquisition in pregnant women appeared in part to be explained by behavioral and other factors. This is the first study to show that pregnancy increased the risk of female-to-male HIV-1 transmission, which may reflect biological changes of pregnancy that could increase HIV-1 infectiousness”

Lets talk race…

27 August 2011 Last updated at 00:39 GMT

Is it wrong to note 100m winners are always black?

The conclusions that are drawn from black athletes dominating the 100m final go a long way to explaining attitudes in wider society, argues Matthew Syed.

In today's Magazine

- “…black people are naturally better sprinters than white people. Indeed, it is an inference that seems obligatory, barring considerations of political correctness” BUT… Kenya
- “…not Kenya as a whole that usually wins these medals, but individuals from a tiny region in the Rift Valley called Nandi”
- - There is far more genetic variation within racial groups (around 85%) than there is between racial groups (just 15%)
- ‘car keys in the car park at night’ – we measure what we can measure (and race is easy!)
- Have we measured the right things?

To sum up

- We do NOT understand the relative contribution of behaviour vs biological factors to HIV risk
- Even within these categories, there is no agreement as to what is important – BUT there are definite biological risk factors (genes, physiological changes, co-factor infections, contraception etc etc)
- The 'behaviours' may be fluid and very complex – and difficult to intervene
- How can we then forge effective prevention programmes?

Conclusion (1)

- Treat HIV earlier, fix PMTCT, circumcise, contraception
- Re: Prevention and behaviour
- Historically: Sloppy epidemiology, inadequate science, sexual hypocrisy, common-sense wisdom
- BUT it is getting better – better data, critical thinking

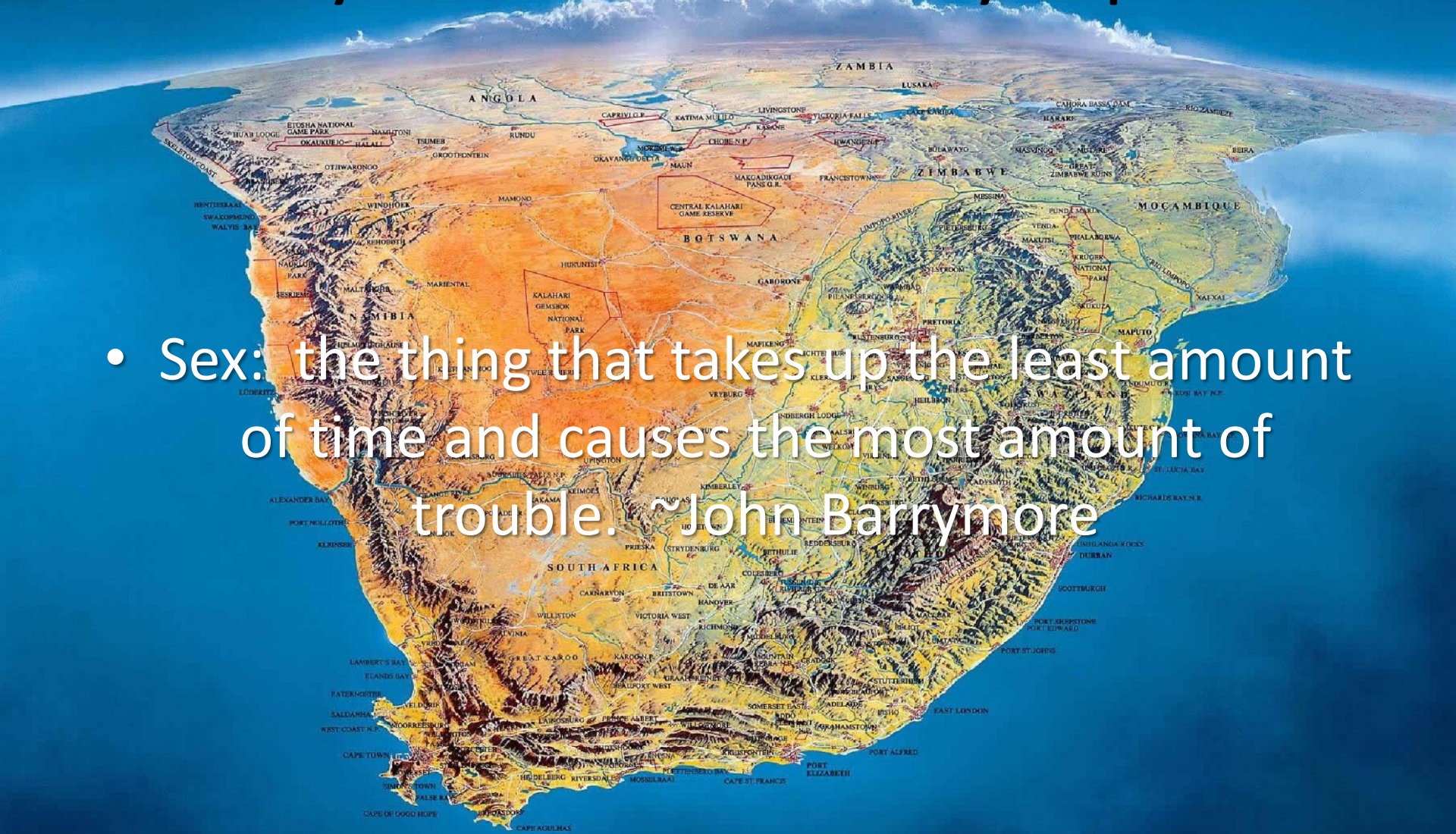
Conclusion (2)

- Deal with drug use – decriminalise (SAMJ call)
- Sex workers and clients – why not ‘normalise’ the work?
- MSM – fight discrimination, encourage openness

Conclusion 3: The straight problem

- Should we talk about people in couples like we do about intravenous drug users?
- You or your partner is likely to be unfaithful – how can we make this safer?
- Get this out of the closet – ‘Monogamish’ – Dan Savage – a new way to deal with relationships
- The SA Kinsey report

Why we need a Kinsey report



- Sex: the thing that takes up the least amount of time and causes the most amount of trouble. ~John Barrymore

Choice quotes

- “Why can’t you single people just get married?”
- “These young girls are stupid”
- “Sex workers should be registered”
- “The epidemic should be allowed to take its course – THEN people would take responsibility”
- “Men have more partners than women”
- “Sugar daddies drive the epidemic”
- “Unbanning sex work/ gay men/ intravenous drug use will stop the epidemic”
- “If people would just return to a traditional family values based system…”
- “We need a moral revolution”

Could it be hormonal contraception?

Summary

- Hormonal contraception was associated with a 2-fold increase in risk of:
  - HIV-1 acquisition by women
  - HIV-1 transmission from women to men
- Increased HIV-1 risk was found among the subgroup using injectable methods
  - Risk was elevated among oral contraceptive users but the number of women using pills was small
- HIV-1 seropositive women using injectables had greater genital HIV-1 RNA levels which may be responsible for the increased rate of transmission to men

Table 2. Summary view of higher and lower HIV incidence rates

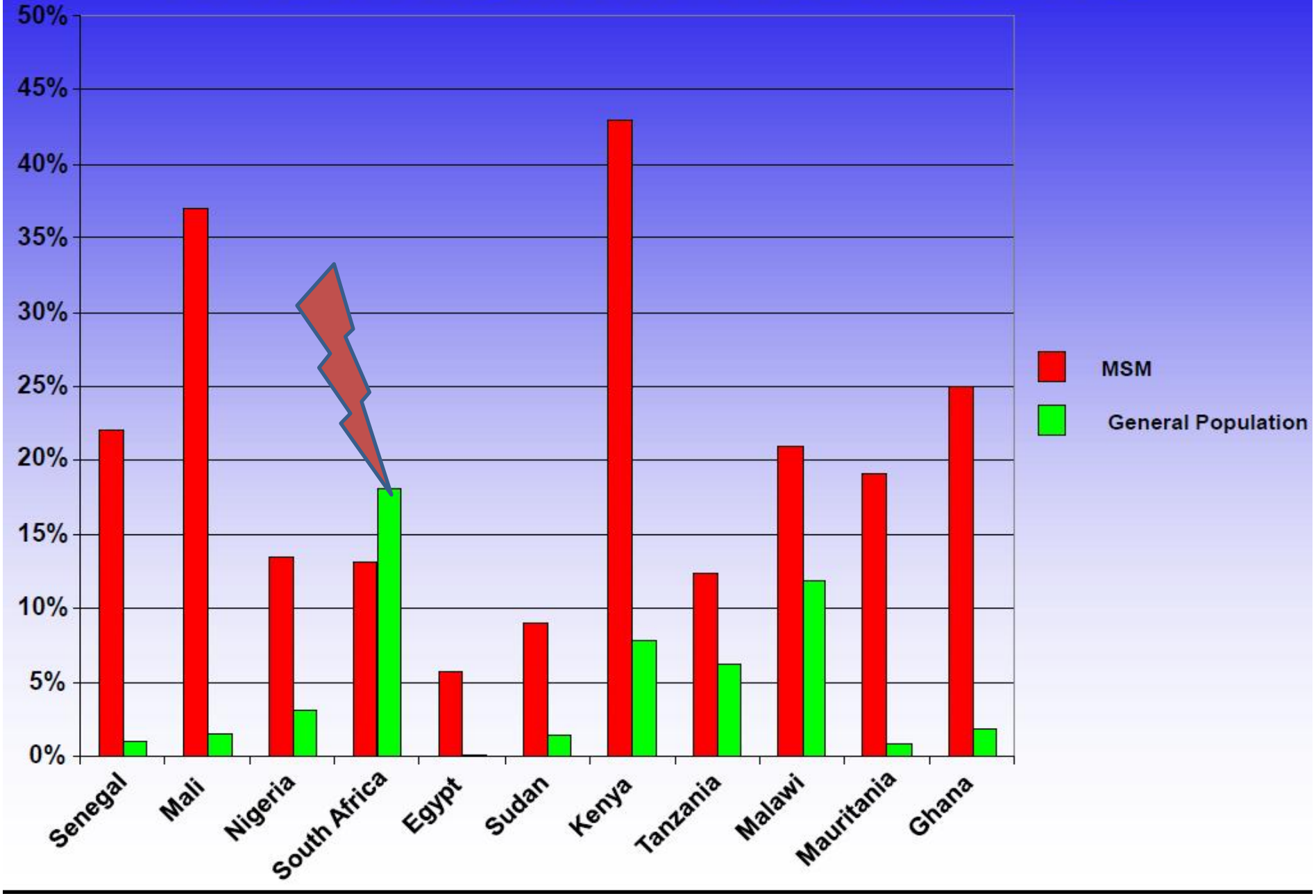
Higher HIV incidence rate	Lower HIV incidence rate
Youth 15-24 years	Children 2-14, Adults 25+ years
African (black) people	Coloured, Indian, White people
Residence in urban informal areas	Residence in urban formal, rural formal and rural informal areas
Resident in KZN, GA and EC	Residents in the other provinces
Those sexually active but neither married nor cohabiting, and those widowed	Those married and those cohabiting
Pregnant women	Women not currently pregnant
People with low educational attainment	People with high educational attainment
People reporting more than one sexual partner (past 12 months)	People reporting one sexual partner (past 12 months)
Sex workers and their clients	General population
MSM	Individuals neither reporting paid sex nor male-to-male sex

Sources: Rehle et al., 2007 (BED assay on 2005 samples) and MoT report (UNAIDS HIV incidence model for 2010).

CDC 2007

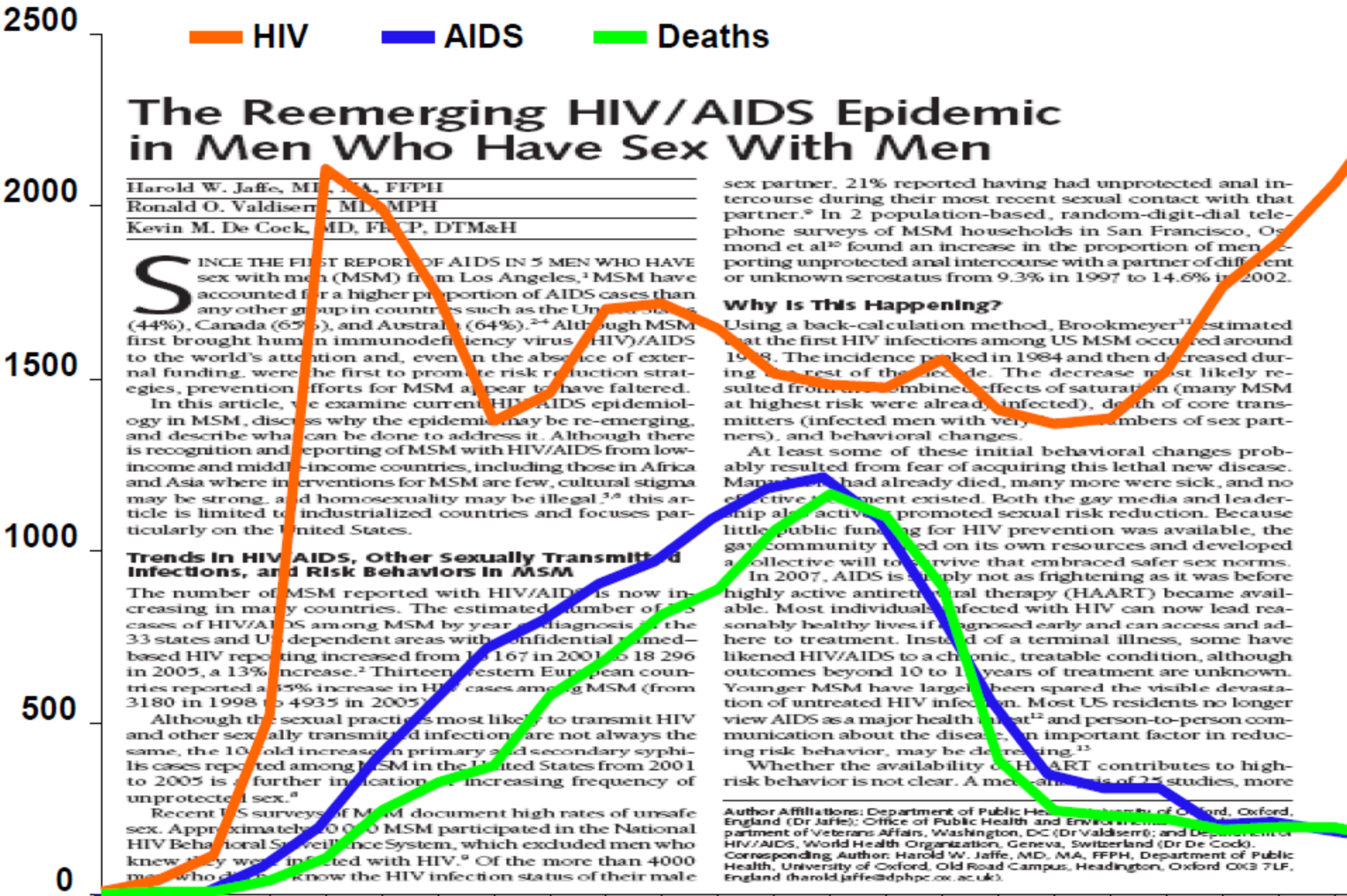
- US: Average male population lifetime sexual partners = 7. Average female lifetime = 4
- Someone is lying

AFRICA MSM HIV PREVALENCE



Gaps in ‘behaviour change’ research

- Better behavioural research required - Is sex amenable to directive behaviour change interventions?
- Sort out the biology (acquisitional risk); also, link existing science to existing programmes
- Are the current public health people the right ones to do this? ? Use Coca Cola – people with a track record
- If this was a tablet… *Why should we fund something that is poorly understood or measured, has little consensus or evidence for the intervention*
- Better research (and less rhetoric and excuse making) needed!



The Reemerging HIV/AIDS Epidemic in Men Who Have Sex With Men

Harold W. Jaffe, MD, MA, FFPH
Ronald O. Valdiserri, MD, MPH
Kevin M. De Cock, MD, FRCP, DTM&H

SINCE THE FIRST REPORTS OF AIDS IN 5 MEN WHO HAVE sex with men (MSM) from Los Angeles,[1] MSM have accounted for a higher proportion of AIDS cases than any other group in countries such as the United States (44%), Canada (65%), and Australia (64%).[2-4] Although MSM first brought human immunodeficiency virus (HIV)/AIDS to the world's attention and, even in the absence of external funding, were the first to promote risk reduction strategies, prevention efforts for MSM appear to have faltered.

In this article, we examine current HIV/AIDS epidemiology in MSM, discuss why the epidemic may be re-emerging, and describe what can be done to address it. Although there is recognition and reporting of MSM with HIV/AIDS from low-income and middle-income countries, including those in Africa and Asia where interventions for MSM are few, cultural stigma may be strong, and homosexuality may be illegal,[5,6] this article is limited to industrialized countries and focuses particularly on the United States.

Trends in HIV/AIDS, Other Sexually Transmitted Infections, and Risk Behaviors in MSM

The number of MSM reported with HIV/AIDS is now increasing in many countries. The estimated number of US cases of HIV/AIDS among MSM by year of diagnosis in the 33 states and US dependent areas with confidential name–based HIV reporting increased from 16 167 in 2001 to 18 296 in 2005, a 13% increase.[2] Thirteen Western European countries reported a 35% increase in HIV cases among MSM (from 3180 in 1998 to 4935 in 2005).[7]

Although the sexual practices most likely to transmit HIV and other sexually transmitted infections are not always the same, the 10-fold increase in primary and secondary syphilis cases reported among MSM in the United States from 2001 to 2005 is a further indication of increasing frequency of unprotected sex.[8]

Recent US surveys of MSM document high rates of unsafe sex. Approximately 20 000 MSM participated in the National HIV Behavioral Surveillance System, which excluded men who knew they were infected with HIV.[9] Of the more than 4000 men who did not know the HIV infection status of their male sex partner, 21% reported having had unprotected anal intercourse during their most recent sexual contact with that partner.[9] In 2 population-based, random-digit-dial telephone surveys of MSM households in San Francisco, Osmond et al[10] found an increase in the proportion of men reporting unprotected anal intercourse with a partner of different or unknown serostatus from 9.3% in 1997 to 14.6% in 2002.

Why Is This Happening?

Using a back-calculation method, Brookmeyer[11] estimated that the first HIV infections among US MSM occurred around 1978. The incidence peaked in 1984 and then decreased during the rest of the decade. The decrease most likely resulted from the combined effects of saturation (many MSM at highest risk were already infected), death of core transmitters (infected men with very large numbers of sex partners), and behavioral changes.

At least some of these initial behavioral changes probably resulted from fear of acquiring this lethal new disease. Many men had already died, many more were sick, and no effective treatment existed. Both the gay media and leadership also actively promoted sexual risk reduction. Because little public funding for HIV prevention was available, the gay community relied on its own resources and developed a collective will to survive that embraced safer sex norms.

In 2007, AIDS is simply not as frightening as it was before highly active antiretroviral therapy (HAART) became available. Most individuals infected with HIV can now lead reasonably healthy lives if diagnosed early and can access and adhere to treatment. Instead of a terminal illness, some have likened HIV/AIDS to a chronic, treatable condition, although outcomes beyond 10 to 15 years of treatment are unknown. Younger MSM have largely been spared the visible devastation of untreated HIV infection. Most US residents no longer view AIDS as a major health threat[12] and person-to-person communication about the disease, an important factor in reducing risk behavior, may be decreasing.[13]

Whether the availability of HAART contributes to high-risk behavior is not clear. A meta-analysis of 25 studies, more

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SPECIAL REPORT
TIME
Monica and Bill
THE SORDID TALE THAT IMPERILS THE PRESIDENT
Monica Lewinsky next to President Clinton at a White House lawn party the day after the November 1996 election