### COMPETING INTEREST OF FINANCIAL VALUE > £1,000:

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<th>Speaker Name</th>
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<td>Prof Kevin Fenton</td>
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**Date**: November 2013
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
Overview

i. Epidemiological context
ii. Multi-level epidemic determinants
iii. Enhancing MSM HIV prevention
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

Global HIV prevalence among MSM, 2007-2011

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

HIV Prevalence among MSM in LMIC

- 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
HIV median prevalence among men who have sex with men, by region, 2007–2012*
HIV diagnoses among MSM in Western Industrialized Countries

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

Estimated New HIV Infections in the U.S., 2009, for the Most-Affected Subpopulations

- White MSM*: 11,400
- Black MSM: 10,800
- Hispanic MSM: 6,000
- Black Heterosexual Women: 5,400
- Black Heterosexual Men: 2,400
- Hispanic Heterosexual Women: 1,700
- White Heterosexual Women: 1,700
- Black Male IDUs: 1,200
- Black Female IDUs: 940

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

- Total living with HIV = 96,000 (90,800 – 102,500)
- Total diagnosed = 73,400 (71,900 – 75,000)
- Total undiagnosed = 22,600 (17,600 – 29,000)

### Number of people living with HIV by Group

- **MSM**:
  - Diagnosed: 31,900
  - Undiagnosed: 8,100

- **African-born men**:
  - Diagnosed: 7,600
  - Undiagnosed: 2,900

- **African-born women**:
  - Diagnosed: 15,900
  - Undiagnosed: 4,300

- **Non-African-born men**:
  - Diagnosed: 6,800
  - Undiagnosed: 3,300

- **Non-African-born women**:
  - Diagnosed: 7,200
  - Undiagnosed: 3,300

- **People who inject drugs**:
  - Diagnosed: 1,900
  - Undiagnosed: 400
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

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

Data adjusted for missing exposure group information
Late diagnosis of HIV infection by exposure group: United Kingdom, 2011

Proportion diagnosed late

- MSM
- Heterosexual men
- Heterosexual women
- People who inject drugs
- Overall

CD4 <350
CD4 <200

1 CD4 <350 cells/mm³ within three months of diagnosis
Recently acquired infections among people newly diagnosed with HIV by exposure group: England, Wales and Northern Ireland, 2011
Selected STI diagnoses among MSM: England 2001-2010

STI data (except HIV) from sexually transmitted clinics
* uncomplicated, complicated ** first attack
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
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.
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)
Black MSM vs. Black General Populations by Region/ Country

HIV Prevalence Summary Odds Ratio

S. Africa region E. Africa region United Kingdom N. Africa region W. Africa region Canada Caribbean region United States

(Millett et al., 2012)

HIV Prevalence Summary Odds Ratio

- vs. White MSM: 3X
- vs. Black community: 22X
- vs. U.S. population: 72X

(Millett et al., 2012)
What’s driving these changes?

Source: Dahlgren and Whitehead, 1991
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

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)

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.

Molecular epidemiology of HIV subtypes in MSM, 20067-2011
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)

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

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?

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

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

33 (Sandfort, Arch Gen Psych, 2001; Gilman, AJPH, 2001; Lewis, Health Place, 2010; Safren, Health Psychology, 2012)
## Driving factors?

### Resilience in the Face of Stressors

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

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.

Sources: Mayer et al, 2012; Gonser, J Cult Divers, 2000; Meyer, AJPH, 2001; Mayer, AJPH, 2008; Bettancourt, Cultural Competence in Health Care, 2002
How can we enhance the prevention of sexual transmission of HIV among MSM?
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
Enhancing MSM HIV Prevention
Optimise use of new prevention technologies

Unexposed

- Behavioural, structural
- Male circumcision, Vaccine, Condoms

Exposed (precoital/coital)

- Topical PrEP [microbicide], Oral PrEP, Vaccine, Condoms

Exposed (postcoital)

- Vaccine, PEP

Infected

- Treatment of HIV, reduced infectivity

Years → Hours → 72h – 28d → Years

HIV prevention with ARVs (since 2010)

- 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

HIV prevention (before 2010)

- Male circumcision
  - Gray 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

Note: PMTCT, Screening transfusions, Harm reduction, Universal precautions, Vaccines, etc. have not been included
Clinical trial evidence: Preventing sexual HIV transmission

**Study**
- **Treatment for prevention** (Africa, Asia, America’s)
- **PrEP for discordant couples** (Partners PrEP)
- **PrEP for heterosexuals** (Botswana TDF2)
- **Medical male circumcision** (Orange Farm, Rakai, Kisumu)
- **PrEP for MSMs** (America’s, Thailand, South Africa)
- **STD treatment** (Mwanza)
- **Microbicide** (CAPRISA 004 tenofovir gel)
- **HIV Vaccine** (Thai RV144)

**Effect size (CI)**
- **96% (73; 99)**
- **75% (55; 87)**
- **62% (22; 83)**
- **54% (38; 66)**
- **44% (15; 63)**
- **42% (21; 58)**
- **39% (6; 60)**
- **31% (1; 51)**

Courtesy of C. Hankins
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
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

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
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
Thank you

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

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