British HIV Association
BHIVA

Professor Kevin Fenton

Public Health England

COMPETING INTEREST OF FINANCIAL VALUE ≥ £1,000:	
Speaker Name	**Statement**
Prof Kevin Fenton	None
Date	**November 2013**

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The Resurgent Global HIV Epidemic among Men who have sex with Men.

Professor Kevin Fenton, MD, PhD, FFPH
National Director of Health and Wellbeing

Public Health England

BHIVA, 2013

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Overview

i. Epidemiological context

ii. Multi-level epidemic determinants

iii. Enhancing MSM HIV prevention

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Global epidemiology of HIV among MSM

- HIV epidemic spread among MSM is occurring in both high, middle and low income settings
- MSM HIV epidemics are underway in Latin America, Asia, Eastern Europe/FSU, and Africa
- HIV epidemics among black and Hispanic MSM are growing in the U.S.
- Many MSM epidemics are occurring in “hidden” contexts of discrimination, stigma, criminalization, rights abrogation and limited HIV surveillance

Van Griensven et al. Current Opinion in HIV and AIDS 2009;4:300-307.

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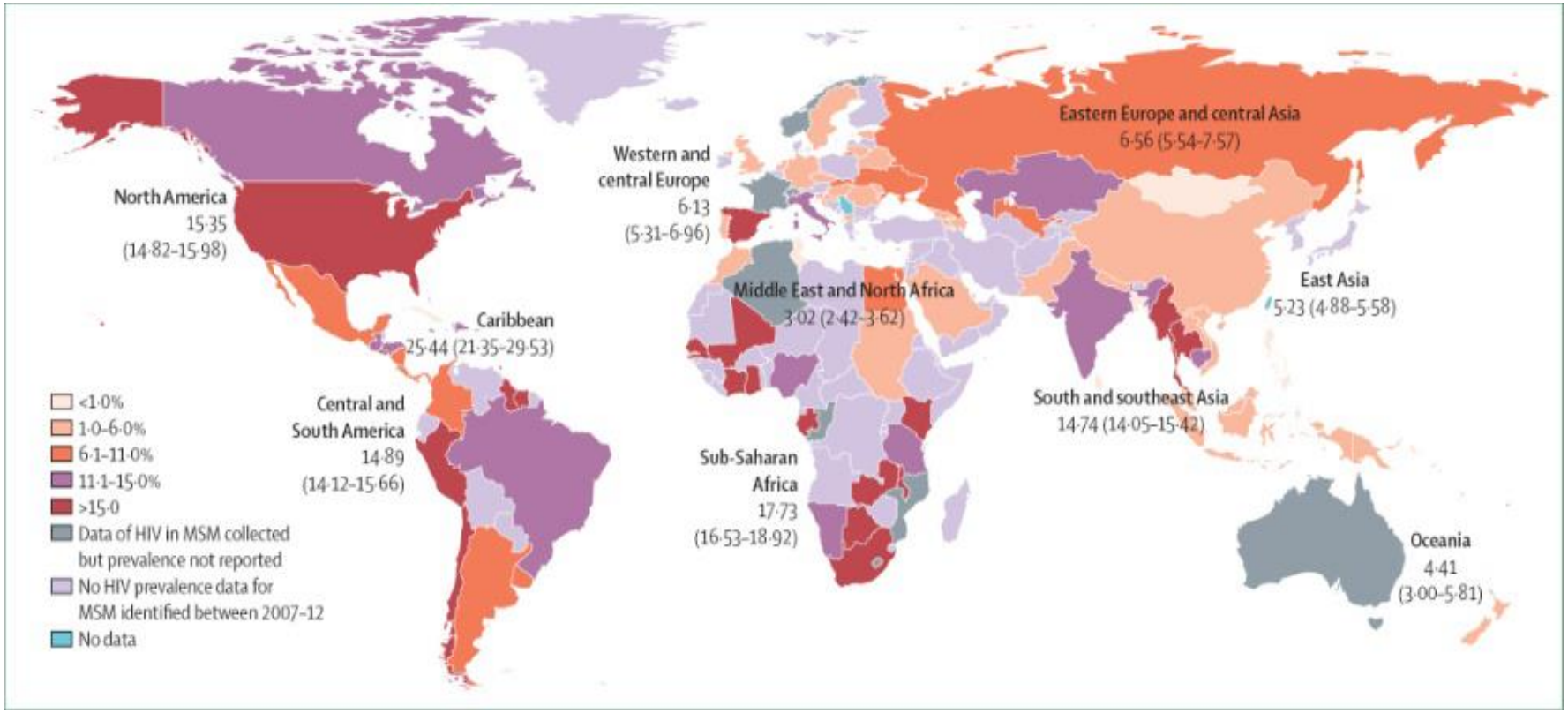
Global HIV prevalence among MSM, 2007-2011



Source: Beyrer, Baral, van Griensven, Goodreau, Chariyalertsak, Wirtz, Brookmeyer, *The Lancet,* 2012

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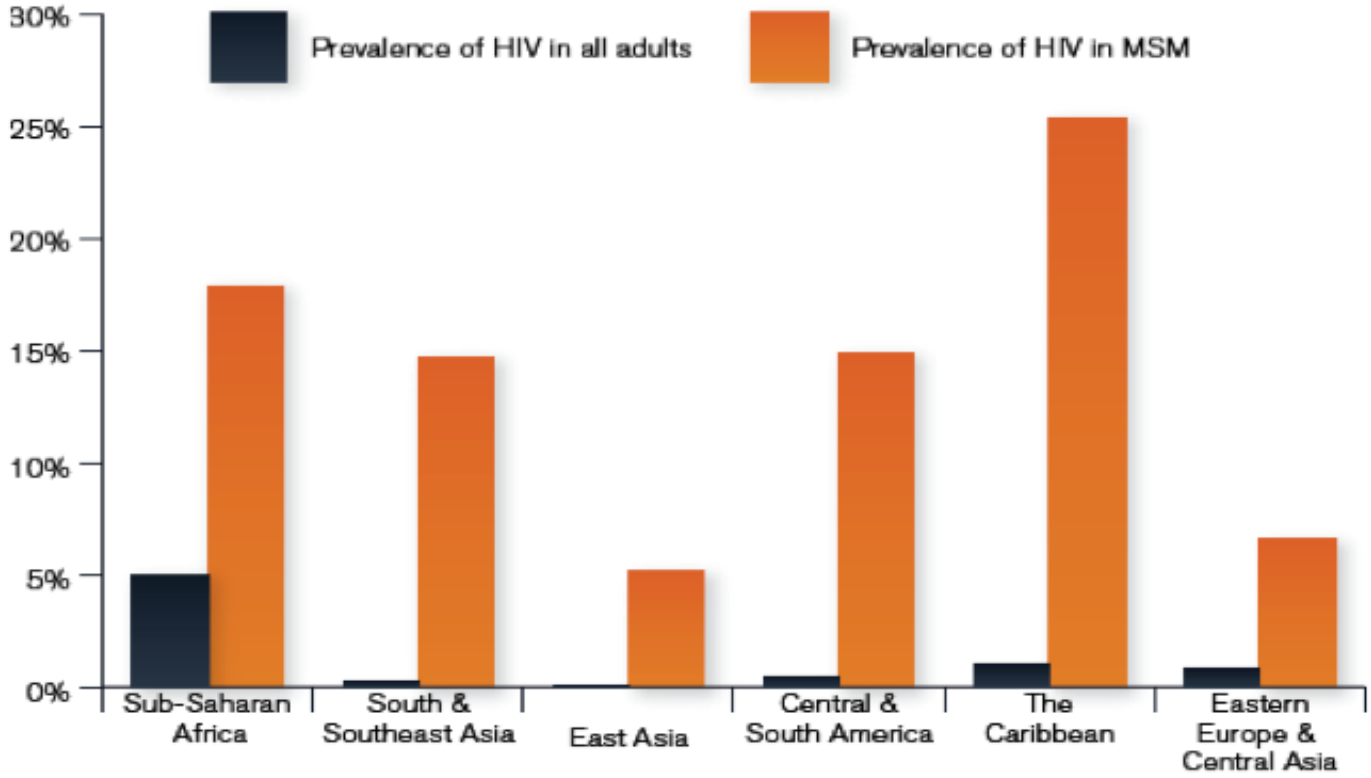
Gay and other MSM bear disproportionate burden of the HIV epidemic in virtually every country that reports reliable HIV data



Prevalence of HIV in MSM compared with regional adult prevalence reported by UNAIDS, 2010[1]

Source: Beyrer, Baral, van Griensven, Goodreau, Chariyalertsak, Wirtz, Brookmeyer, *The Lancet,* 2012

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HIV Prevalence among MSM in LMIC

Elevated Risk for HIV Infection among Men Who Have Sex with Men in Low- and Middle-Income Countries 2000–2006: A Systematic Review

Stefan Baral[1,2,3], Frangiscos Sifakis[1,2], Farley Cleghorn[4], Chris Beyrer[1,2*]

- Comprehensive literature review of HIV infection rates among MSM
- MSM were **19 times more likely** to have HIV than the general population
  - Almost 8 times higher in low-income countries
  - More than 23 times higher in middle-income countries
  - Higher rates observed among MSM in all regions

PLOS Medicine 2007;4:1901-1911

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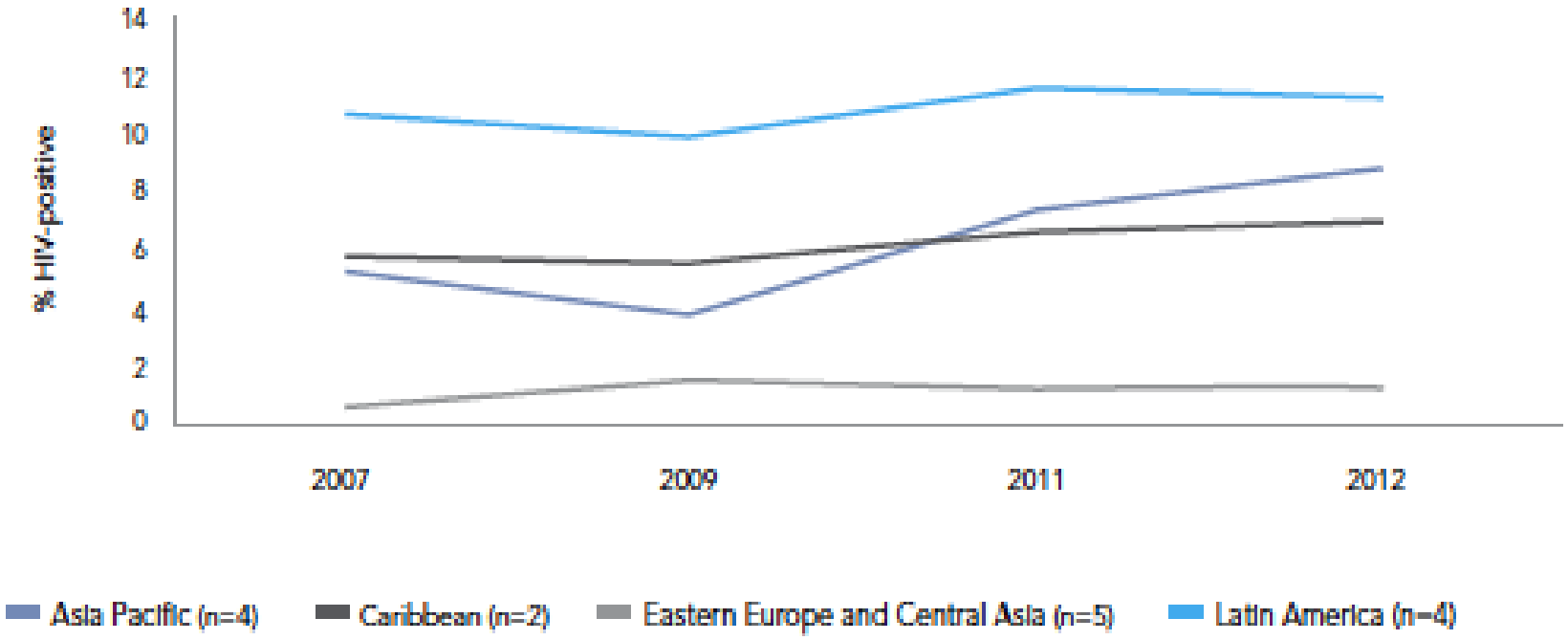
HIV median prevalence among men who have sex with men, by region, 2007–2012*



Source: UNAIDS, 2012

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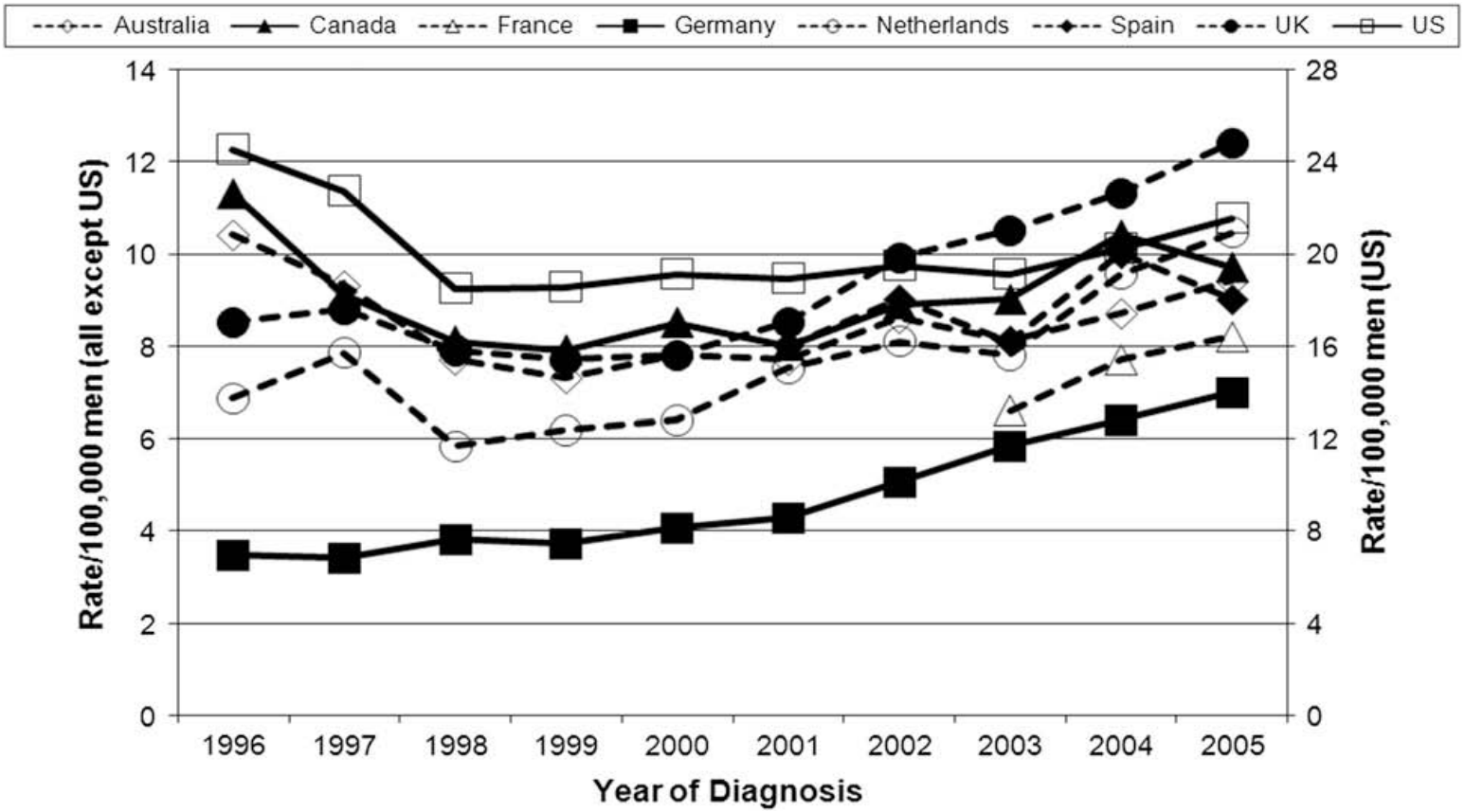
HIV diagnoses among MSM in Western Industrialized Countries



Source: Sullivan, et al, 2009. Reemergence of the HIV Epidemic Among Men Who Have Sex With Men in North America, Western Europe, and Australia, 1996–2005

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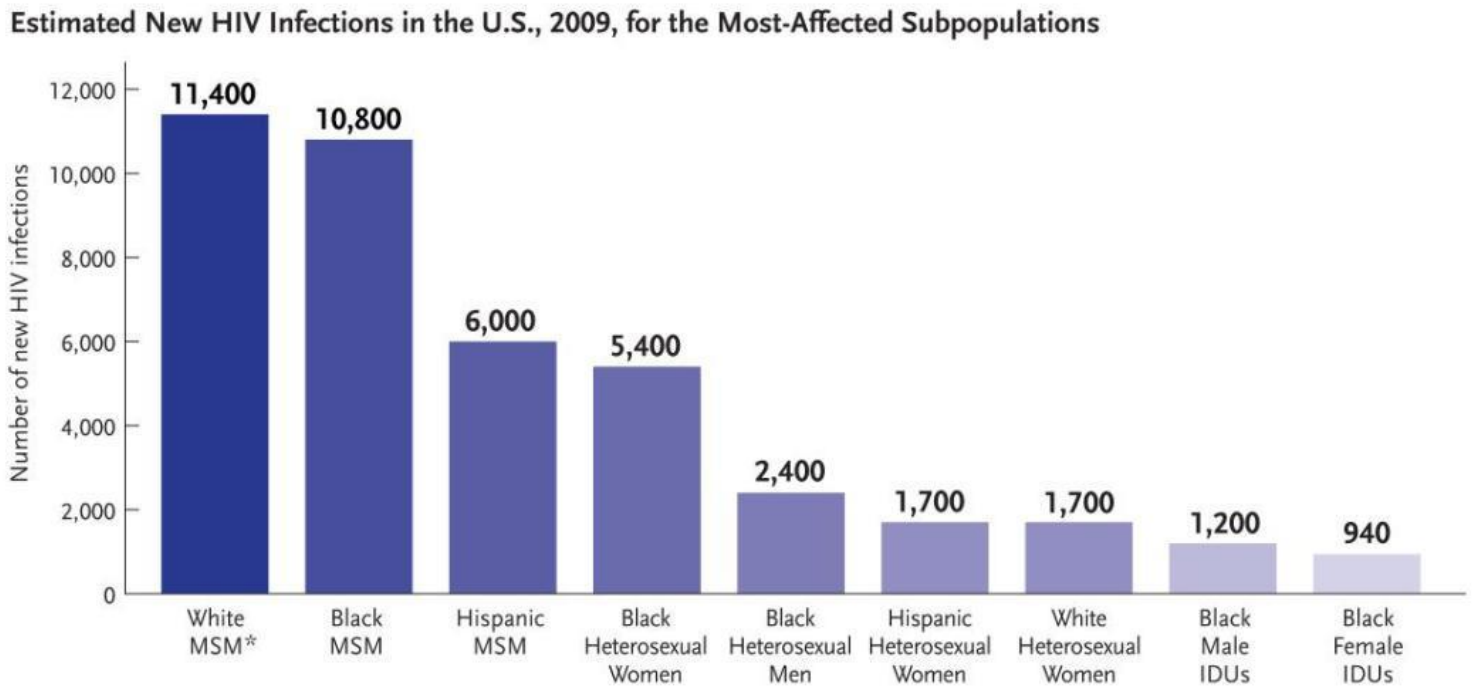
HIV Incidence by Transmission Category, United States, 1980-2009

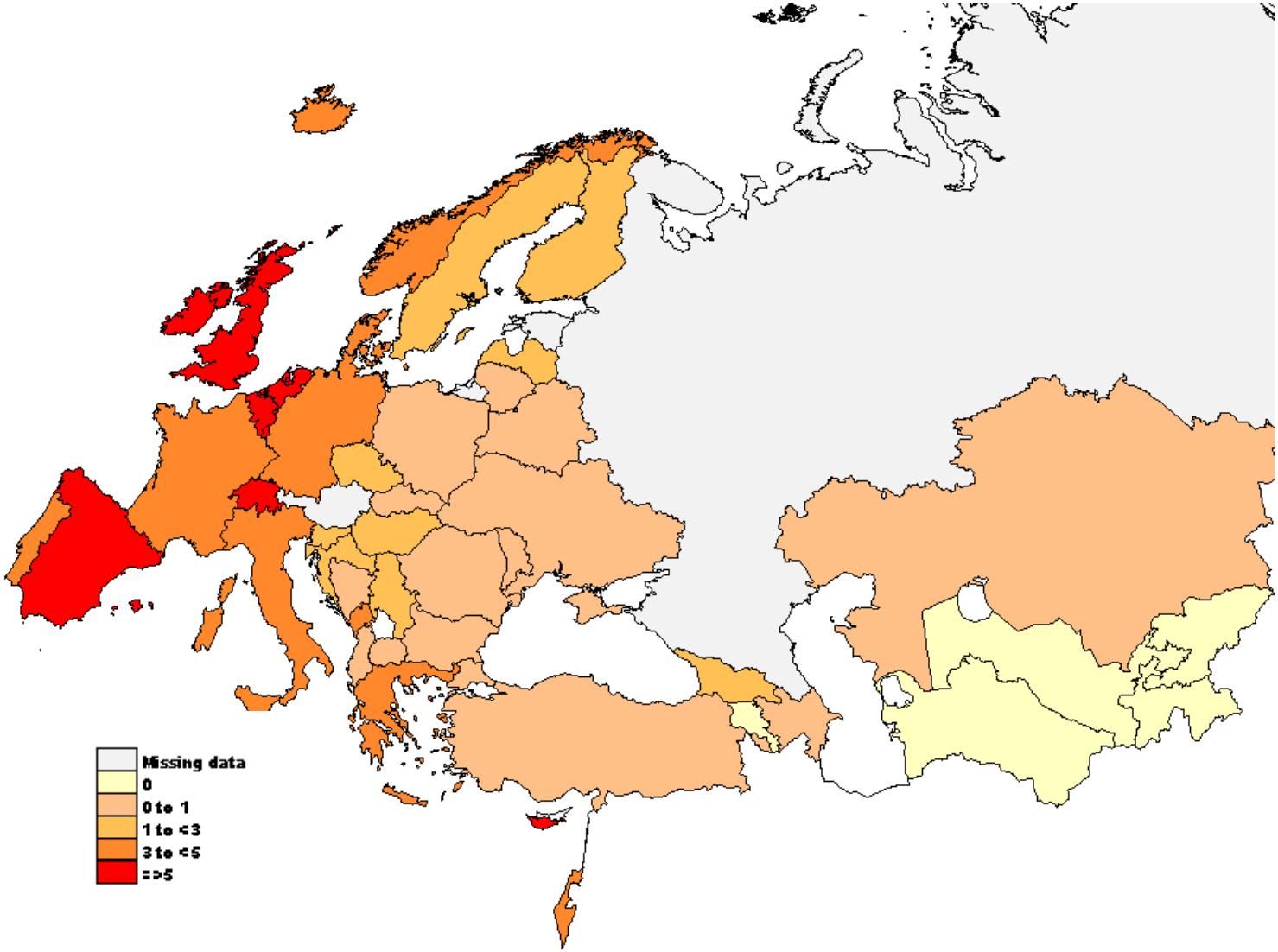


*The term men who have sex with men is used in CDC surveillance systems because it indicates the behaviors that transmit HIV infection, rather than how individuals self-identify in terms of their sexuality.

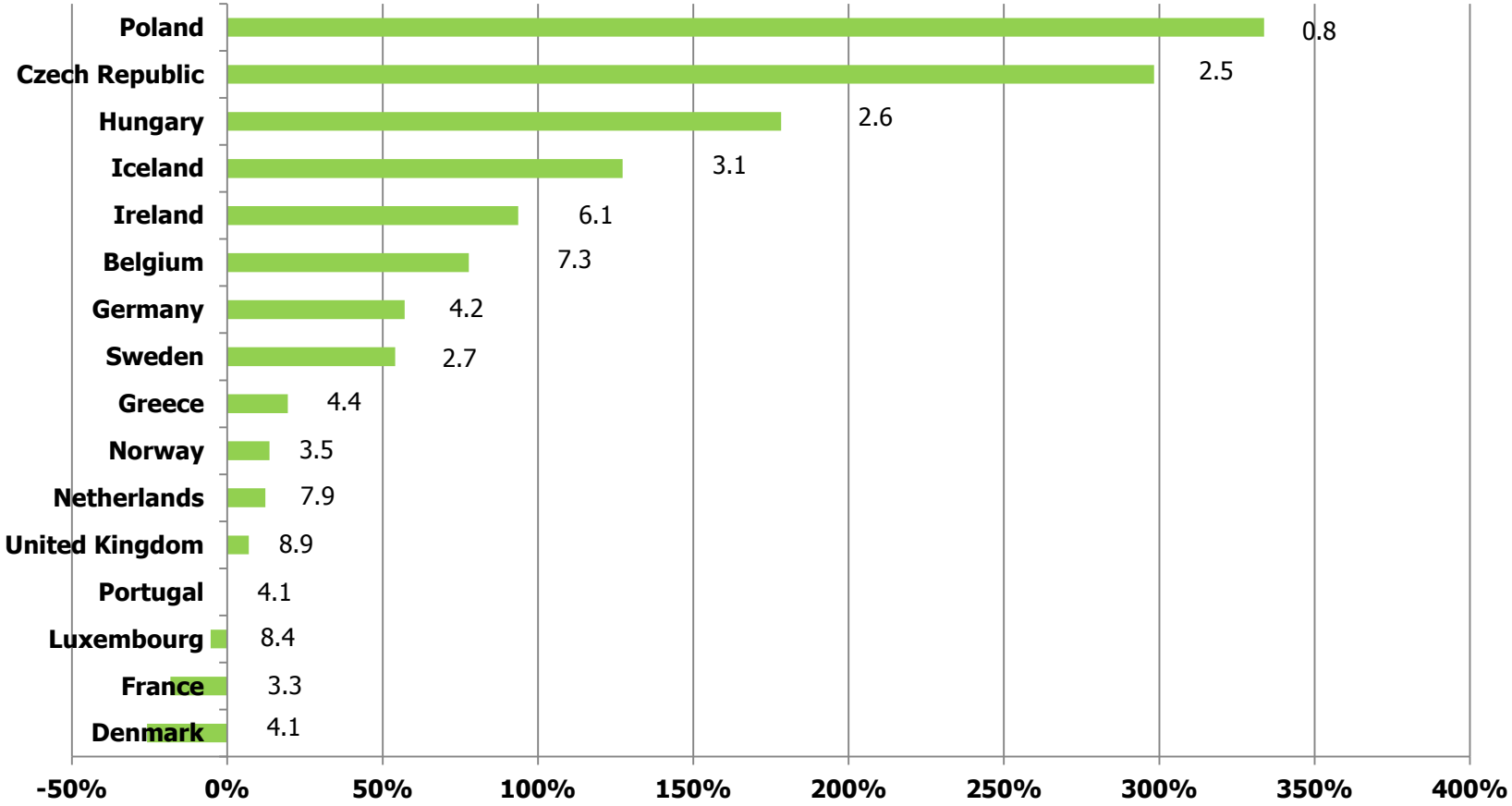
Source: CDC

Source: Centers for Disease Control and Prevention, 2012

HIV infections, per 100 000 male population reported for 2010 in MSM



HIV infections among MSM in EU/EEA
Proportional change 2004-2010



Data labels = rate per 100,000 male population

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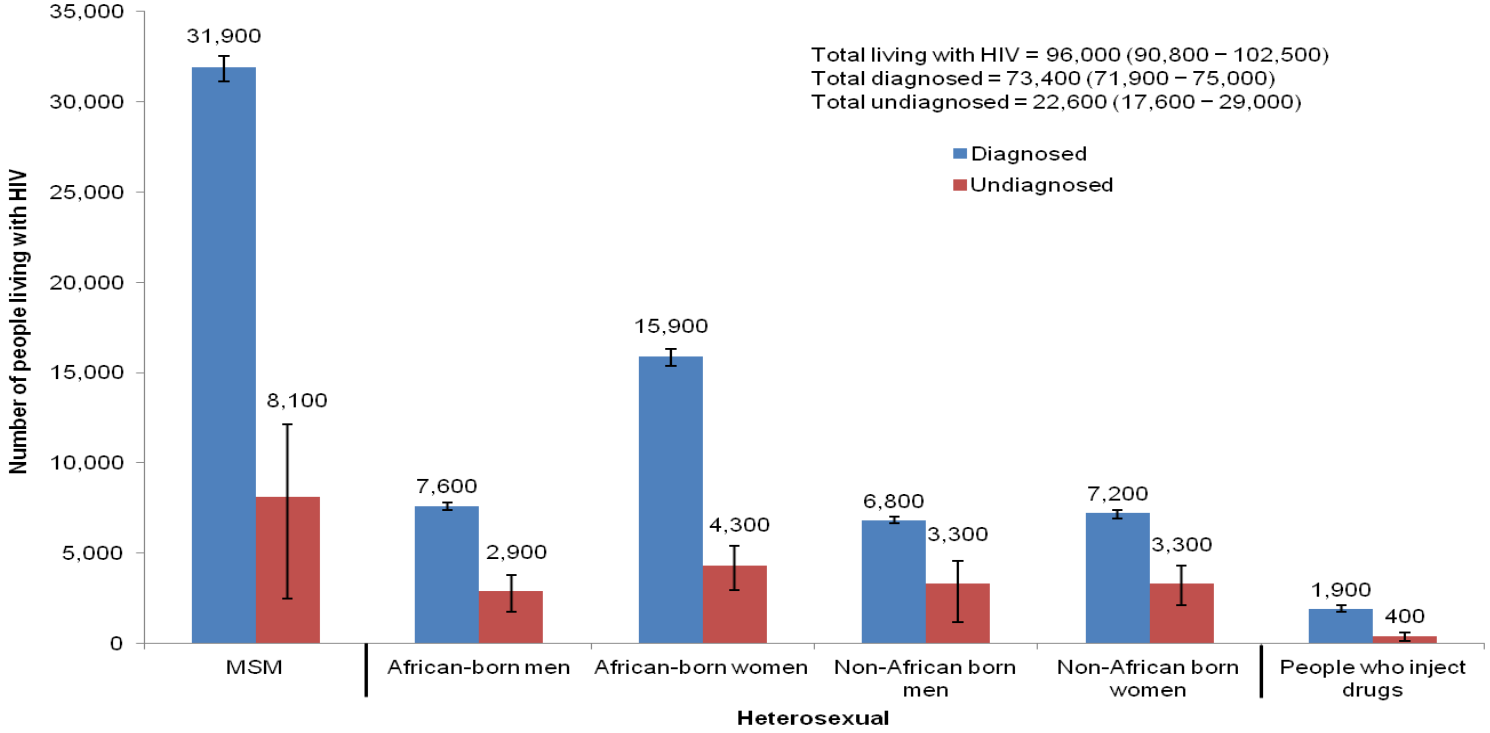
Estimated number of people living with (both diagnosed and undiagnosed) HIV infection in the United Kingdom: 2011



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Estimated annual HIV incidence in MSM: England and Wales, 2001-2010

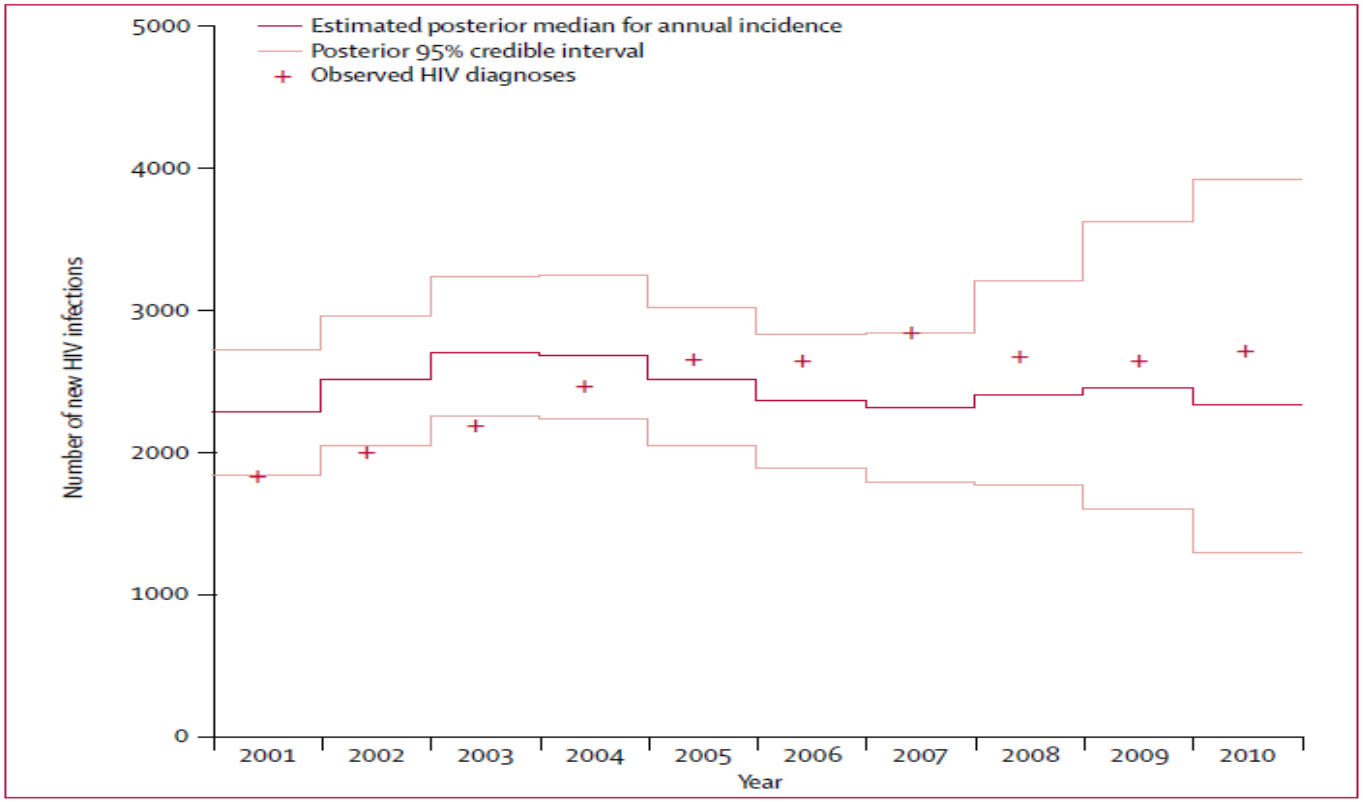

Figure 1: Annual numbers of new HIV infections for men who have sex with men in England and Wales

Birrell P.J. *et al*. HIV incidence in men who have sex with men in England and Wales 2001–10: a nationwide population study. *The Lancet ID* 2013

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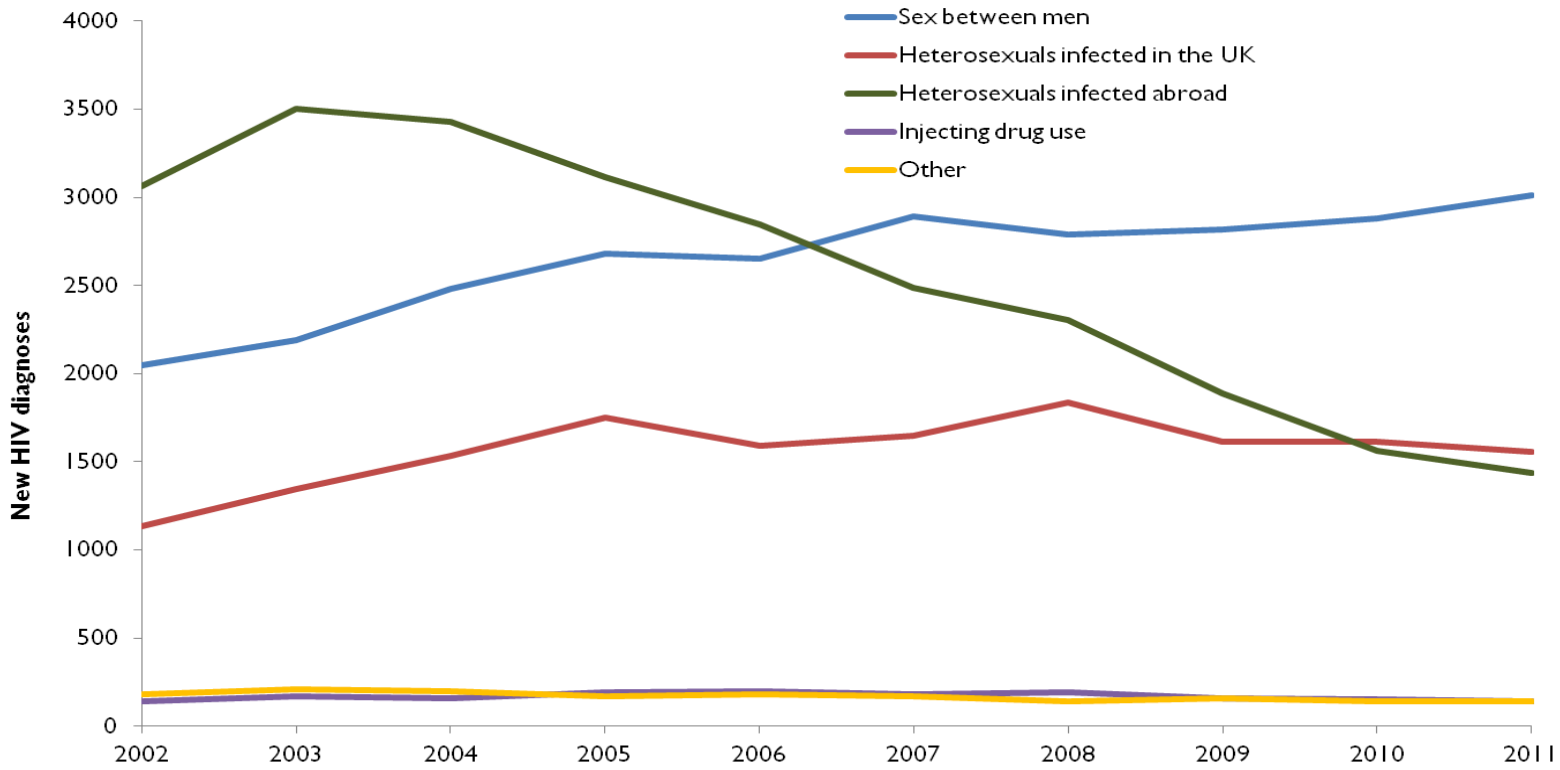
New HIV diagnoses by exposure group: United Kingdom, 2002 – 2011



[1] Data adjusted for missing exposure group information

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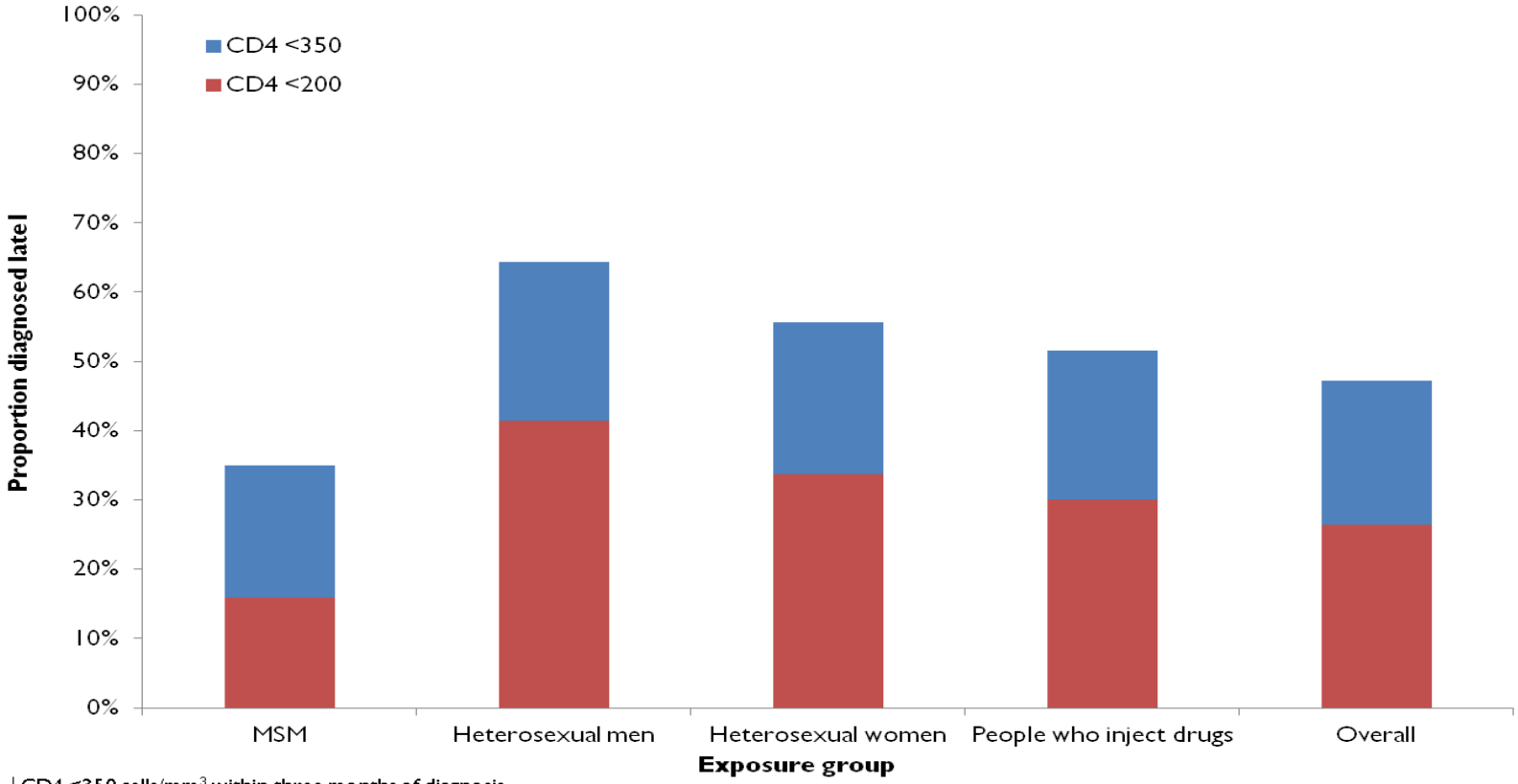
Late diagnosis of HIV infection by exposure group: United Kingdom, 2011



[1] CD4 <350 cells/mm^3 within three months of diagnosis

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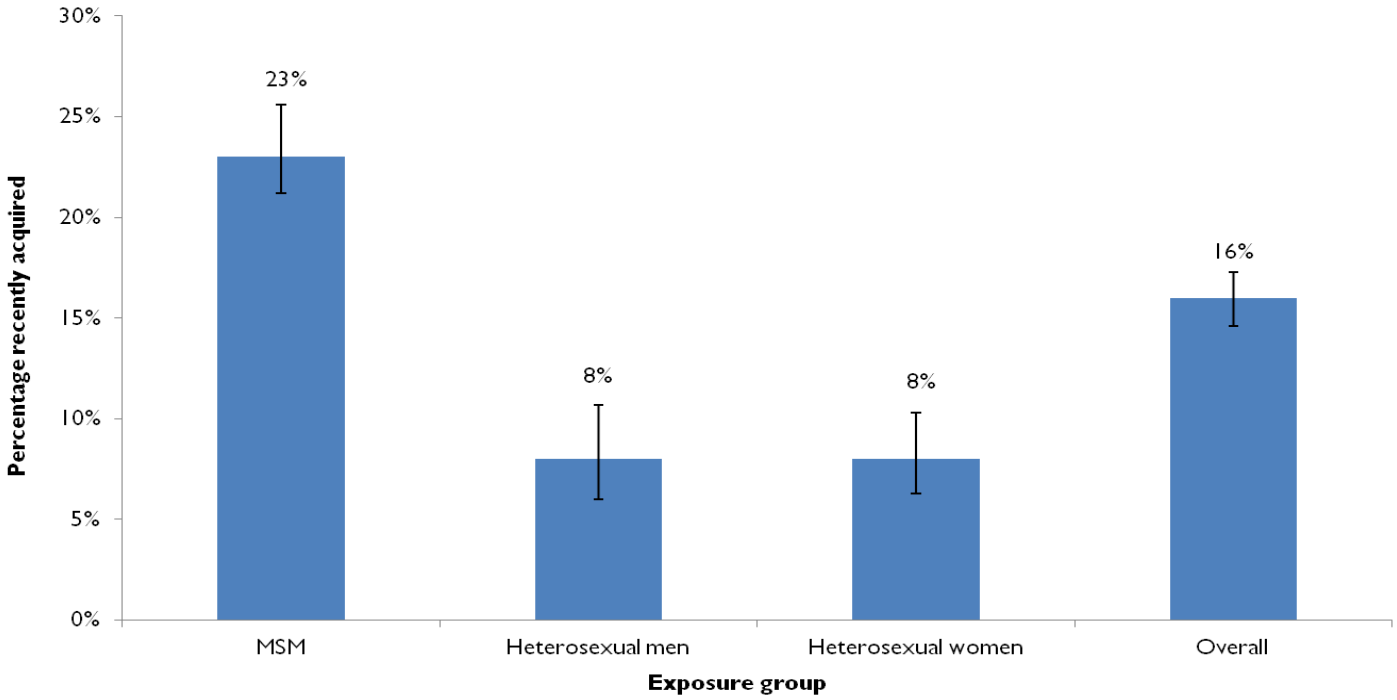
Recently acquired infections among people newly diagnosed with HIV by exposure group: England, Wales and Northern Ireland, 2011



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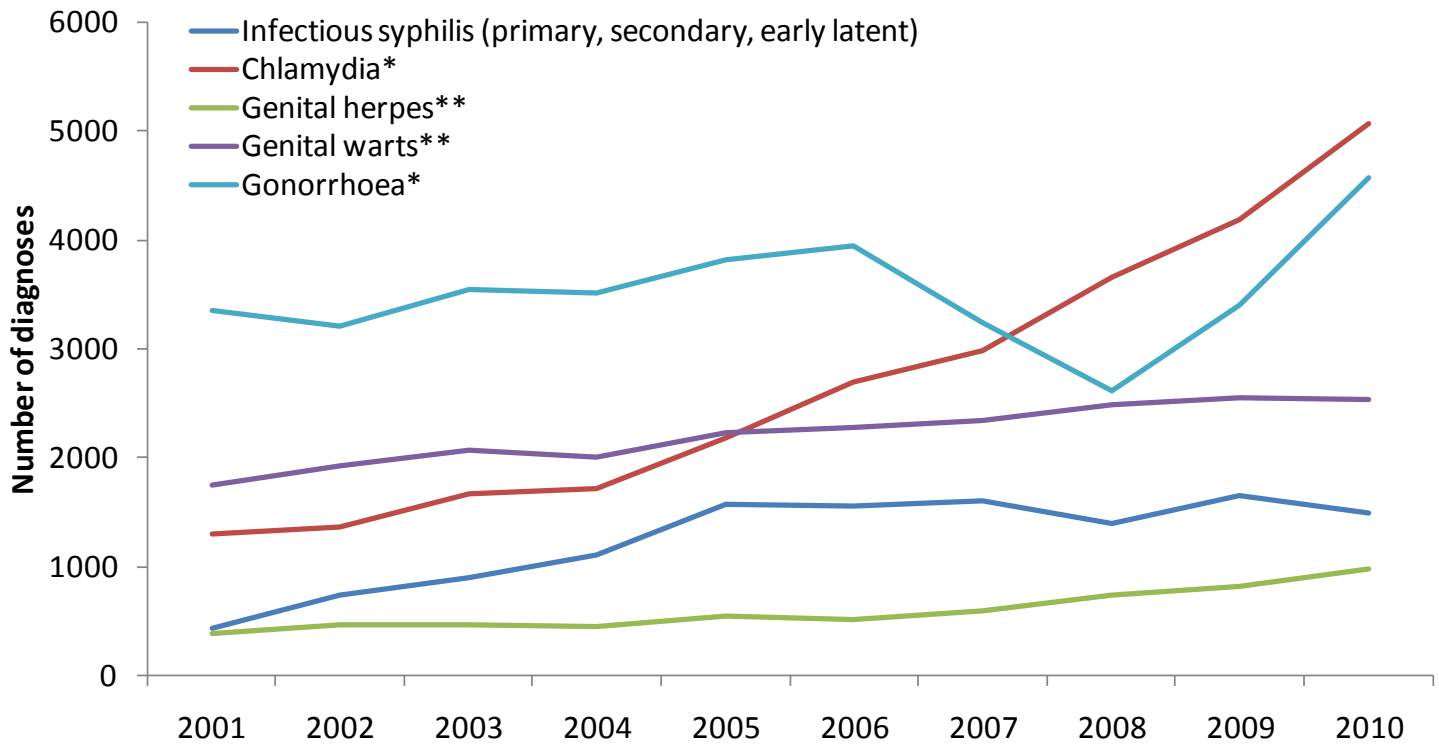
Selected STI diagnoses among MSM: England 2001-2010



STI data (except HIV) from sexually transmitted clinics
* uncomplicated, complicated ** first attack

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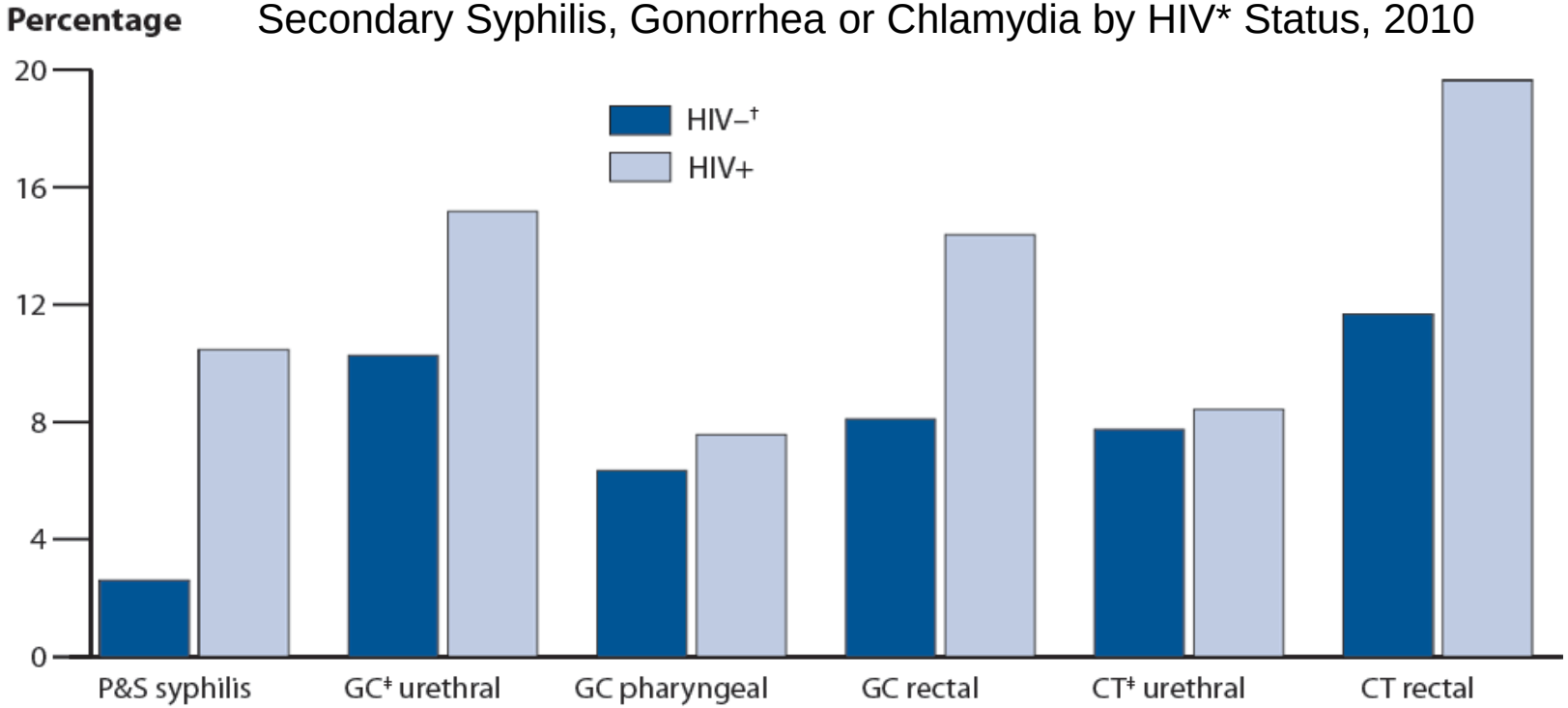
High Rates of HIV and STI co-infection among MSM, United States 2010

Proportion of MSM* Attending STD Clinics with Primary and Secondary Syphilis, Gonorrhea or Chlamydia by HIV* Status, 2010



Source: CDC,STD Surveillance Network SSuN 2010

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Health disparities affecting MSM

- There is growing recognition that MSM are at risk for multiple health disparities
- These disparities are the result of combinations of individual, cultural, behavioral, and biomedical factors as well as discrimination, and stigma
- Childhood sexual abuse, substance use, mental health disorders, STDs, and partner violence exist at higher levels among MSM, and associated with HIV risk
  - The combined effects of these problems may be greater than their individual effects

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Black MSM Diaspora Systematic Review and Meta-Analysis

- Systematic review and meta-analysis of black MSM HIV epidemics across the African Diaspora
- Data from 71 studies across the globe representing 129,976 black MSM
- Assessed HIV prevalence disparities among black MSM relative to general populations (low and middle income countries) and general black populations (low and middle income countries)

(Millett et al., 2012)

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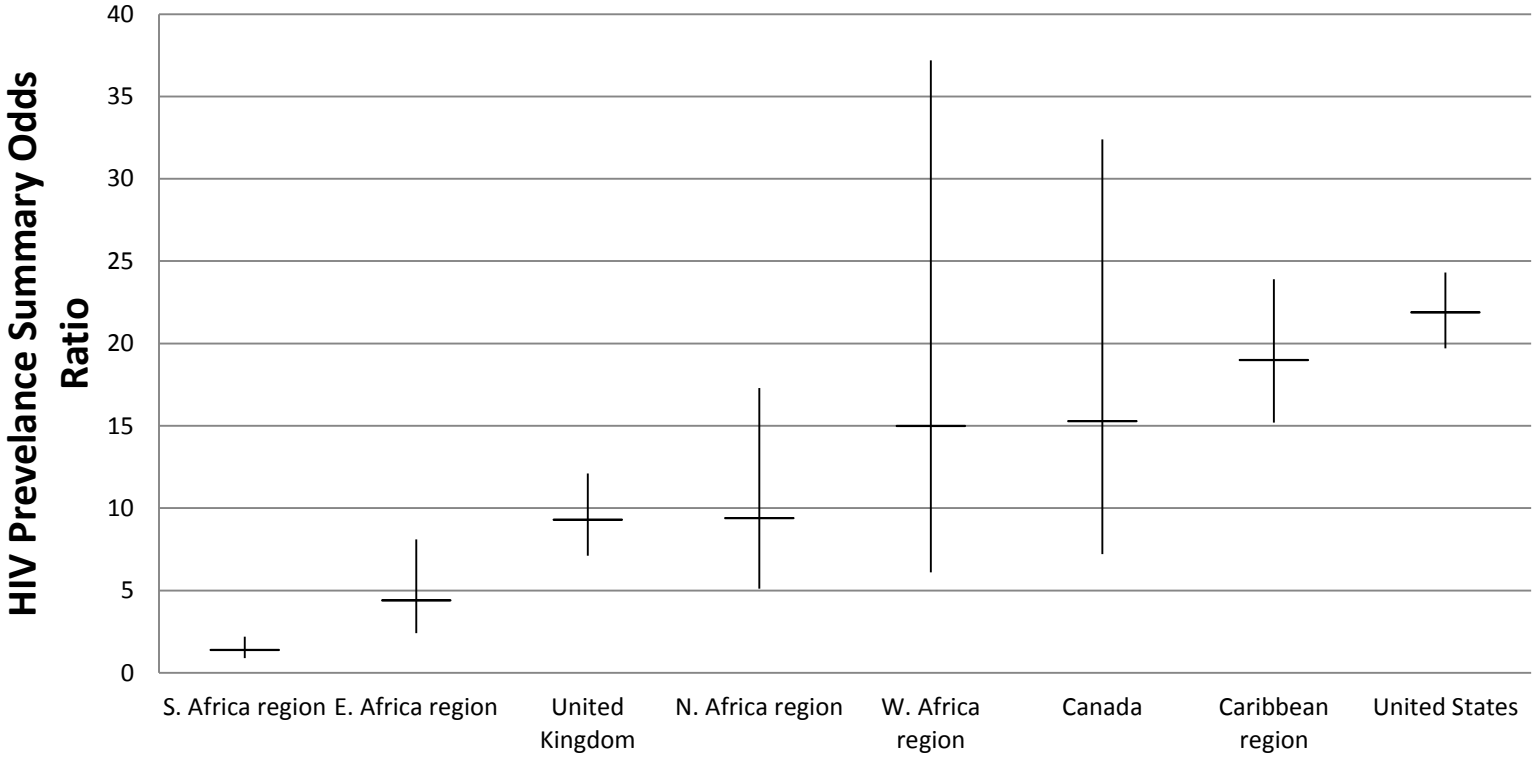
Black MSM vs. Black General Populations by Region/ Country



(Millett et al., 2012)

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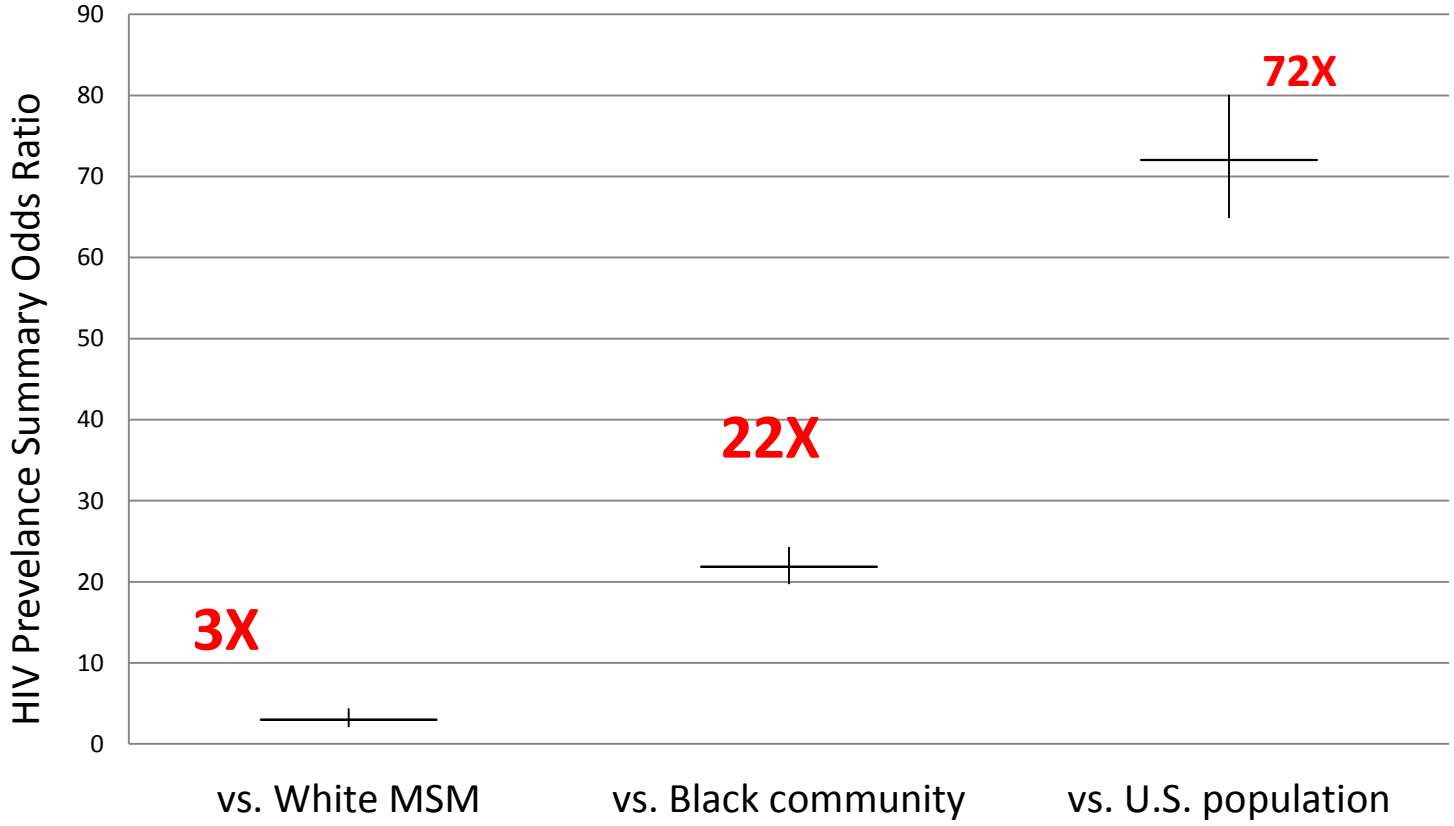
U.S. Black MSM vs. U.S. White MSM, U.S. Black Population, and U.S. Population



(Millett et al., 2012)

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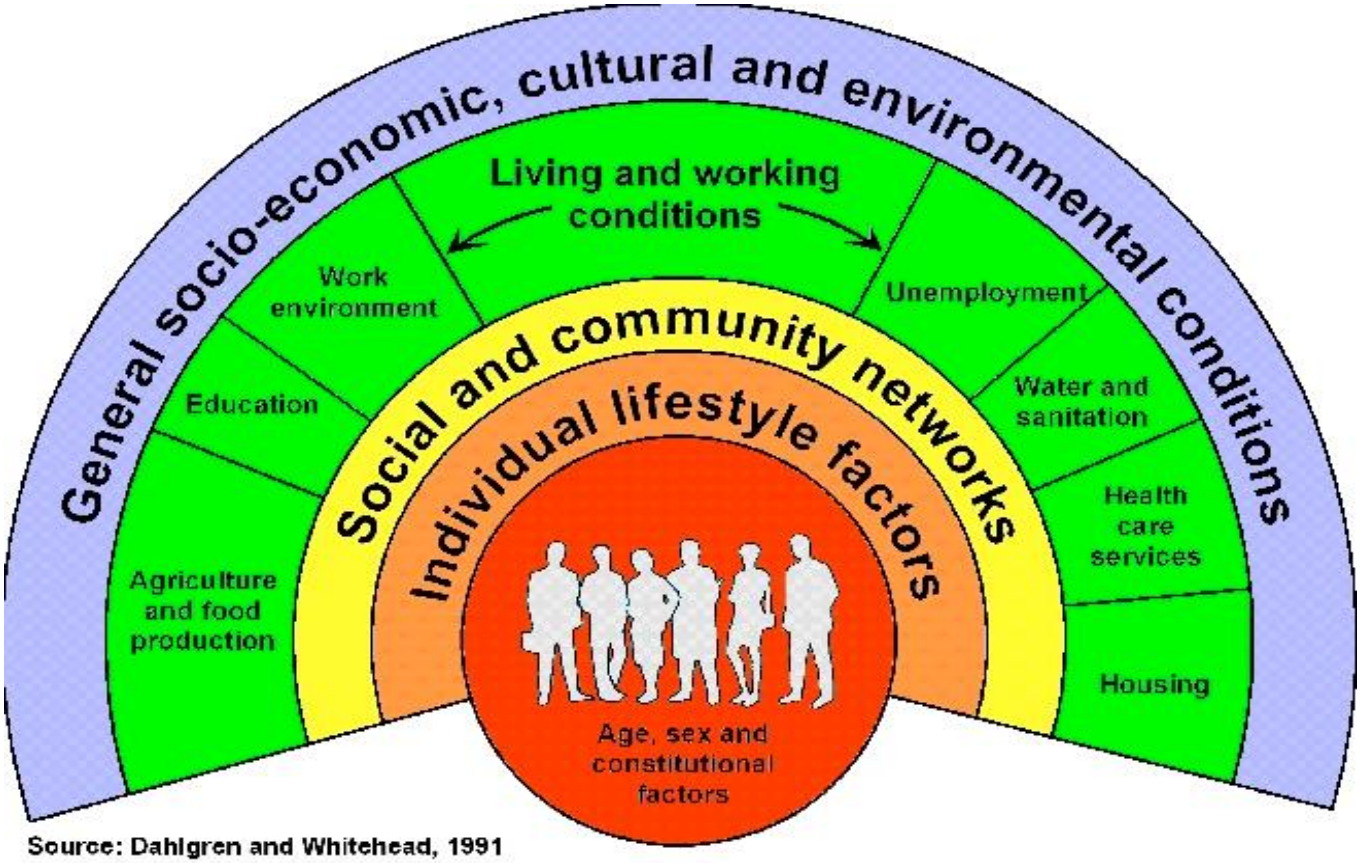
What's driving these changes?



Source: Dahlgren and Whitehead, 1991

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What's driving these changes?

1. Individual level risks

- Biological and behavioural risks

2. Network level risks

- Network size and density

3. Structural risks

- HIV criminalization, stigma, discrimination in health care system

Source: Beyrer, Baral, van Griensven, Goodreau, Chariyalertsak, Wirtz, Brookmeyer, The Lancet, 2012

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Driving factors?

Biological factors driving HIV transmission

- The high probability of transmission per act through receptive anal intercourse has a central role in explaining the disproportionate disease burden in MSM
  - **Per-act transmission probability of HIV in Anal Sex**
    - 1.4% per-act (95% CI 0.2-2.5)
    - 18-fold greater per-act probability than in vaginal sex
  - **Per-partner HIV transmission probability with**
    - Unprotected Receptive Anal Intercourse only
      40.4% (Range 6.0-74.9)
    - Unprotected Receptive and Insertive Anal Intercourse
      39.9% (Range 22.5-57.4)

Source: Beyrer, Baral, van Griensven, Goodreau, Chariyalertsak, Wirtz, Brookmeyer, *The Lancet,* 2012

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Driving factors?

Molecular epidemiology of HIV-1 among MSM

- Molecular epidemiological data show substantial clustering of HIV infections in MSM networks, and higher rates of dual-variant and multiple-variant HIV infection in MSM than in heterosexual people in the same populations.
- Characteristics of HIV-1 phylogenetics among MSM
  - Faster spread in networks than among heterosexuals
  - Marked clustering of HIV infection in “bursts” of transmission

    25% linkage of HIV in clusters among MSM compared to 5% in heterosexuals
  - MSM more than twice as likely as heterosexuals to have multiple HIV variants. 38% of US MSM have multiple circulating HIV variants

Sources: Beyrer, 2012; Lewis F et al, 2008; Li et al, 2010.

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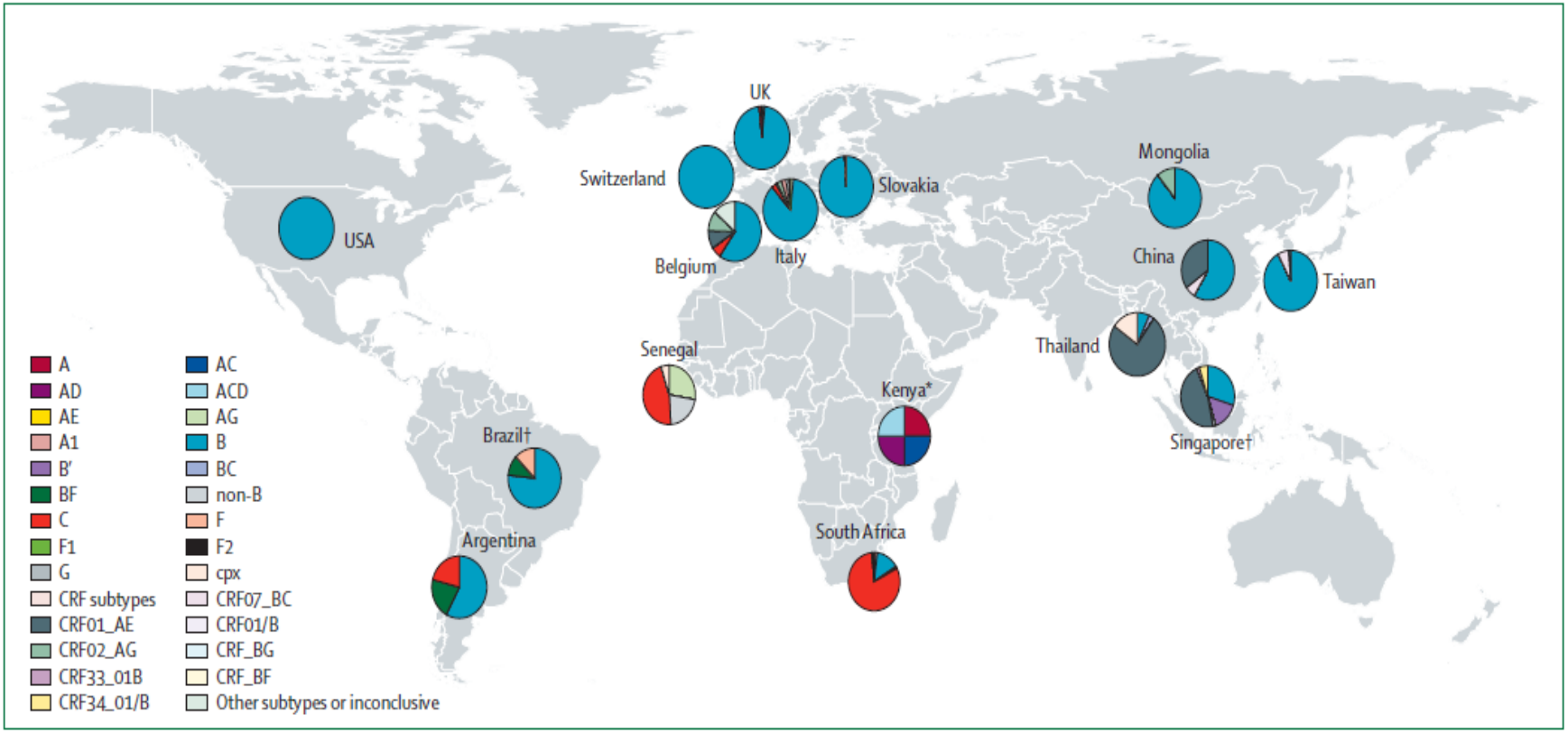
Molecular epidemiology of HIV subtypes in MSM, 20067-2011



Source: Beyrer, Baral, van Griensven, Goodreau, Chariyalertsak, Wirtz, Brookmeyer, *The Lancet,* 2012

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Driving factors?

Changing behavioral 'Risk' among MSM

- CDC NHBS data (2011) risk behavior not associated with new diagnosis.
- Some MSM may not be individually risky, but select partners from high prevalence pools (e.g. Black MSM)
- Estimated 68% of HIV transmissions among MSM is sex with main partners
  - Higher number of sex acts with main partners and lower condom use (Sullivan, AIDS, 2009)

Source: Beyrer, Baral, van Griensven, Goodreau, Chariyalertsak, Wirtz, Brookmeyer, *The Lancet,* 2012

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Driving factors?

STIs and Sexual risk behaviours

- Specific practices put MSM at risk for diverse STIs
  - Anal sex: HIV, rectal GC/CT, HBV, HPV, HSV;
  - Anal trauma →HCV, Syphilis, LGV
  - Oral sex: Syphilis; Penile sex: HPV, HSV;

- Epidemiologic synergy with other STIs
  - Syphilis: ↑ associated with HIV+ serosorting and substance use
  - GC and CT: Frequently asymptomatic rectal infections
  - Increasing MDR GC, including quinolone resistance
  - HSV2: More common among MSM and facilitates HIV transmission. Acyclovir prophylaxis was not effective

 Source: Heffelfinger, AJPH, 2007; Kalichman, STI, 2011; Buchacz, AIDS, 2004; Kent, Clin Inf Dis, 2003; Annan, STI, 2009; Gunn, STD, 2007; Taylor, Clin Inf Dis, 2011; Szumowski, Clin Inf Dis, 2009; Chin-Hong, J National Cancer Inst, 2005; Workowski, MMWR, 2010; Moreira, Hum Vaccin, 2011; Cranston, STI, 2008; Kaplan, MMWR, 2009

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Driving factors?

Gay men's socialization and resilience

- Same sex behavior and gender non-conformity **stigmatized**
- Societal messages remind MSM youth they are **not accepted**
- MSM Youth may encounter loss of friends, non-support from families, religious **abandonment**, and verbal or physical abuse, resulting in adverse health outcomes
- External stigma may → internalized homophobia → depression, substance use
- In many western settings, minority MSM are less comfortable with disclosing their MSM identity; Role of **dual stigma**?

31 Source: Mayer et al, 2012;Harrison, J Sch Health, 2003; Drasin, J Homosex, 2008; D'Augelli, Clin Child Pysch, 2002; Grov, J Sex Res, 2006) (Merighi, Jour Contemp Human Serv, 2000; Butler, J Homosex, 2008; Rosario, Cult Divers Ethnic Minor Psych, 2004; Murdock, Psych in the School, 2005; Beyrer, Epidemiol Rev, 2010)

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Driving factors?

Substance Use

- Many studies suggest that substance use is common
  - Among substance using MSM, poly-drug use is common
  - Smoking rates range from 27 to 66%, higher than matched controls
  - Heavy alcohol use (14-39%) though lower than general population
  - Episodic recreational use is common; drug addiction is uncommon

- There are many reasons why gay men use substances
  - Coping with homophobia, depression/anxiety
  - Substance use may ↑ libido, sense of invulnerability; impair negotiation skills, select high risk network partners
  - Substance use lowers pain thresholds, allowing for more traumatic sex, and possibly impairing host immunity

(Stall, AJPH, 1999; Ryan, Am J Prev Med, 2001; Greenwood, Drug Alcohol Dep, 2001; Ostrow, JAIDS, 2010; Mimiaga, AIDS Pt Care STDs, 2008Colfax, Lancet, 2010; van Griensven, J Int AIDS Soc, 2010; Johnston, Int J Drug Pol, 2010; Bautista, STI, 2004; Parry, Drug Alcohol Dep, 2008; Koblin, AIDS, 2006; Cochran, Sub Use Misuse, 2007; Shoptaw, J Sub Abuse Treat, 2008; Mausbach, Drug Alcohol Depend, 2007; Mansergh, PL0S Med, 2010)

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Driving factors?

Mental Health Issues

- 40% of MSM become depressed, 2X the lifetime rate of heterosexual men
- Predictors of major depression are: not having a partner, experiencing anti-gay threats or violence, non- identification as gay
- Panic disorder, social phobia, generalized anxiety disorder are more common among MSM (20% lifetime incidence)
- Culturally-tailored treatment may involve groups that enhance community identification

 (Sandfort, Arch Gen Psych, 2001; Gilman, AJPH, 2001; Lewis, Health Place, 2010; Safren, Health Psychology, 2012)

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Driving factors?

Resilience in the Face of Stressors

	No. of Psychosocial Health Problems*			
	0 (*n* = 1,392)	1 (*n* = 812)	2 (*n* = 341)	3 or 4 (*n* = 129)
Recent high risk sex	**7%**	**11%**	**16%**	**23%**
HIV prevalence	**13%**	**21%**	**27%**	**22%**

All associations have *p*'s < 0.001. All *p* values are two-tailed.

From Stall et al., 2003

* Childhood sexual abuse, depression, substance use, intimate partner violence

(Stall, Addiction, 2001; Mills, Am J Psych, 2004; Greenwood, AJPH, 2002; Mustanski, Ann Behav Med, 2007; Friedman, AIDS and Behavior, 2008)

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Driving factors?
Culturally Competent Care

- MSM often receive suboptimal care and are often reluctant to disclose to providers because of fears of stigmatization
- Many health care providers are unaware of the diversity of MSM and their different acute and chronic health conditions
- Ironically, health care providers may be uniquely able to assist MSM in their coming out process because of their social role
- Culturally-competent care is a basic human right, and is essential for optimal clinical management

35 Sources: Mayer et al, 2012; Gonser, J Cult Divers, 2000; Meyer, AJPH, 2001; Mayer, AJPH, 2008; Bettancourt, Cultural Competence in Health Care, 2002

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How can we enhance the prevention of sexual transmission of HIV among MSM?

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Enhancing MSM HIV Prevention

Align strategic policies and programmes

- Now consensus on the essential components of response
  - WHO, World Bank, Global Fund, UNAIDS, UNDP
  - MSM Global Forum and other NGOs
- Best practices for optimizing HIV prevention with MSM include:
  - Involve MSM
  - Ensure confidentiality
  - Link, integrate and co-locate services
  - Incorporate new research and technologies
  - Addressing stigma and discrimination
  - Promote an enabling policy environment

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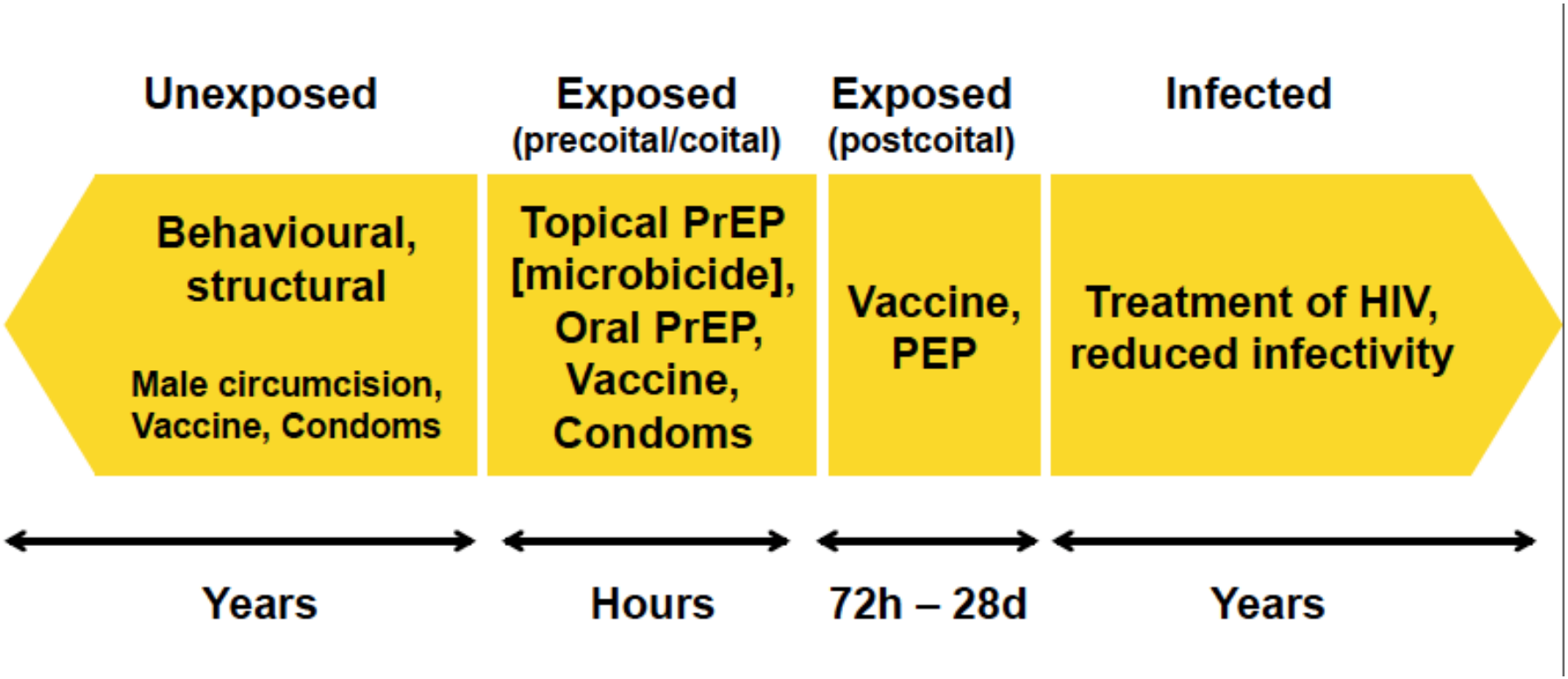
Enhancing MSM HIV Prevention

Optimise use of new prevention technologies



Adapted from Cohen et al. J. Clin. Invest. 118:4, 2008. Courtesy of C. Hankins

HIV prevention with ARVs (since 2010)

HIV prevention (before 2010)

HIV PREVENTION

Topical pre-exposure prophylaxis (microbicides) for women

Abdool Karim Q, Science 2010

Oral pre-exposure prophylaxis

Grant R, NEJM 2010 (MSM)
Baeten J, NEJM 2012 (Couples)
Thigpen M, NEJM 2012 (Heterosexuals)
Choopanya K. Lancet 2013 (PWID)

Treatment for prevention

Cohen M, NEJM 2011

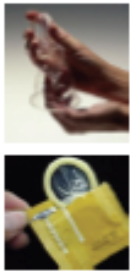
Male circumcision

Auvert B, PloS Med 2005
Gray R, Lancet 2007
Bailey R, Lancet 2007

Treatment of STIs

Grosskurth H, Lancet 2000

Female Condoms



Male Condoms

HIV Counselling &Testing

Coates T, Lancet 2000

Behavioural Interventions

- Abstinence
- Be Faithful

CAPRISA

Note: PMTCT, Screening transfusions, Harm reduction, Universal precautions, Vaccines, etc. have not been included

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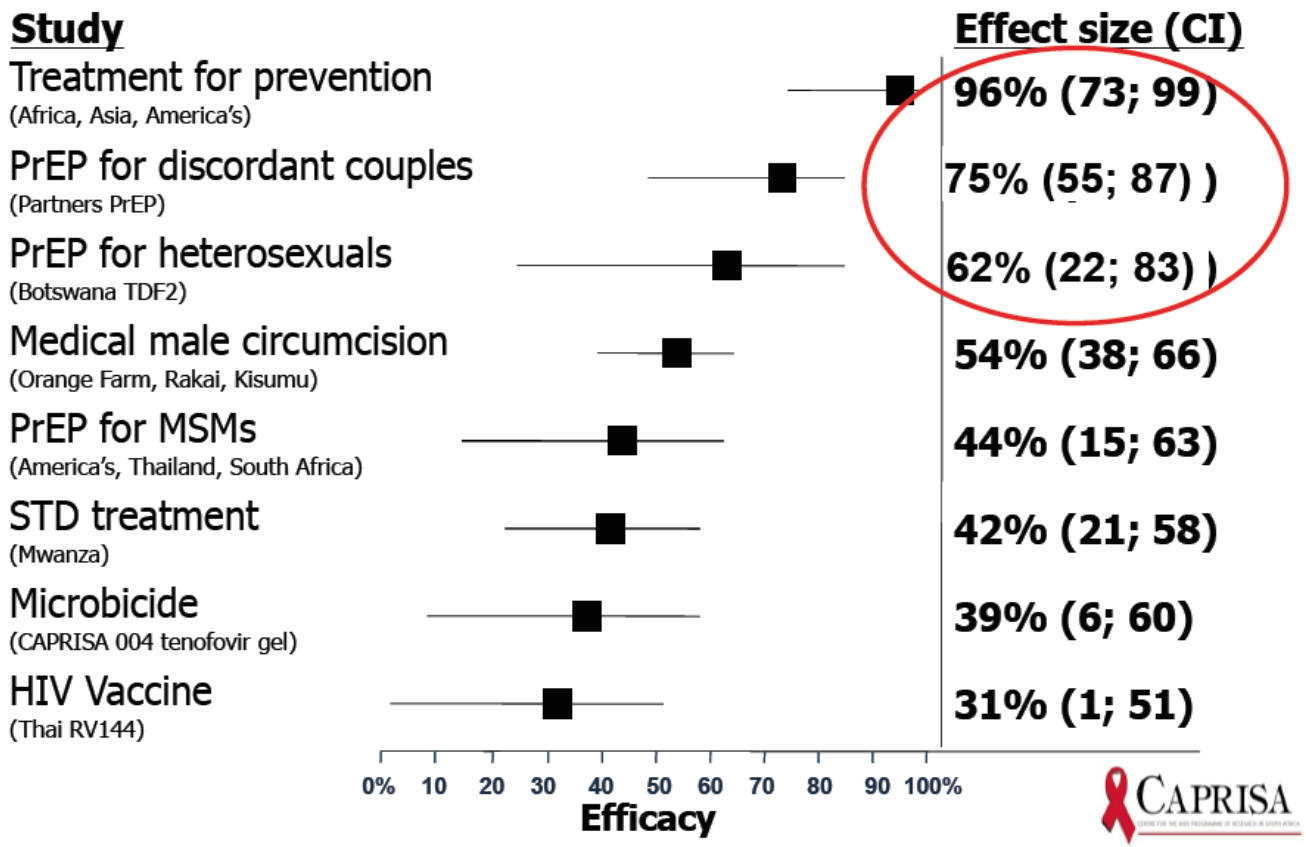
Clinical trial evidence: Preventing sexual HIV transmission



CAPRISA

Courtesy of C. Hankins

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Enhancing MSM HIV prevention

Scaling HIV testing

- HIV testing now gateway for more tailored approach, and access to, behavioral and biomedical interventions
- Key challenge will be optimising HIV testing programmes
  - Increase HIV testing frequency by providing acceptable options
  - Test groups of men who are at high risk, but currently not testing
  - Use new testing options to leverage networks
  - Use internet-based technologies to reach men who are in rural areas, or who don’t want to use MSM NGOs
  - Integrate HIV testing into routine care

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Enhancing MSM HIV Prevention

Promote sexual health across the lifecourse

- Increase use of **high-quality, coordinated** educational, clinical, and other preventive services
- Increase knowledge, communication, and respectful **attitudes** regarding sexual health
- Promoting opportunities to discuss role of **pleasure, satisfaction** and ability to have the best sex with the least harm
- Increase healthy, responsible, and **respectful sexual behaviors** and relationships
- Decrease **adverse health outcomes**, including HIV/STDs, viral hepatitis, and sexual violence

Source: Douglas JM Jr, Fenton KA. Public Health Rep. 2013 Mar-Apr;128 Suppl 1:1-4

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Enhancing MSM HIV Prevention

Comprehensive Clinical Care

- Work with providers to address stigma, discrimination and provide comprehensive care
  - MSM are entitled to culturally competent health care that addresses their health needs
  - As major sources of information and vital services, health providers play a key role, and must be trained to provide supportive, non-judgmental care
  - Well-trained clinicians who understand MSM realities and contexts
  - Use provider engagement can to enable youth and older MSM to develop healthier lifestyles

Adapted from Mayer et al 2012

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Summary

- Continued evolution of the global HIV epidemic with concentration among MSM populations and specific subgroups
- MSM continue to be excluded, sometimes systematically, from HIV prevention, services and research because of stigma, discrimination, and criminalisation
- Policies for enhancing MSM HIV prevention exist and include ensuring effective and culturally competent, combination prevention and treatment approaches, and addressing the social and structural epidemic drivers

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Thank you

The Resurgent Global HIV Epidemic among Men who have sex with Men.

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