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HIV & AIDS – sharing knowledge, changing lives

EATG European AIDS Treatment Group

The new HIV prevention landscape

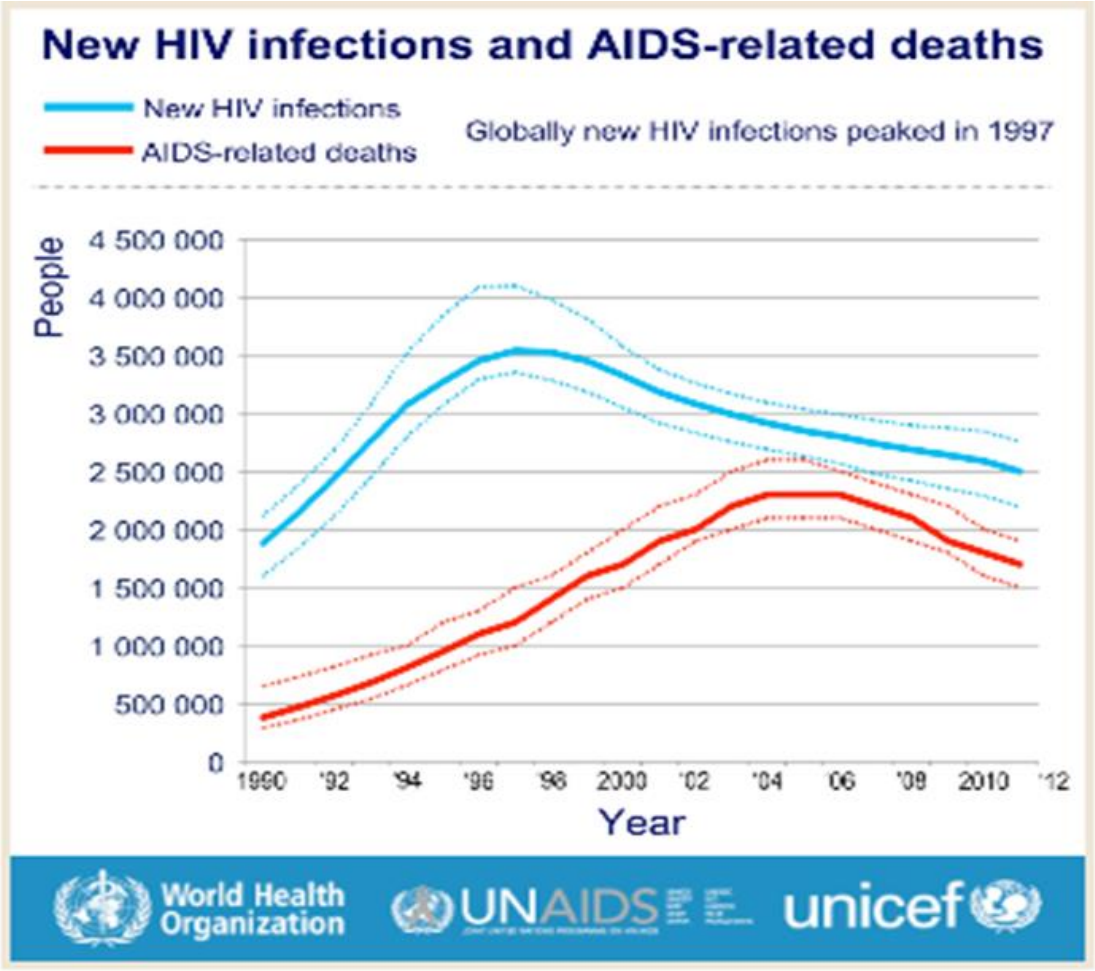
Gus Cairns, Editor, NAM / Aidsmap.com

Policy working group, EATG

AVAC
Global Advocacy for HIV Prevention

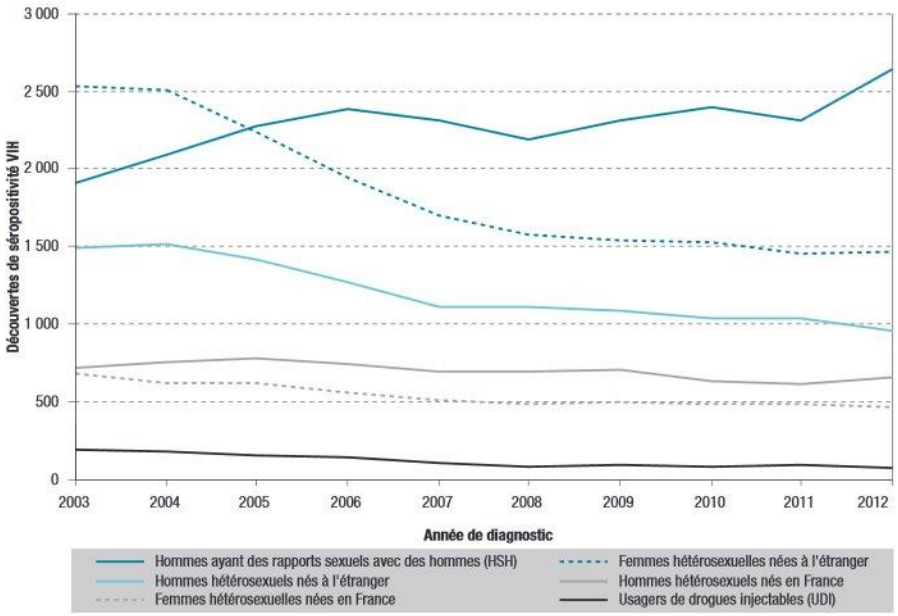
Current HIV landscape

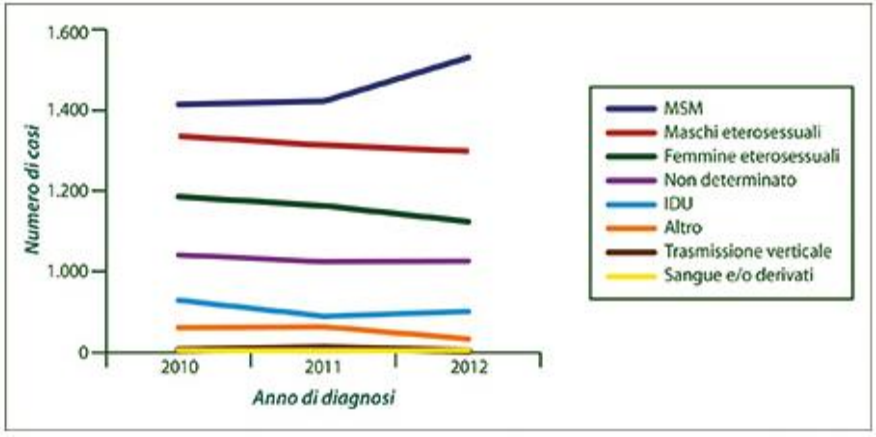
Achievement

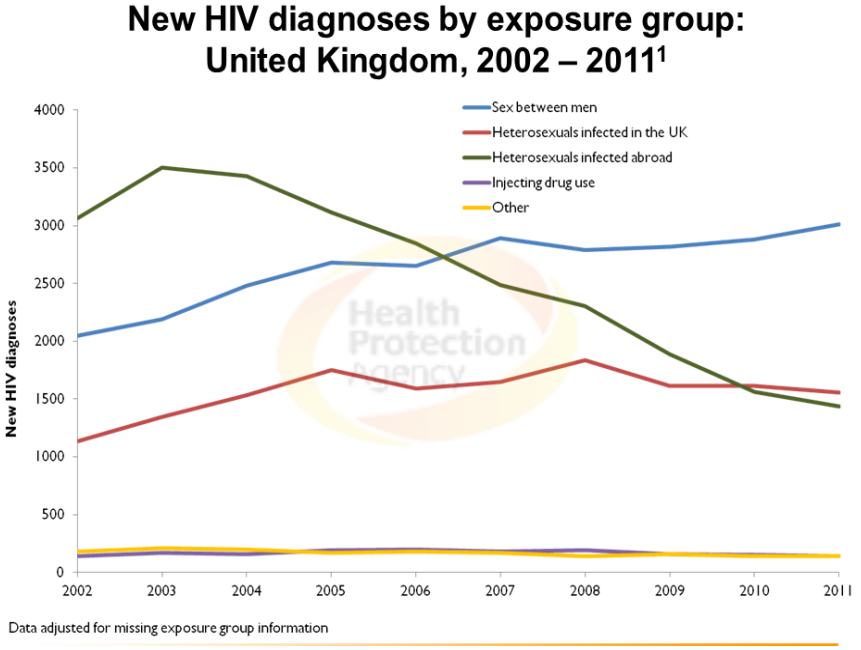


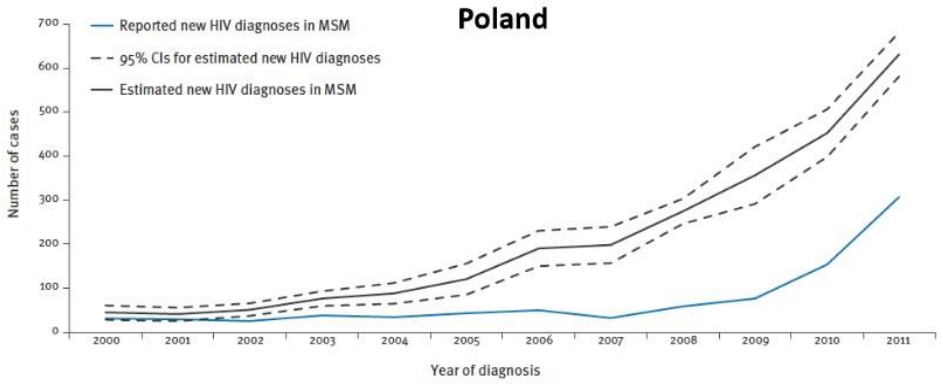
Challenge in the west: gay/MSM

HIV diagnoses: UK 2002–11, France 2003–12, Italy 2010–12, Poland 2000–11







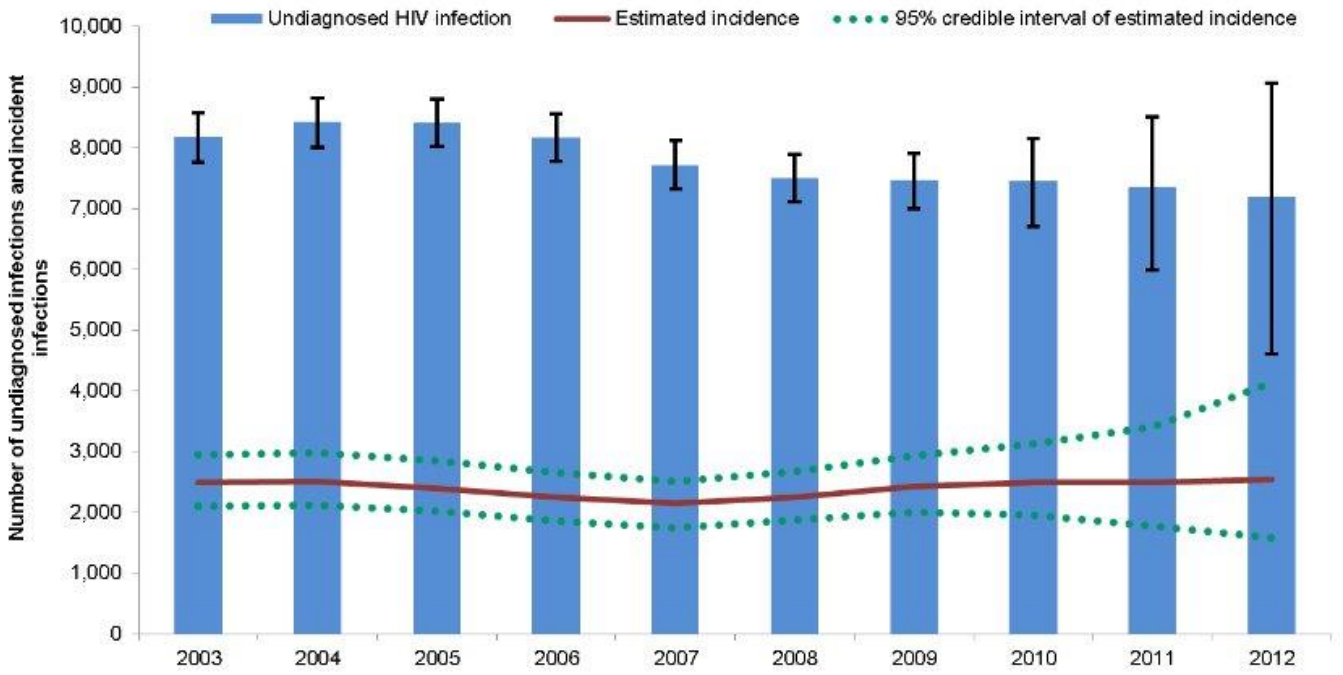


Health Protection Agency. HIV in the United Kingdom: 2012 Report . HPA, 2012.
Cazein F et al. Découvertes de séropositivité VIH et sida : France, 2003-2012. Bulletin épidémiologique hebdomadaire 2014; (9-10):154-62.
AVAC presentation: MSM in Europe. See http://www.avac.org/sites/default/files/u3/MSM_in_Europe_Euro_Rave.pdf

Challenge in the west: gay/MSM

Not all due to more testing: actual incidence at least steady

Figure 3: Back-calculation estimate of HIV incidence and prevalence of undiagnosed HIV infection among MSM: UK, 2003-2012



Ref: Public Health England: HIV in the United Kingdom: 2013 Report

Challenge in the east: untreated epidemic

Figure M: Trends in reported HIV infections, by transmission mode and year of diagnosis, adjusted for reporting delay, WHO European Region: East, 2006–2012 (arithmetic and logarithmic scale)

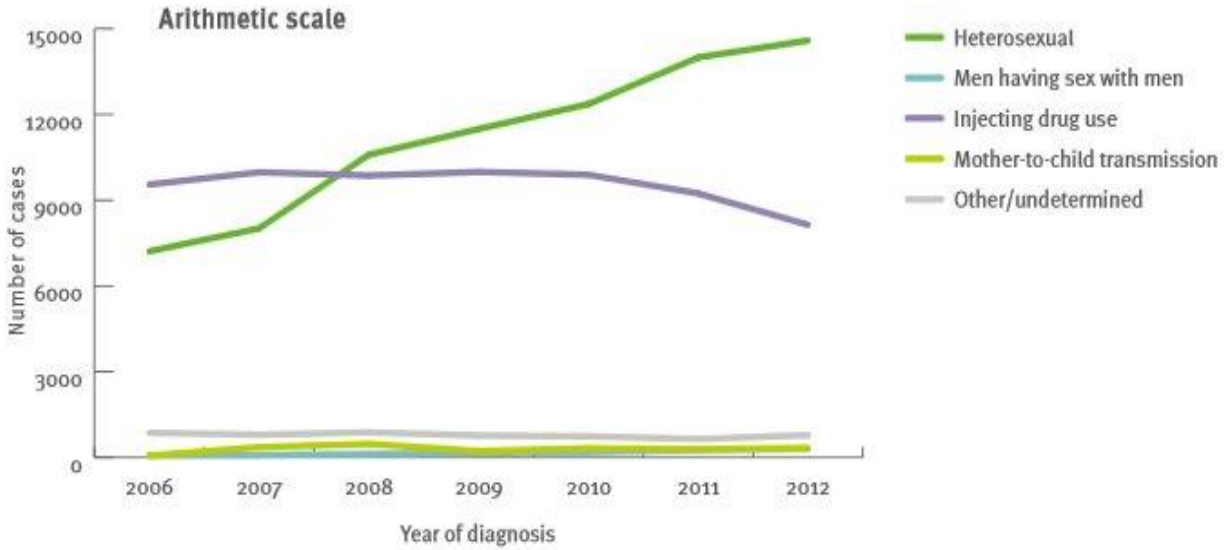
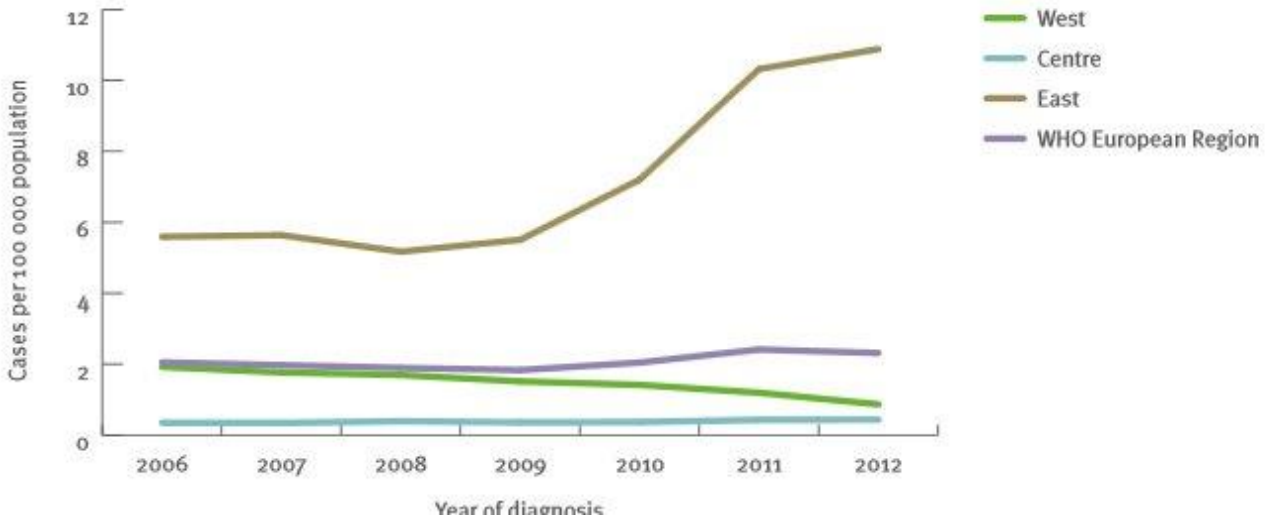


Figure K: AIDS cases per 100 000 population, by geographical area and year of diagnosis, 2006–2012



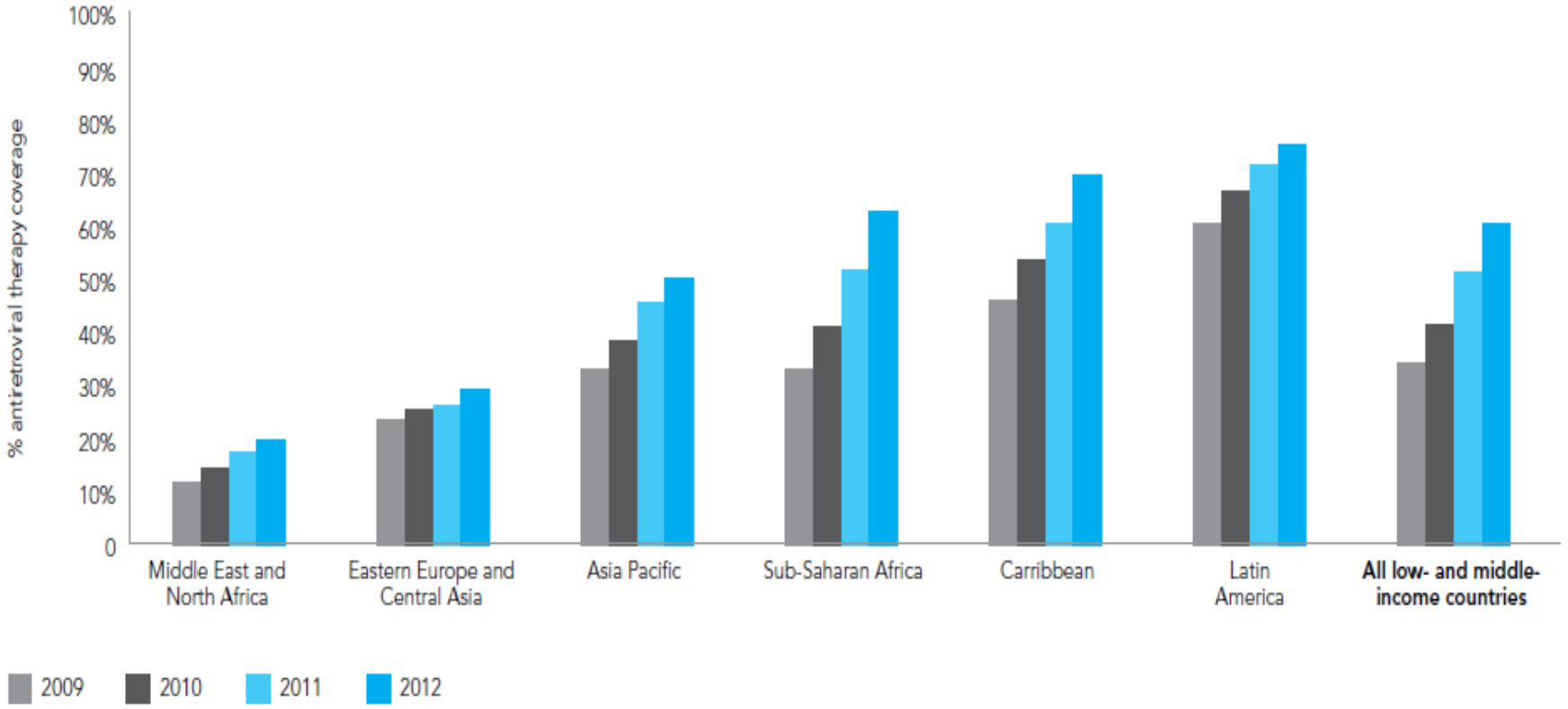
Threatens to become generalised in some areas: see

Eritsyan K et al. *Estimation of HIV sexual transmission potential from IDU to general population in two Russian cities.* 19th International AIDS Conference, abstract MOAC0403, Washington DC, 2012.

Challenge in the east: access

FIGURE 4.1

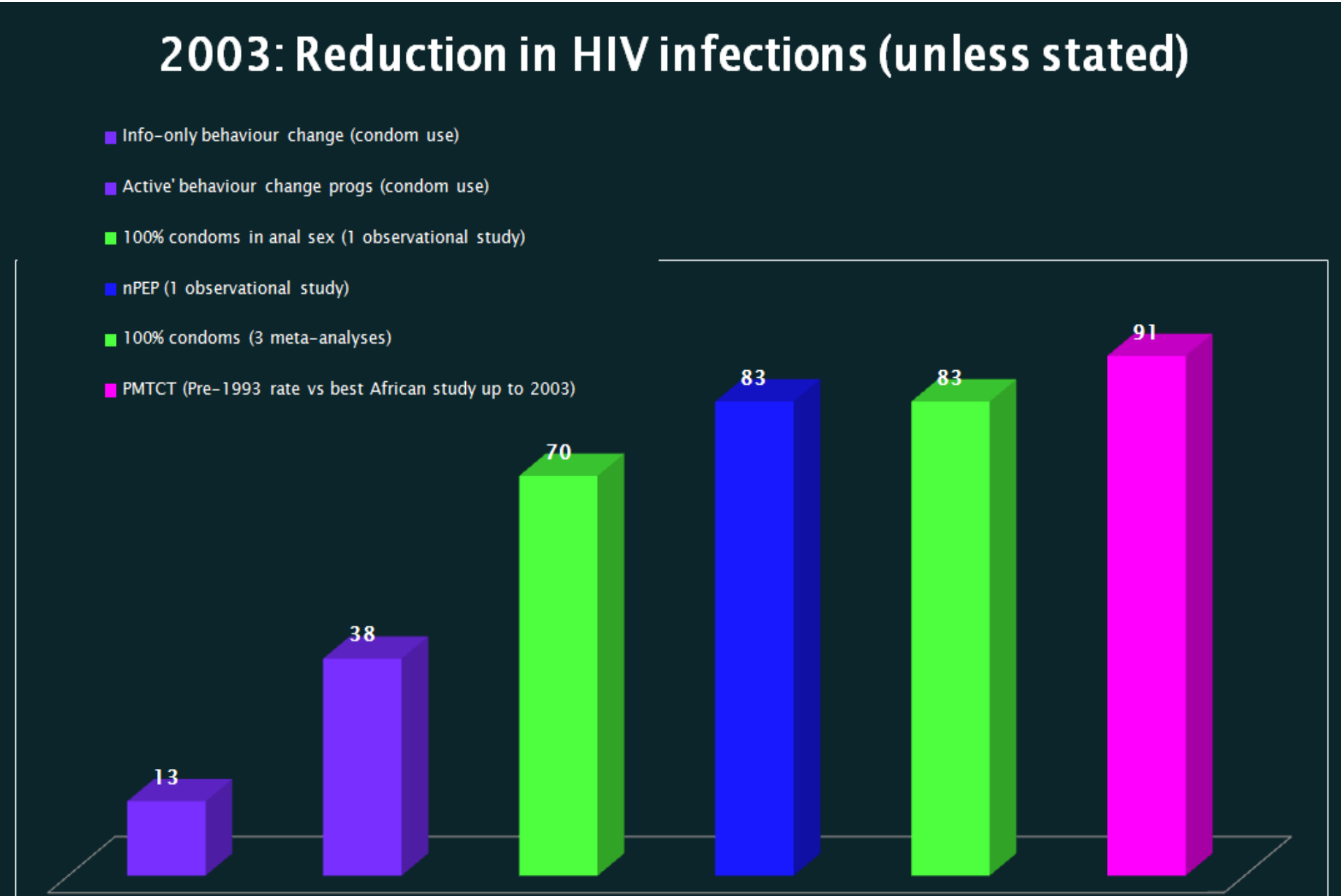
Percentage of people eligible who are receiving antiretroviral therapy (based on 2010 WHO guidelines) in low- and middle-income countries, by region, 2009–2012

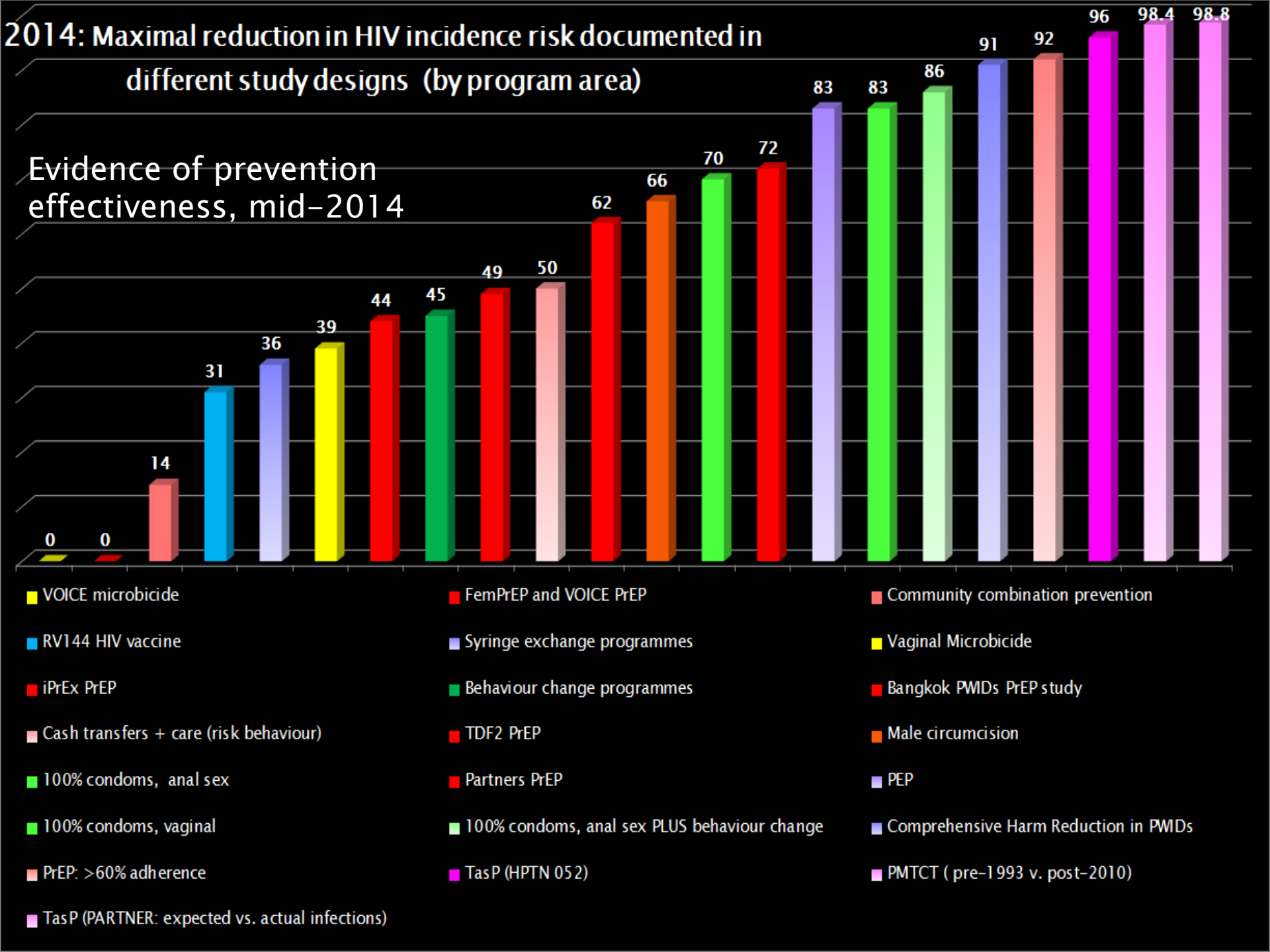


Source: UNAIDS 2012 estimates.

Our prevention toolbox

Evidence of prevention effectiveness, 2003



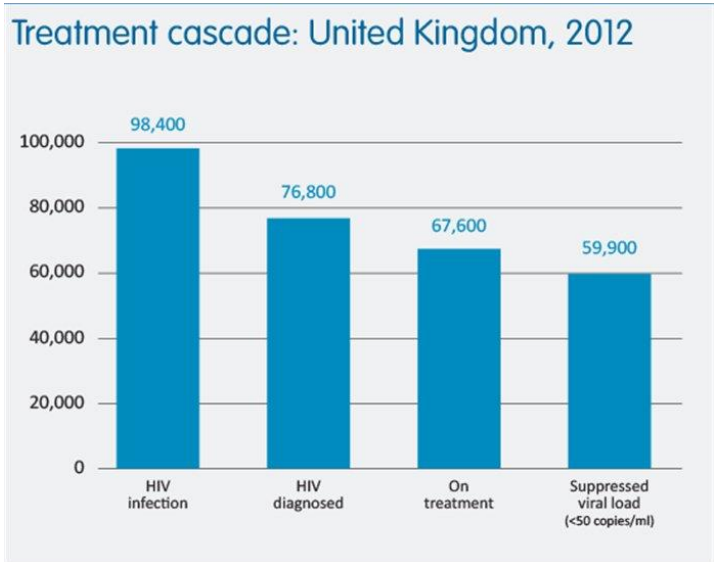

2014: Maximal reduction in HIV incidence risk documented in different study designs (by program area)
Evidence of prevention effectiveness, mid-2014
0
0
14
31
36
39
44
45
49
50
62
66
70
72
83
83
86
91
92
96
98.4
98.8
VOICE microbicide
FemPrEP and VOICE PrEP
Community combination prevention
RV144 HIV vaccine
Syringe exchange programmes
Vaginal Microbicide
iPrEx PrEP
Behaviour change programmes
Bangkok PWIDs PrEP study
Cash transfers + care (risk behaviour)
TDF2 PrEP
Male circumcision
100% condoms, anal sex
Partners PrEP
PEP
100% condoms, vaginal
100% condoms, anal sex PLUS behaviour change
Comprehensive Harm Reduction in PWIDs
PrEP: >60% adherence
TasP (HPTN 052)
PMTCT (pre-1993 v. post-2010)
TasP (PARTNER: expected vs. actual infections)

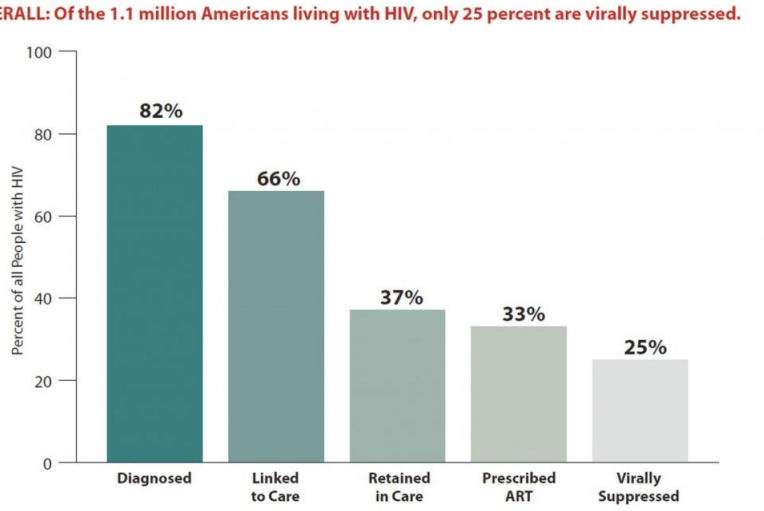
Efficacy in trials references

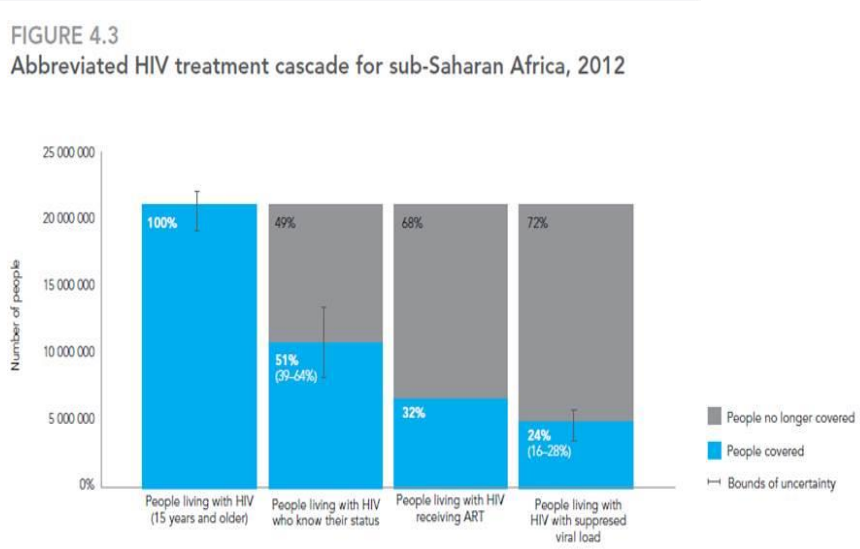
- **VOICE:** Marrazzo J et al. *Pre-exposure prophylaxis for HIV in women: daily oral tenofovir, oral tenofovir/emtricitabine or vaginal tenofovir gel in the VOICE study (MTN 003).* 20th Conference on Retroviruses and Opportunistic Infections, Atlanta, abstract 26LB, 2013. See www.mtnstopshiv.org/news/studies/mtn003
- **FEM-PrEP:** Van Damme L et al. *The FEM-PrEP Trial of Emtricitabine/Tenofovir Disoproxil Fumarate (Truvada) among African Women*. 19th Conference on Retroviruses and Opportunistic Infections, Seattle, abstract 32LB, 2012. See this summary.
- **Behaviour change programmes** (info-only and 'active')**:** Albarracin D et al. *A test of major assumptions about behaviour change: a comprehensive look at the effects of passive and active HIV-prevention interventions since the beginning of the epidemic.* Psychological Bulletin 131(6), 856-897, 2005. Abstract here.
- **RV144:** Rerks-Ngarm Supachai et al. *Vaccination with ALVAC and AIDSVAX to Prevent HIV-1 Infection in Thailand*. NEJM 361:2209-2220. 2009.
- **CAPRISA 004:** Abdool Karim Q et al. *Effectiveness and Safety of Tenofovir Gel, an Antiretroviral Microbicide, for the Prevention of HIV Infection in Women.* Science 329(5996): 1168–1174. 2010.
- **iPrEx:** Grant RM et al. *Preexposure Chemoprophylaxis for HIV Prevention in Men Who Have Sex with Men.* NEJM 363(27):2587-2599. 2010.
- **TDF2:** Thigpen MC et al. *Antiretroviral Preexposure Prophylaxis for Heterosexual HIV Transmission in Botswana.* NEJM 367:423-434. 2012.
- **Male Circumcision (men):** *Auvert B et al. Randomized, Controlled Intervention Trial of Male Circumcision for Reduction of HIV Infection Risk: The ANRS 1265 Trial .* PLoS Medicine 2(11): e298. doi:10.1371/journal.pmed.0020298. **AND** Bailey RC et al. *Male circumcision for HIV prevention in young men in Kisumu, Kenya: a randomised controlled trial.* Lancet 369(9562):643-56. 2007. **AND** *Gray RH et al. Male circumcision for HIV prevention in men in Rakai, Uganda: a randomised trial.* Lancet 369(9562): 657 – 666. 2007.
- **Condoms in anal sex:** Smith D et al. *Condom efficacy by consistency of use among MSM: US.* 20th Conference on Retroviruses and Opportunistic Infections, Atlanta, abstract 32, 2013. **AND** Detels R et al. *Seroconversion, sexual activity, and condom use among 2915 HIV seronegative men followed for up to 2 years.* J Acquir Immune Defic Syndr 2:77–83, 1989.
- **Partners PrEP:** Baeten JM et al. *Antiretroviral Prophylaxis for HIV Prevention in Heterosexual Men and Women.* NEJM 367(5): 399-410. 2012.
- **nPEP:** Schechter M et al. *Behavioral impact, acceptability, and HIV incidence among homosexual men with access to postexposure chemoprophylaxis for HIV.* JAIDS 35:519--25. 2004.
- **Condoms (heterosexual).** *Condom effectiveness in reducing heterosexual HIV transmission (Review).* The Cochrane Collaboration, The Cochrane Library 2007, Issue 4. See http://apps.who.int/rhl/reviews/CD003255.pdf.
- **Condoms in anal sex plus behaviour change:** See Smith D above.
- **PrEP with >60% adherence:** Anderson P et al. *Intracellular tenofovir-DP concentrations associated with PrEP efficacy in MSM from iPrEx.* 19thConference on Retroviruses and Opportunistic Infections, Seattle, abstract 31LB, 2012.
- **HPTN052 (TasP):** Cohen MS et al. *Prevention of HIV-1 Infection with Early Antiretroviral Therapy.* NEJM 365:493-505. 2011.
- **PMTCT** Comparison of Connor EM. *Reduction of Maternal-Infant Transmission of Human Immunodeficiency Virus Type 1 with Zidovudine Treatment.* NEJM 331:1173-1180. 1994 and Von Linstow ML. *Prevention of mother-to-child transmission of HIV in Denmark, 1994-2008.* HIV Medicine 11(7):448-56. 2010. (2003 slide, comparison with Ekouevi et al. *Antiretroviral therapy in pregnant women with advanced HIV disease and pregnancy outcomes in Abidjan, Cote d'Ivoire.* AIDS22(14),1815-1820. 2008.)

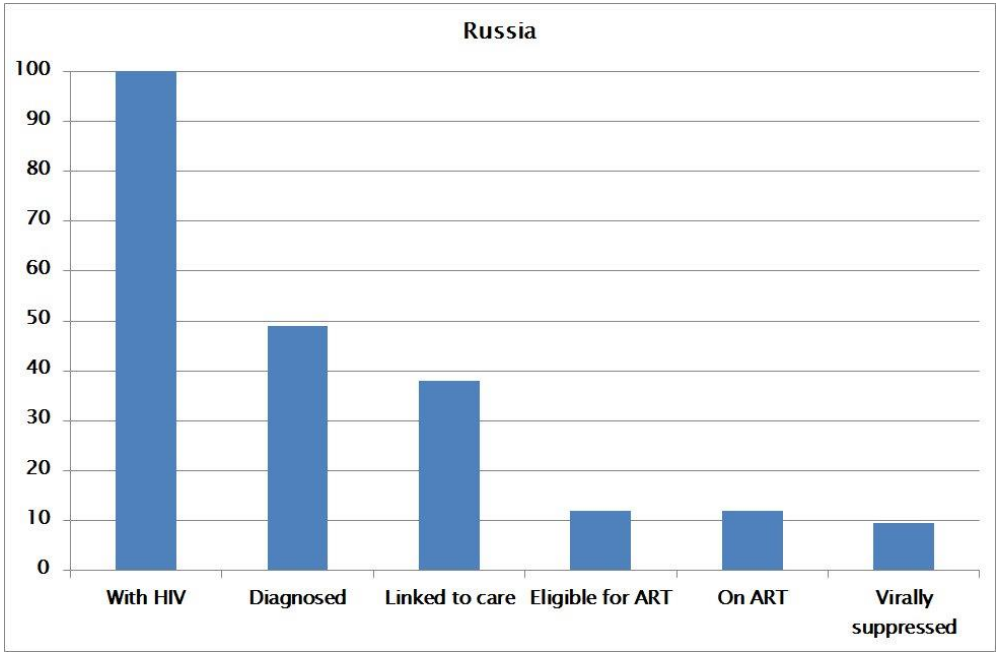
Challenges to prevention effectiveness

T as P – a walk through the Cascades









PHE: CDC: UNAIDS: Pokrovskaya, JIAS 17(4Suppl 3): 19506, 2014.

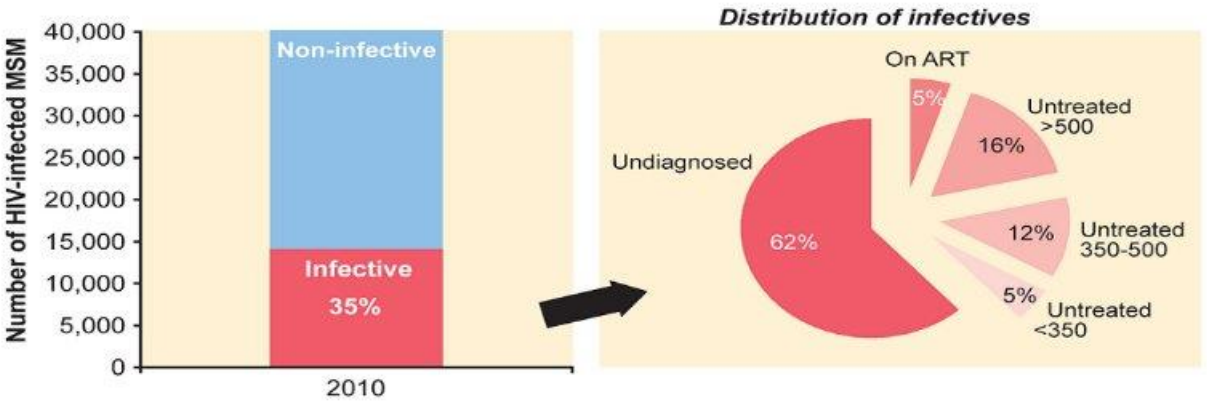
Each epidemic is different

- Each has its own gaps
  - UK/western Europe: diagnosis
  - US: retention in care
  - Africa: diagnosis
  - Russia: diagnosis, eligibility for ART
  - Different populations with different risks of HIV infection and transmission
  - Resources in TasP and especially PrEP need to be targeted accurately to be cost-effective

TasP is not enough

- Even UNAIDS 90/90/90 target will only produce 60% of targeted reduction in incidence
- As more diagnosed, in concentrated epidemics, most infections come from undiagnosed:

Distribution of infectives* among HIV-infected MSM, UK: 2010, *Brown et al*



* viral load >1500 copies/ml

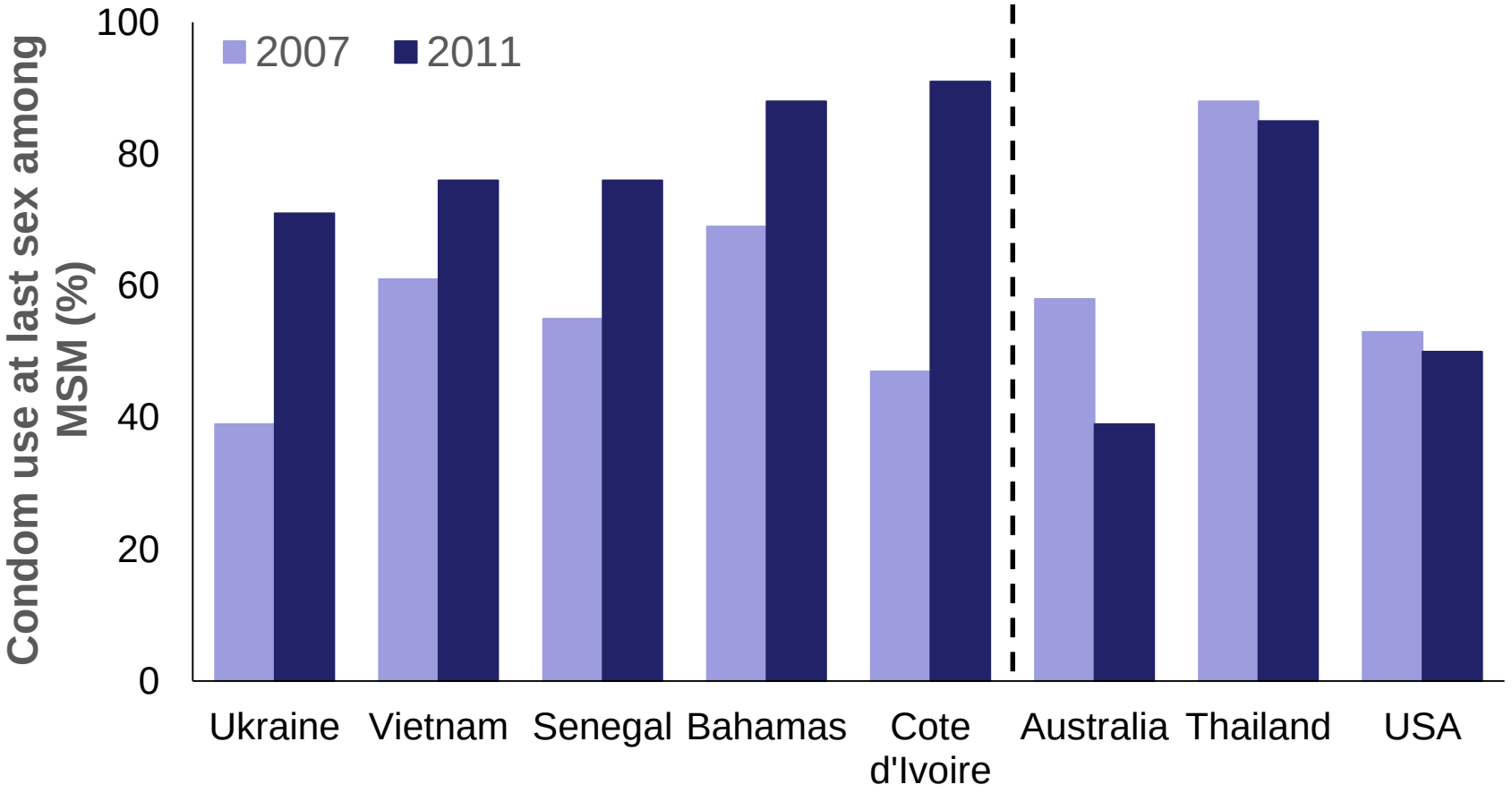
Extending ART to all MSM with CD4 counts <500 cells/mm^3 would reduce infectivity from an estimated 35% to 29% and, in combination with halving the undiagnosed, to 21%.

[Delpech V IAPAC prevention summit 2012]

Condoms still work!

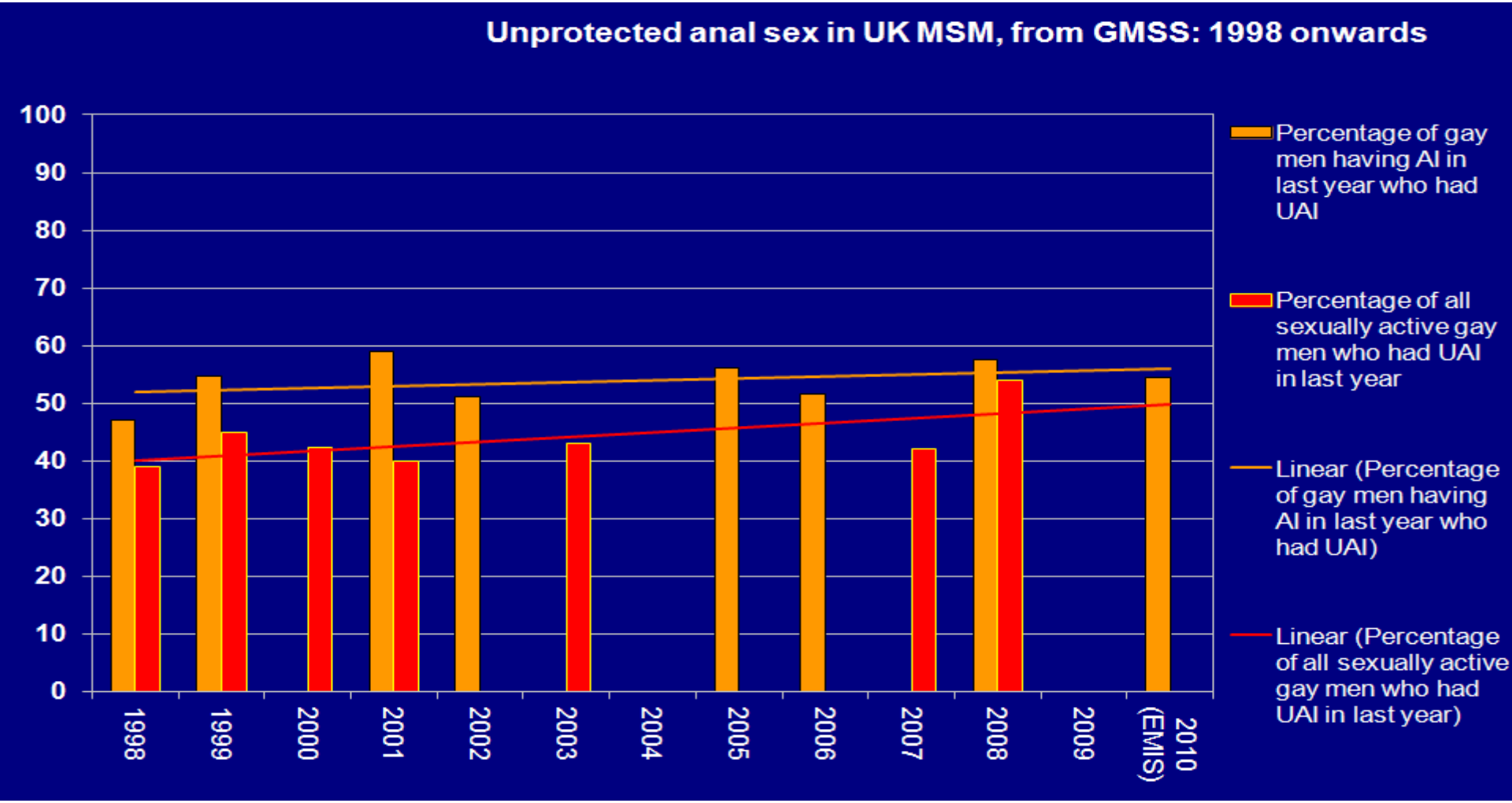
- Some people are only now getting what they should have had all along
- *Globally*, condom distribution schemes remain one of the most effective and cost-effective ways to bring down HIV incidence…
- …in areas/populations **that have had no access before**

Condom use among MSM in selected countries, 2007 vs 2011



Source: www.unaids.org

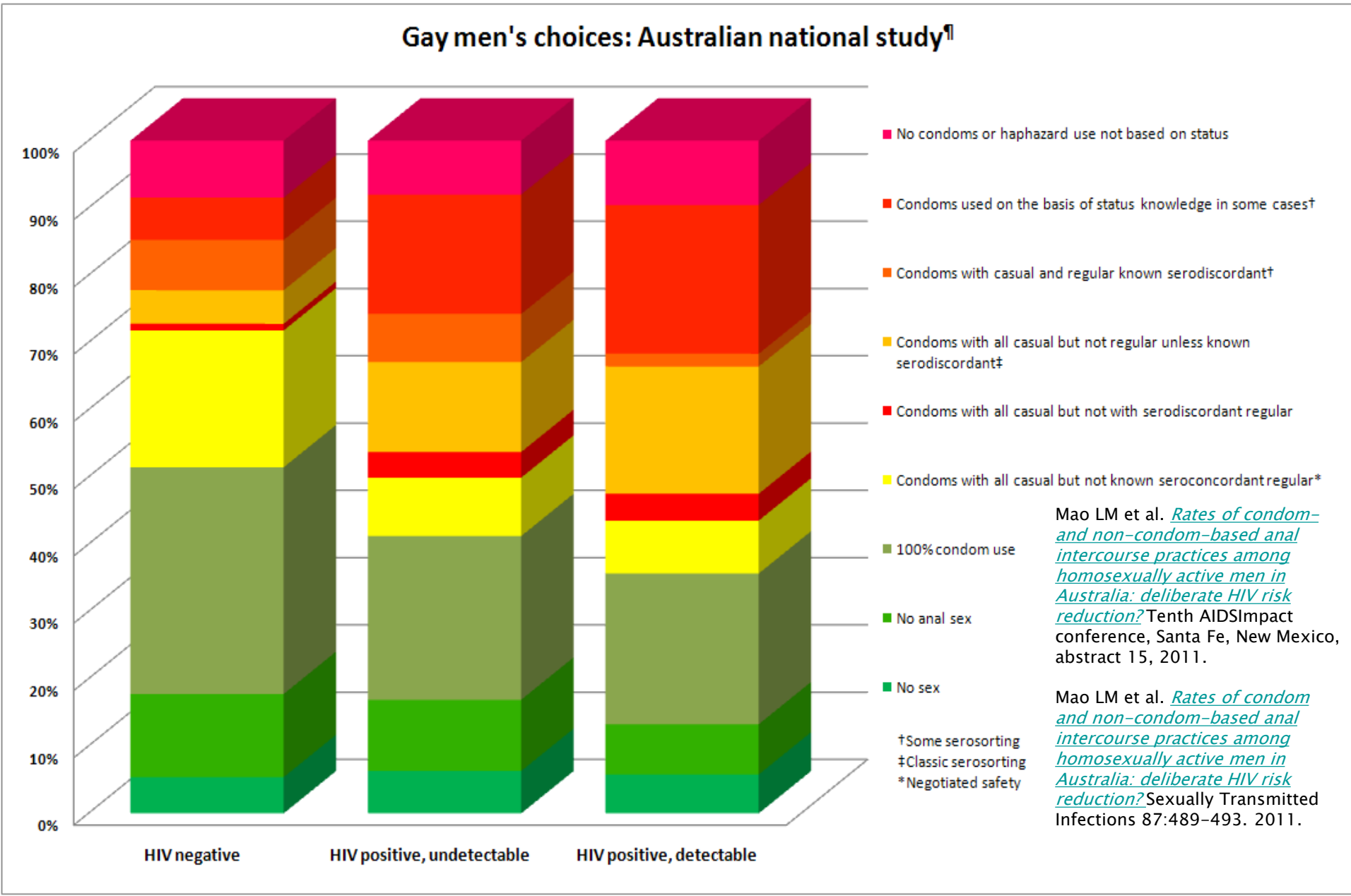
But…the condom ceiling (GMSS, UK)



Data from Gay Men's Sex Surveys, 1993-2008 a*nd* EMIS 2010: The European Men-Who-Have-Sex-With-Men Internet Survey. Findings from 38 countries

See also Hickson F et al. *HIV Testing and HIV Serostatus-Specific Sexual Risk Behaviour Among Men Who Have Sex with Men Living in England and Recruited Through the Internet in 2001 and 2008.* Sexuality Research and Social Policy 10: 15-23. (Full text available here)

Navigating in the dark: Complexity of choice

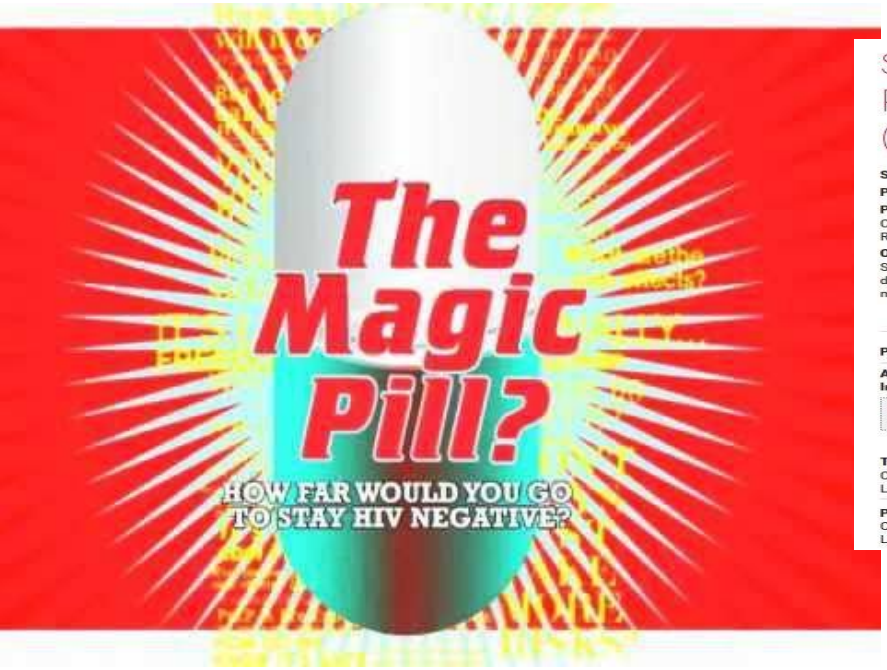


Mao LM et al. *Rates of condom- and non-condom-based anal intercourse practices among homosexually active men in Australia: deliberate HIV risk reduction?* Tenth AIDSImpact conference, Santa Fe, New Mexico, abstract 15, 2011.

Mao LM et al. *Rates of condom and non-condom-based anal intercourse practices among homosexually active men in Australia: deliberate HIV risk reduction?* Sexually Transmitted Infections 87:489–493. 2011.

Some new answers

The role of PrEP?



Sisters Antiretroviral therapy Programme for Prevention of HIV –an Integrated Response (SAPPH-Ire)

Status Ongoing
Phase Demo Project
Principal Investigator(s)
Centre for Sexual Health and HIV/AIDS Research Zimbabwe; University College London; London School of Hygiene and Tropical Medicine ; RTI; DFID; UNFPA
Objective
Seeks to enhance HIV treatment and prevention among 28,000 highway-based sex workers by increasing uptake and frequency of testing, demonstrate acceptability and feasibility of delivering PrEP, maximize retention in care, promote timely initiation of ART for those eligible, and maximize adherence to both ART and PrEP.

Prevention Option(s) PrEP
Arms and Assigned Interventions

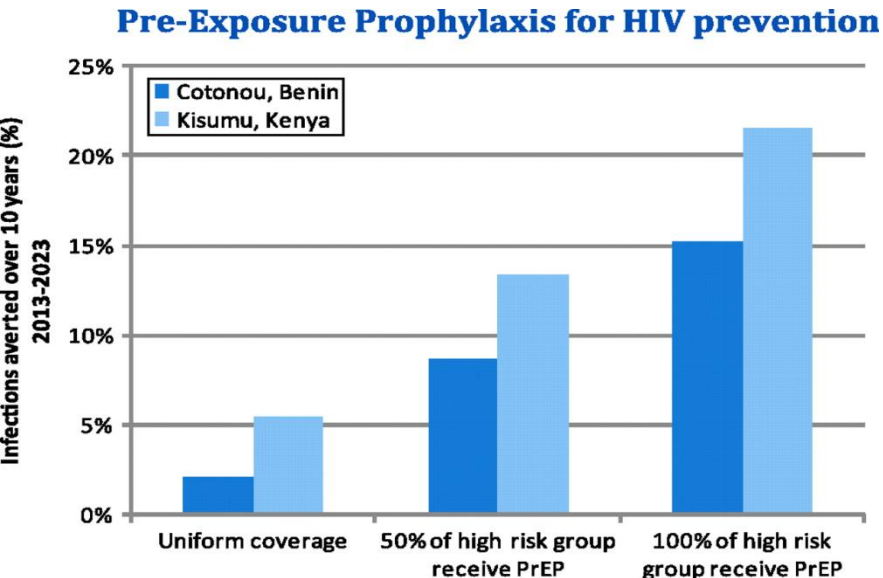
Products	TDF/FTC (Truvada)

Trial Sponsors
Centre for Sexual Health and HIV/AIDS Research Zimbabwe; University College London; London School of Hygiene and Tropical Medicine ; RTI; DFID; UNFPA
Product Developers
Centre for Sexual Health and HIV/AIDS Research Zimbabwe; University College London; London School of Hygiene and Tropical Medicine ; RTI; DFID; UNFPA

JULY 2014 → OCTOBER 2015

Enrollment 28 000
Age Range 18 Years ↔
Population Women

Sites
Site(s) - Zimbabwe
Zimbabwe



NEW YORK

Sex Without Fear

The new pill that could revolutionize gay life is reawakening old arguments.

By Tim Murphy Published Jul 13, 2014

Left: "I equate PrEP to the Pill. People had a backlash against it at first, thinking it would lead to promiscuity. I'm being a pioneer and a guinea pig,

Gabriel and his friends like to go dancing at places in Chelsea and Hell's Kitchen like Viva and Pacha. One night last winter, they ended up at a downtown club hosting a circuit party, a huge gay rave with throbbing, industrial house music. The theme was leather and S&M, and Gabriel* wore a singlet. He's usually the least

The adherence challenge: perfect versus actual use (Coates, Lancet, 2010)

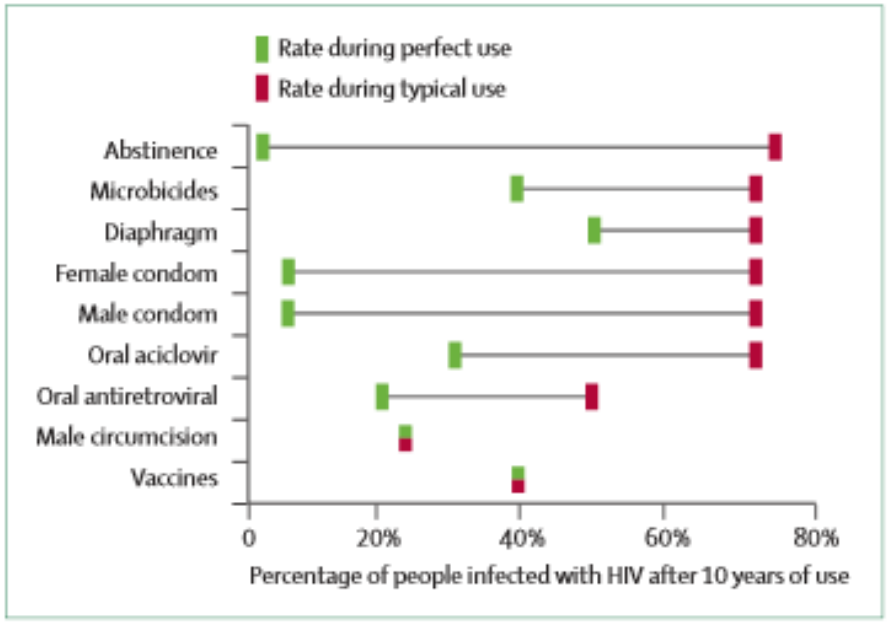
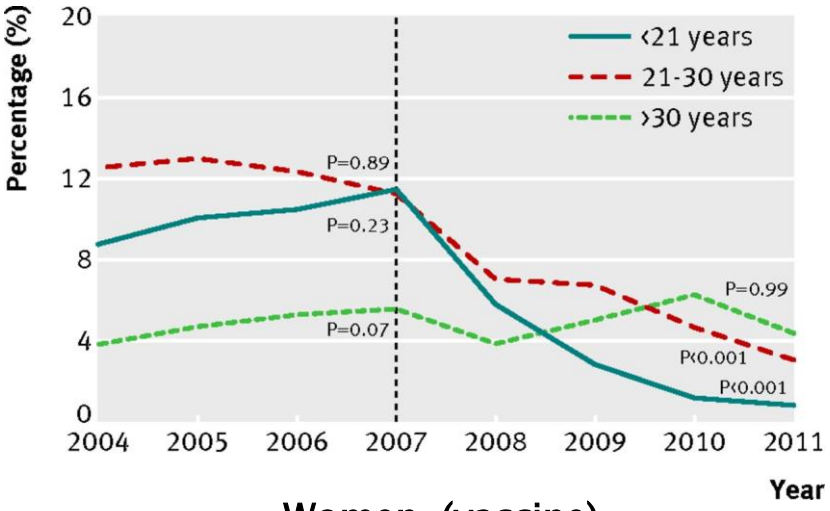


Figure 2: **Adherence to HIV prevention technologies**
Adapted from reference 89 with permission from author and publisher.

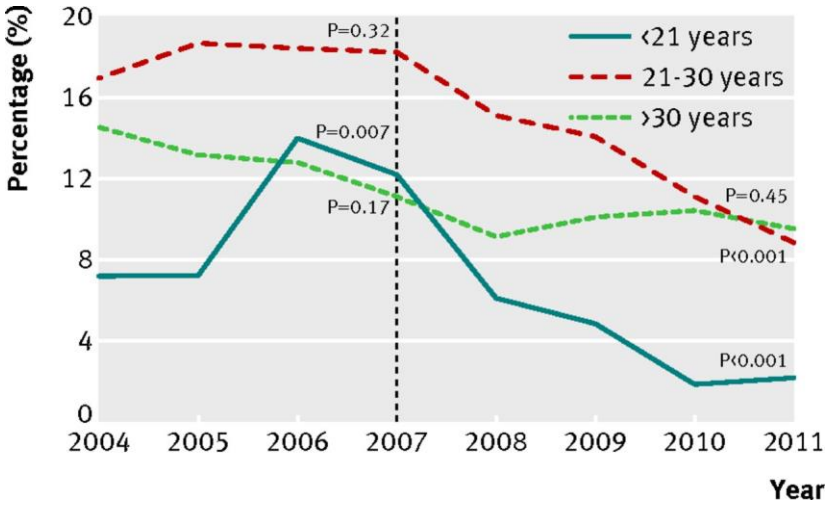
- Even with high levels of adherence HIV risk accumulates
- 'One-off' risk reductions (MMC, **a vaccine**) avoids this problem
- Halfway houses: injectable PrEP, vaginal rings, etc
- This year: the year of **microbicides?**

Coates, Richter and Caceres. Behavioural strategies to reduce HIV transmission: how to make them work better. Lancet 372(9639):669-684. 2008.

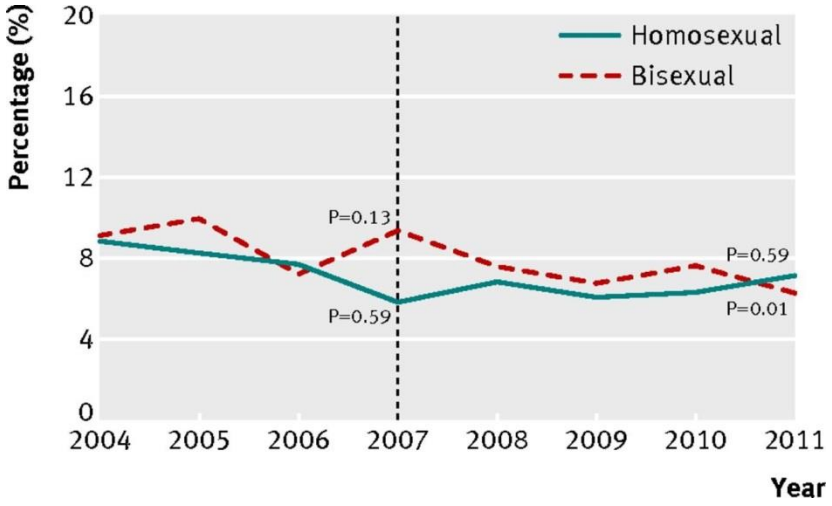
What a vaccine can do – HPV in Australia



Women (vaccine)

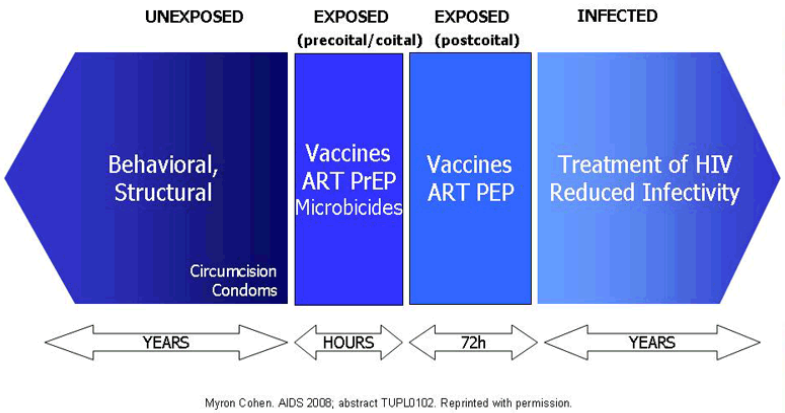


Men (herd immunity)

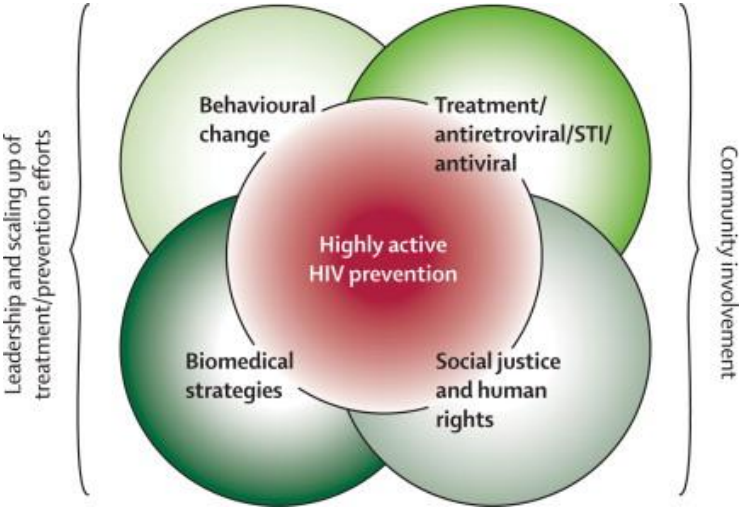


Gay men (no vaccine or herd immunity)

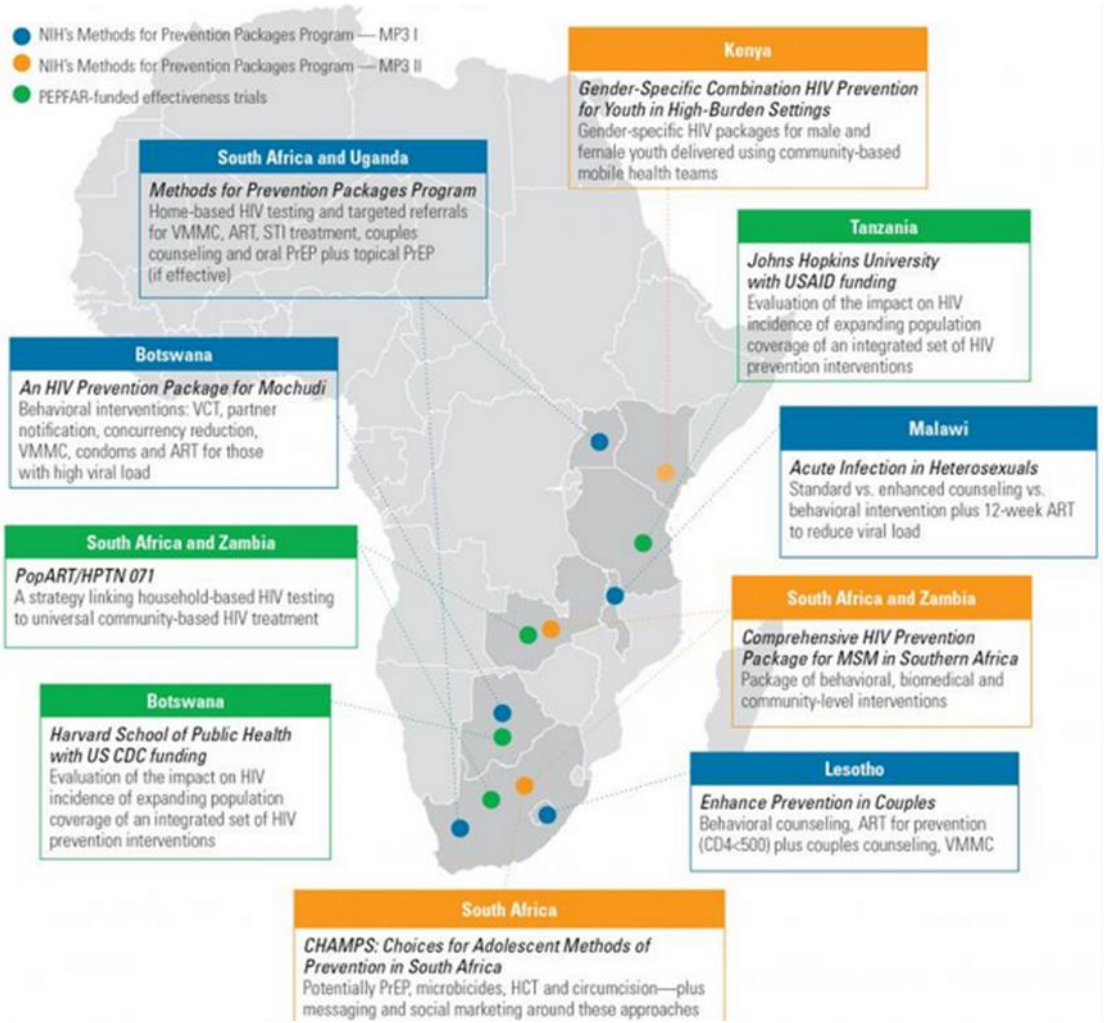
Combination HIV prevention



Myron Cohen. AIDS 2008; abstract TUPL0102. Reprinted with permission.



Coates op.cit. 2008



Parkhurst JO. JIAS 2012, 15(Suppl 1):17367

Community/cluster randomised trials

- Randomise whole communities to have standard of care or standard-of-care-plus
- Measure viral suppression/HIV incidence in geographically separated or adjacent areas
- SOC-plus = ART on diagnosis, home-based testing, comprehensive HIV screening, small local clinic programme, etc
- ANRS12249: POPArt: Botswana CPP: SEARCH: MaxART
- Between them, involve nearly 2 million people: POPArt 1.2 million alone
- Only in generalised epidemic settings in Africa
- Have been criticised for only testing 'one idea at a time'
- How could you do this in a concentrated epidemic setting?

People - and community

Problems with prevention

- **When communities don't do what you expect e.g.**
  - Condom use in western gay men started declining a long time before it was acknowledged
  - Retention rates in option B+, other schemes
  - Low adherence in (some of the) PrEP trials
  - Community myths about HIV
- **When culture works against communities**
  - Criminalisation of PWIDs, MSM, FSW
  - Invisibility/blindness to populations
  - Gender inequality – lack of women's education/empowerment
  - Healthcare system inability to deal with migrants/displaced/social mobility – persecution of same
  - Stigmatisation *of* prevention/healthcare workers
  - Stigmatisation *by* prevention/healthcare workers

Things that matter to doctors and patients

Doctor

- CD4 count
- Viral load
- OIs
- Hepatitis status
- Side effects
- Adherence
- Behaviour change
- STDs
- Onward infections
- Public health?

Patient

- I must take ART because:
  - otherwise I'll have to use a condom and then my partner will know I'm positive
  - I can then prove to my partner that I'm not infectious and she won't insist we use condoms
  - condoms make me lose my erection
  - once I'm on the pills they won't be able to send me back home to where it's not available
  - someone told me HIV gives you cancer
  - it means I'm a good, responsible citizen
  - I want to live long enough to see my son graduate
- I can't take ART because:
  - my partner will see the pills and he'll know I'm positive
  - they're sending me back home and I won't be able to get it and then I'll become drug resistant
- I'm scared to take ART because:
  - if my partner finds out he'll use it to insist we don't use condoms any more
- I mustn't take ART because:
  - someone told me that it makes you impotent
  - someone told me the pills give you cancer
  - my pastor tells me I should trust in God
  - I know I'll forget to and then I'll be twice as ill

‘Choice’ versus Agency

Choice:

- – What you want
- – What you think you want
- – What you body / emotions want
- – What you are addicted to
- – What you are manipulated into wanting
- – What you think you ought to want
- – What you think you ought to *say* you want
- – What you are told to say you want

- **Agency:**
- – The capacity to have power over your destiny

Choice (in western cultures) is seen as belonging to the individual

Agency depends crucially on relationships with others: in the ability to listen and take advice: in the ability to assert and explain one’s needs: in the permission your culture gives you to do this.

Stigma

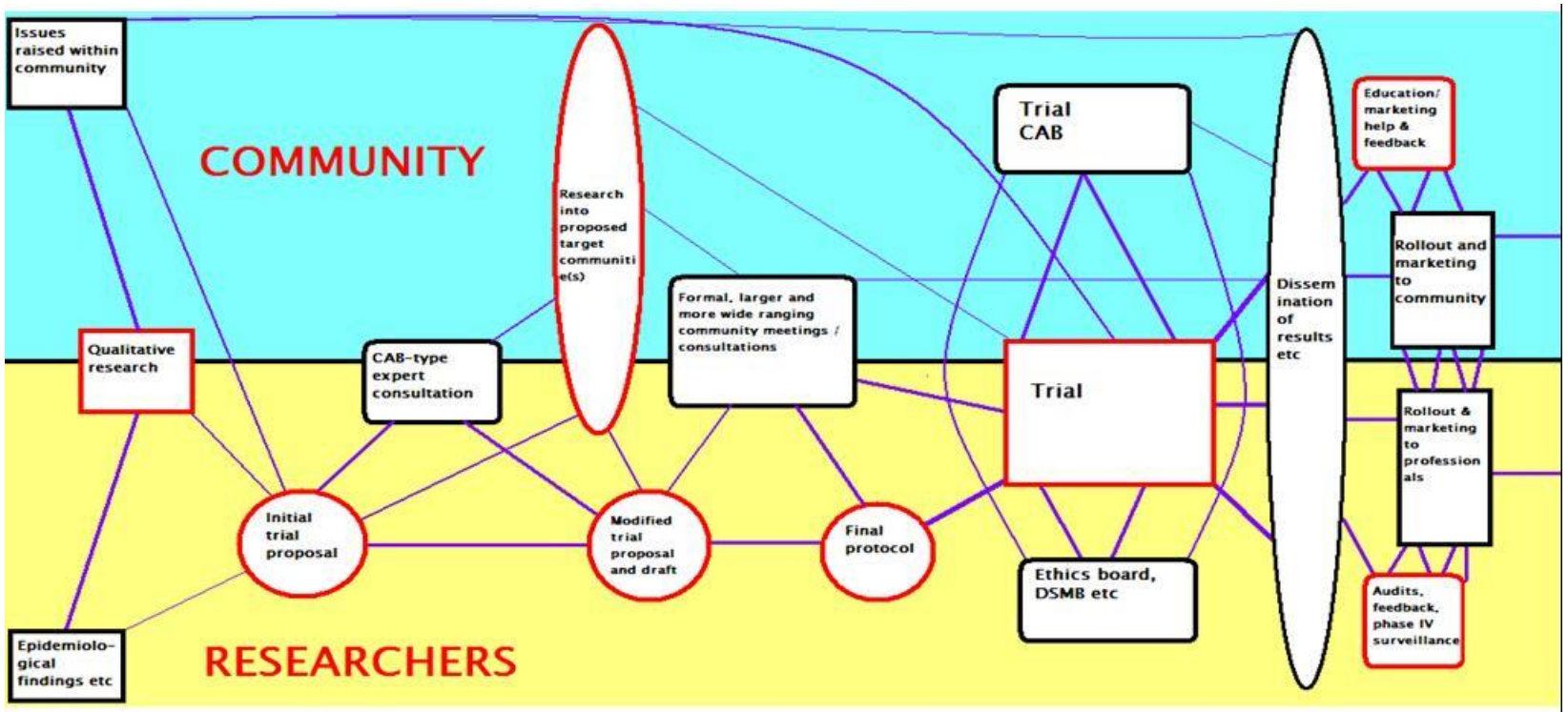
- Is not prejudice: Is not discrimination: is *additional* to these
- Is *transactional*: stigma by other, and stigma of self are intimately linked
- Can be quantified: measuring instruments exist for both stigma and self-stigma
- Has measurable effects: eg people in South Africa with stigmatising attitudes 3x less likely to test for HIV and half as likely to disclose status as others; PLHAs who have unprotected sex without disclosure 50% more likely to hold self-stigmatising attitudes
- Self-stigma is usually worse: in South Africa, while 10% of the general public thought that people living with HIV were 'dirty', 27% of people living with HIV *felt* dirty
- Can be worked with: counselling, CBT, peer support
- Requires cultural and legislative shifts but…
- **…Can only be countered by the person declining to be stigmatised**

- "*The stigmatiser fears becoming the type of person they hate, and the stigmatised person feels [that] shame…It's dependent on the stigmatised person actually giving a damn. That's what's so toxic and unfair about it.*" – *Yusef Azad, Head of Policy, UK National AIDS Trust*

Danger – 'first in, last out'

- We have a pivotal opportunity in the next few years to bring about a permanent downturn in the rate of HIV infections in *all* populations, including key affected populations
- However as HIV prevalence wanes globally, HIV could become ever more concentrated in those key affected populations – unless we meet their needs
- These people will not only continue to have high incidence and prevalence of HIV, that prevalence will become ever more exceptional and *visible*
- In some places, a vicious circle of stigma, discrimination and repression ➔ poorer access to prevention and treatment ➔ higher incidence ➔ more stigma, discrimination and repression could occur.
- There are models of prevention (eg with PWIDs in British Columbia, FSWs in India, PLHAs in Ukraine) that show this cycle can be broken: but it needs community, medical and political leadership.
- Both individuals and communities need to be receptive to, and competent to carry out, HIV prevention, as agents in their own lives

The role of community involvement



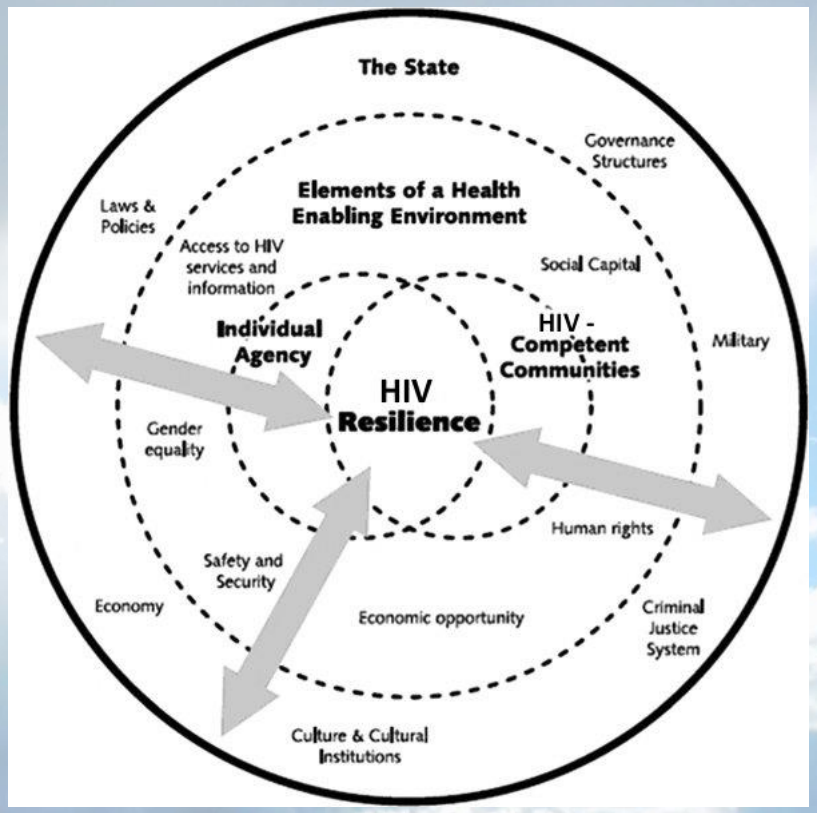
Lines of communication and influence can be bidirectional. Red-bordered boxes are research or have research component.

Originally drawn up as a template for community involvement in prevention trials: but if 'Healthcare providers' replace 'Researchers' can be used as a model for community involvement in any planned and executed treatment/prevention programme

Enablers of combination HIV prevention

- "HIV prevention is an activity that cannot be pursued without making value judgements" – From Parkhurst, J O: *HIV prevention, structural change and social values: the need for an explicit normative approach.* JIAS 15 Suppl 1:1-10. 2012.

- "There is nothing in AIDS that isn't political" – Larry Kramer



Forward to the creation of more HIV-competent communities!