

**EPIDEMIOLOGY OF HIV AMONG  
MSM IN AFRICA:  
Implications for Rectal Microbicides**

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# Overview

- Introduction
- Risk Factors for HIV Infection among MSM
  - ▣ Individual
  - ▣ Structural
- HIV Prevalence and Risk data among African MSM
- Anal Sex and Lubricant use
  - Implications for microbicides
- Conclusions

# Introduction

- HIV epidemic spread among MSM is occurring in both high and low income settings in 2009
- Lower income HIV epidemics among MSM are underway in Latin America, Asia, Eastern Europe/FSU, and Africa
- Many HIV epidemics in lower income settings among MSM are occurring in “hidden” contexts of discrimination, stigma, criminalization, and limited HIV surveillance
- MSM in Africa among the least studied, but data are emerging

# Individual Risk factors for MSM

- Unprotected anal intercourse ( ↑ risk with receptive UAI)
  - High frequency of male partners (>3 sexual contacts/ week)
  - High number of lifetime male partners (>10)
  - Injection drug use
  - (lack of circumcision—data are equivocal)
  
  - Non-injection drug use
  - Methamphetamines
- Mediated through increased sexual exposure**

# MSM Structural Risk Contexts

- Criminalization and stigma limit MSM access to HIV prevention, treatment and care
- MSM understudied in many emerging HIV epidemic contexts
  - ▣ Not included in national HIV surveillance in majority of low and middle income countries
- As of 2009, relatively few countries have published data characterizing MSM risk and HIV rates
- Fewer than **1 in 10-20 MSM** worldwide have access to necessary prevention services
  - ▣ This is markedly lower in the African Context

# MSM in Africa

- Increasing amount of information available over the last few years
  - ▣ Risk Status
    - Reports from Ghana, Nigeria, Zambia, Tanzania, Uganda, Kenya, Senegal, Ethiopia describe high rates of UAI and a population in need of basic interventions
  - ▣ Sexual Identity
    - Recent reports from Kenya and Uganda describe a more visible (reachable) and demographically diverse population than a decade ago

# Systematic Review of HIV among MSM in Low and Middle Income Countries (2007)

Number of Countries		Odds Ratios	95% Confidence Interval	MSM Prevalence
Region				
Latin America	15	33.3	32.3-34.2	16.1 (15.1-17.0)
Asia	7	18.7	17.7-19.7	11.4 (10.1-12.7)
<b>Africa</b>	<b>4</b>	<b>3.8</b>	<b>3.3-4.3</b>	<b>13.0 (10.6-18.1)</b>

- MSM are at high risk for being HIV infected across the lower and middle income countries of Latin America, Asia, and Africa
- Even in generalized epidemics of Africa, MSM are still at significantly increased risk of HIV infection

# HIV Prevalence Rates Among MSM West Africa

Country	Sample Size	MSM Prevalence (95% CI)	Reproductive Age Male HIV Prevalence
Senegal	943	21.6 (19.0-24.3)	0.7%
Ghana	N/A	25.0%	1.4%
Nigeria	1961	13.5 (12.0-15.0)	2.4%
Mauritania	21	19.0% (2.0-36.0)	1.2%
Cote D'Ivoire	54	18.5%	2.9%

# HIV Prevalence Rates Among MSM East Africa/ North Africa

Country	Sample Size	MSM Prevalence (95% CI)	Reproductive Age Male HIV Prevalence
Kenya	1125	15.6 (13.5-17.7)	7.49%
Tanzania	509	12.4 (9.5-15.2)	5.88%
Uganda	19	42.1%	5.0%

Country	Sample Size	MSM Prevalence (95% CI)	Reproductive Age Male HIV Prevalence
Sudan	1119	8.8 (7.1-10.4)	1.26%
Egypt	340	5.3 (2.9-7.7)	0.02%

# HIV Prevalence Rates Among MSM Southern Africa

Country	Sample Size	MSM Prevalence (95% CI)	Reproductive Age Male HIV Prevalence
South Africa	574	15.3 (12.4-18.3)	15.89%
Zambia	641	32.9 (29.3-36.6)	15.72%
Malawi	201	21.4 (15.7-27.1)	11.46%
Namibia	218	12.4% (9.0-17.0)	10.8%
Botswana	117	19.7% (14.0-28.0)	18.1%

# HIV Incidence Rates

- African HIV incidence data is available only from Mombasa, Kenya
- Among MSM who report:
  - Insertive sex only
    - 8.8 %/person-year
  - Receptive sex only
    - 12.9 % per person-year
  - Both receptive and insertive sex it is
    - 20.4 % per person years

# Risk Factors for HIV among MSM in Africa

- ❑ Self-reporting as homosexual
  - ❑ Likely a marker of sexual positioning
- ❑ Not always wearing condoms with men
- ❑ Having been diagnosed with an STI
- ❑ Had Transactional Sex
- ❑ Used alcohol with sex
- ❑ Older Age
  - ❑ Not new epidemics among younger men
- ❑ Ever Arrested
- ❑ Ever Raped

# Human Rights Contexts

## Malawi, Namibia, Botswana

Characteristic	Malawi	Namibia	Botswana	Pooled
Denied housing other than not being able to pay	6.5%	8.3%	5.2%	<b>6.9% (37/534)</b>
Denied health care based on sexuality	4.0%	8.3%	0.9%	<b>5.1% (27/533)</b>
Afraid to seek health services	17.59%	18.3%	20.5%	<b>18.5% (99/535)</b>
Afraid to walk in community	15.5%	16.7%	29.1%	<b>19.0% (101/532)</b>
Blackmailed because of sexuality	18.0%	21.3%	26.5%	<b>21.2% (113/533)</b>
Yes to any of the above related to sexuality	34.3%	41.5%	56.9%	<b>42.1% (222/527)</b>

# Associations with Rights Violations

## Malawi, Namibia, Botswana

- Men who reported blackmail
  - ▣ Much more likely to have disclosed sexual orientation to a family member
  - ▣ Less likely to have had HIV test in last 6 months
  - ▣ More likely to be afraid to seek health care
  
- Disclosing sexual orientation to health care workers
  - ▣ Highly associated with being denied health care
  - ▣ Much less likely to have had a HIV test in last 6 months



# Anal Sex and Lubricant Use

Implications for microbicides

# Anal Sex Frequency in Malawi, Botswana, Cape Town Townships, Namibia

- Lifetime anal intercourse was inclusion criteria:
  
- In last 6 months, reporting anal sex with a man:
  - Overall:  $442/502 = 88.0\%$
  
  - Malawi:  $153/176 = 86.9\%$
  - Botswana:  $105/115 = 91.0\%$
  - Cape Town:  $178/197 = 90.4\%$
  - Namibia:  $184/211 = 87.2\%$

# Lubricant use for anal sex, MSM in Malawi, 2008

Last sex with another man

<u>Lubricant</u>	<u>N</u>	<u>Percent</u>
Petroleum-based Products	77	46.8 %
Water-based lubricant	45	24.2 %
Saliva	21	11.3 %
No lubricant	15	8.1 %
No condoms/no lubricant	18	9.7 %
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Total	186	100%

Only 6.7% (8/120) of those who reported always wearing condoms with men used a water-based lubricant

# Lubricant use for anal sex, MSM in Namibia, Botswana, Malawi, 2008

Last sex with another man

<u>Lubricant</u>	<u>N</u>	<u>Percent</u>
Petroleum-based Products	210	41.2 %
Water-based lubricant	130	25.5 %
Saliva	35	6.7 %
No lubricant	104	20.4 %
No condoms/no lubricant	31	6.1 %
-----+-----		
Total	510	100 %

Across the three sites, 12.9% (49/379) of those who reported always wearing condoms with men and used water-based lubricant

38.8% (147/379) of men reported always wearing condoms with men—but used petroleum-based, saliva, or no lubricant.

# Factors associated with water-based lubricant use: B, N, M MSM, 2008

- no relationship between HIV and use of WBL compared to all other lubricants.
- MSM who use water-based lubricant tend to be more educated (  $p \leq 0.001$  )
- Less likely to be married or have girlfriend OR 0.59 (95% CI 0.36-0.98),  $p < 0.05$
- Qualitative findings: barriers to WBL are cost, access, information stigma of purchase

## Univariate associations with MSM that report being bisexually active (both male and female sexual partners in preceding 6 months)

	Malawi	Namibia	Botswana	Combined
Characteristic	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Always wear condoms	4.2 (0.5-35.0)	<b>7.77 (3.18-18.98)</b>	<b>17.5 (2.17-142.3)</b>	<b>6.3 (3.2-13.9)</b>
Always condoms with casual partners	<b>6.3 (1.4-26.8)</b>	<b>7.1 (3.65-13.8)</b>	<b>26.3 (3.31-208.9)</b>	<b>6.0 (3.5-10.4)</b>
Always condoms with regular partners	<b>6.3 (1.4-26.8)</b>	<b>6.3 (2.77-14.39)</b>	<b>8.0 (2.7-23.5)</b>	<b>5.6 (3.1-10.0)</b>
<b>Not use Water-Based lubricant</b>	1.0 (0.5-2.3)	1.8 (0.9-3.8)	<b>5.9 (2.0-17.8)</b>	<b>2.0 (1.3-3.2)</b>

# Discussion

- African MSM are at high risk for HIV infection
- Anal sex is common among these men
- Water-based lubricants are little used—oil based products are the most commonly used
- Lubricant data suggests that a rectal microbicide with lubricant qualities would be highly valued by these men

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