

HIV epidemic among MSM in Africa

“Prevalence & incidence”

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Nairobi, Safari Park Hotel, 14 May 2008



Collaborative Partnership



Kilifi District Hospital



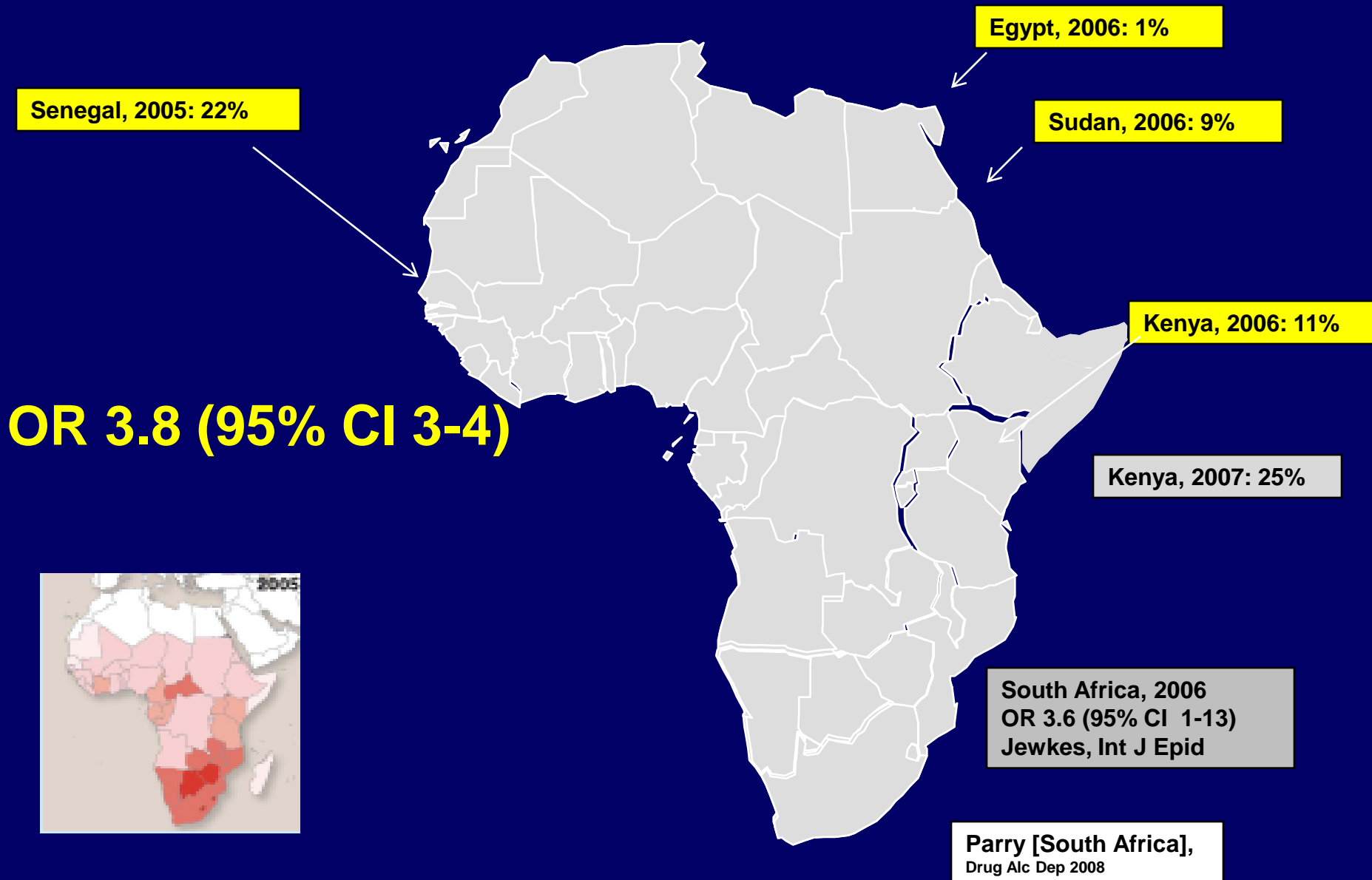
Outline

- Literature
- Why start MSM research in Africa?
- Findings from Kenya MSM studies

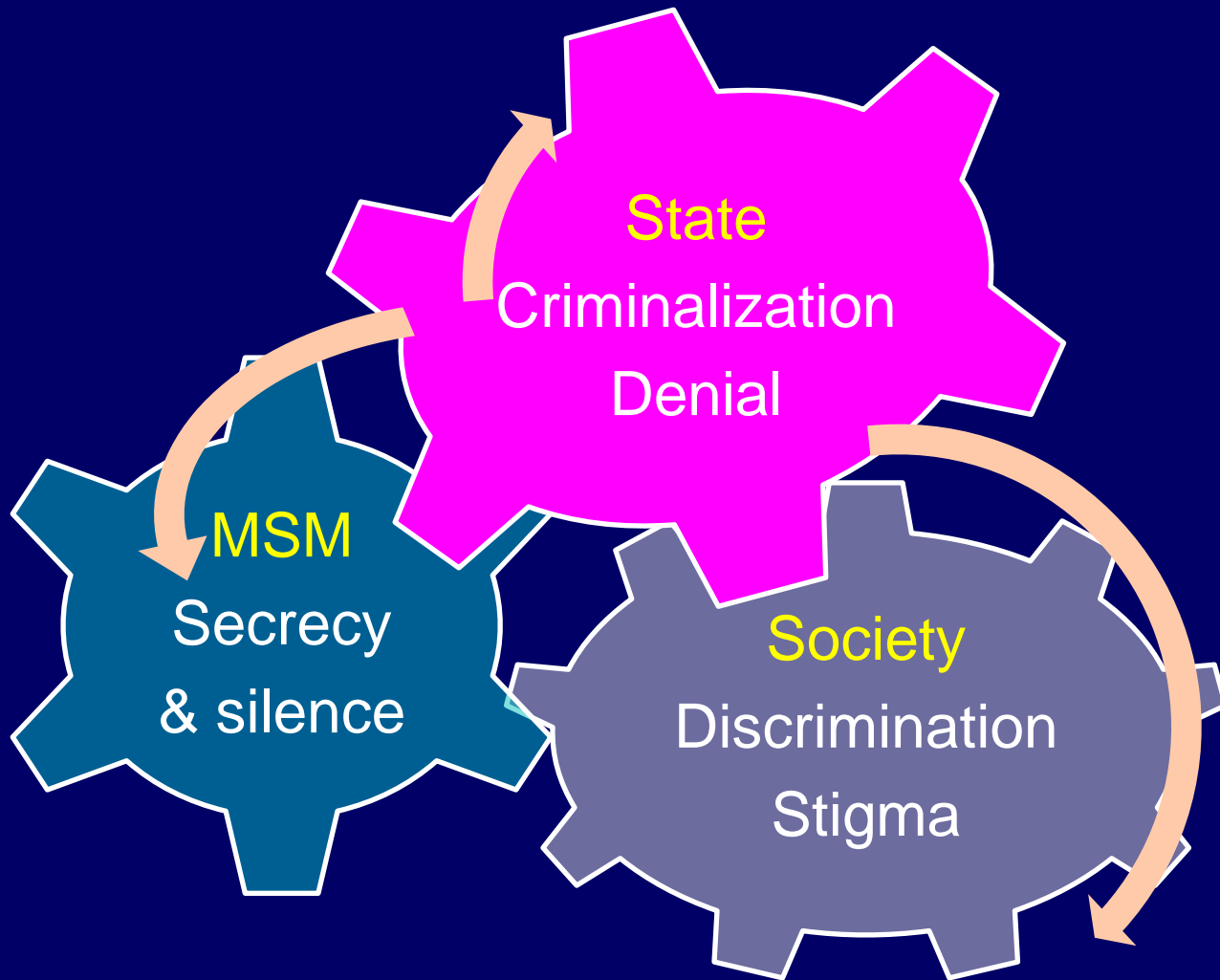
Systematic review

- Caceres et al, *STD 2006*
 - Period: 1990 -2004
 - number of MSM in low and middle income countries
 - 561 studies; 67 prevalence & MSM; none from Africa
 - ethnographic evidence in Africa
- Baral et al, *Plos Med 2007*
 - Period: 2000-06
 - Risk of HIV infection of MSM
 - 58 studies, 4 Africa
 - OR 9.6 (95% CI 9-10) high prevalent countries

Studies with HIV-testing & MSM, 2000-2008



'Why so few HIV risk factor studies'



The other TABOO = anal sex

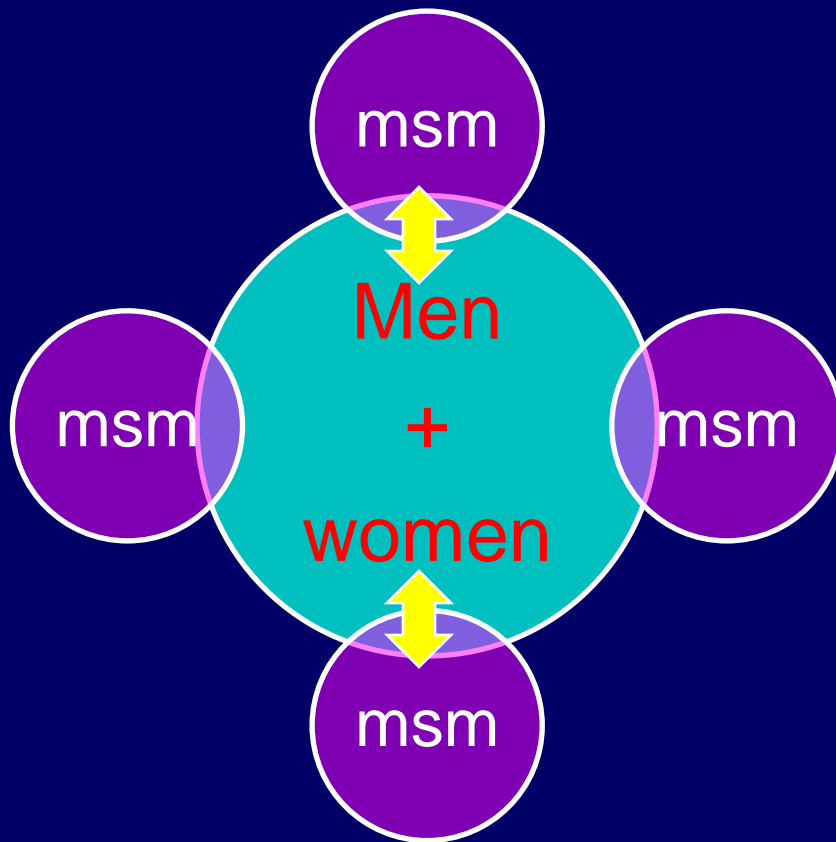
In Hetero-sexual couples



N = 11,904
15-24 yrs
Anal inter course
3.6%

Lane, AIDS 2006
[South Africa],

Why start MSM research in Africa?



Marginalized pop

Human rights

Public health

Mombasa cohort



Risk group	Prevalence	Incidence /100 pyo	95% CI
MSM*	23%	8.6	5.2 – 14.3
Female SW	32%	3.2	1.5 – 6.6

***in 406 “high risk” MSM**

Homo-sexual 37% (95% CI: 30-45%)

Bi-sexual 13% (95% CI: 10-19%)

Nairobi cohort



Risk group	Prevalence	Incidence /100 pyo	95% CI
MSM	25 %	10.7	5.6 - 20.5
Women	13%	0.2	0.0 - 1.5

Results from Kenya studies

- Capture-recapture
- Risk factors
- HIV-1 virus strain

'Are you on the market?': a capture–recapture enumeration of men who sell sex to men in and around Mombasa, Kenya

AIDS 2007

- Estimate magnitude of MSM who sell sex
- Map MSM meeting places

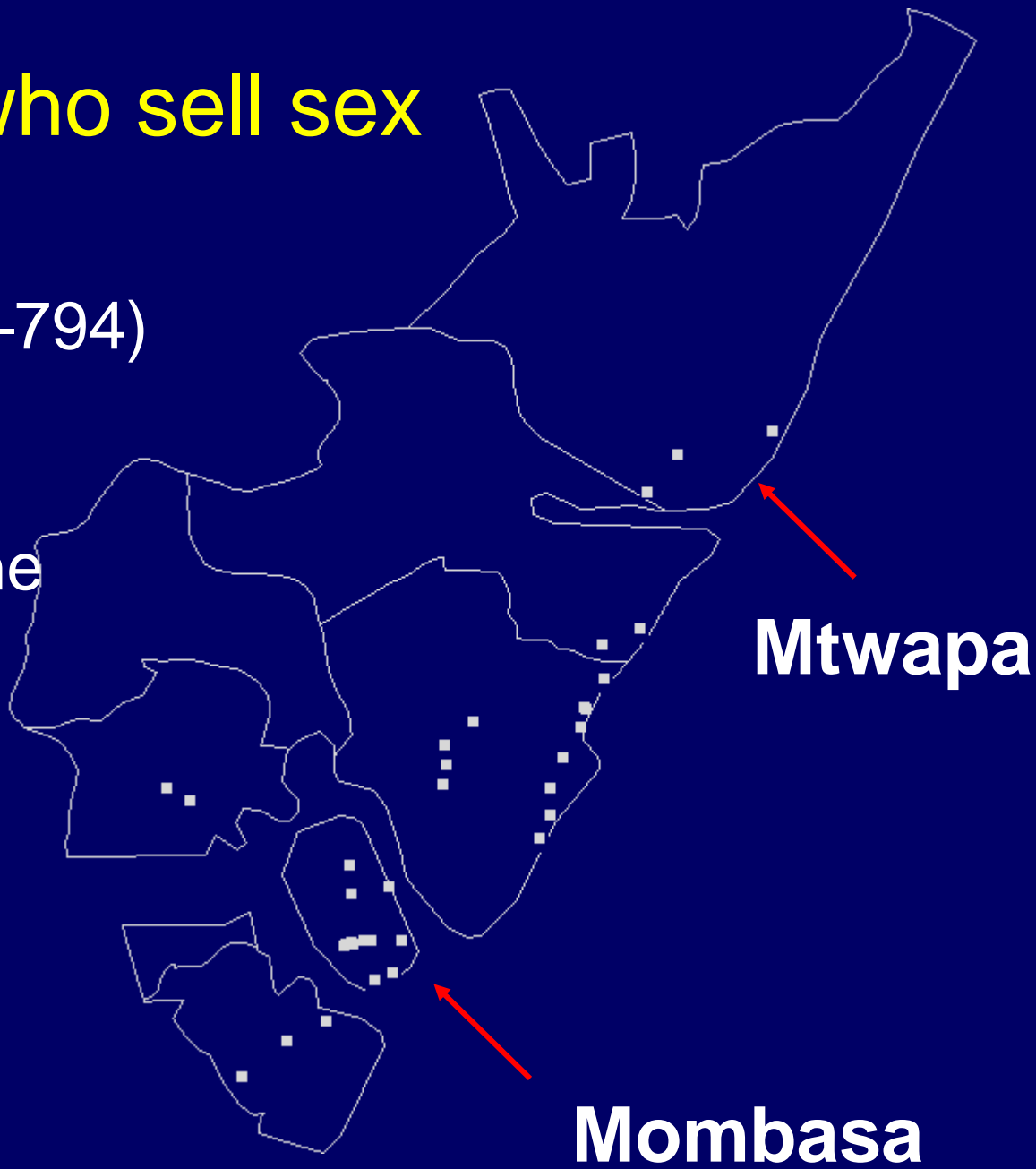


Methods: MSM who sell sex

- 77 MSM meeting places were mapped, including
 - public streets and parks, brothels, bars and nightclubs
- 37 MSM peer enumerators trained
 - “Catchy” prevention flyer developed with MSM
 - Peers could instantly recognise MSM who sell sex
 - Acceptance of flyer would allow for identification of recaptures
- Two rounds of counts conducted (one week apart)

Results: MSM who sell sex

- 739 (95% CI 694–794)
- 582 counted in one evening
- No information on behaviour



HIV-1 infection in high risk men who have sex with men in Mombasa, Kenya

- Risk factors for prevalent HIV-1 infection among MSM at cohort intake



AIDS 2007, 21:2513–2520

Methods

- HIV neg & pos volunteers access 3-monthly STD screening and comprehensive care
- Sexual behaviour history, including:
 - Sex with men, women, or both
 - Use of condoms for anal sex, intra-venous drug use, type of clients served
 - 3-month recall of anal sex practise (insertive / receptive)

Socio-demo characteristics by sex partner preference of 285 MSM

Characteristic		MSM-only n=114	MSM-both n =171
Age (yr)	Median (IQR)	27 (23-29)	28 (23-35)
Education	Median yrs	8 (7-11)	8 (6-11)
Employment	Formal	18%	18%
Marital status	Single	96%	77% *
Religion	None	7%	15%
Circumcision		90%	93%

* p<0.05

Comparison of risk factors by partner preference of MSM, and HIV-prevalence

	MSM-only N=114	MSM-both N=171	p
Payment for sex	75%	74%	0.8
No Condom use with anal sex	36%	38%	0.3
No Condom use with casual partner	46%	43%	0.4
IV drug use	1%	2%	0.5
Any insertive anal sex	46%	91%	<0.001
Any receptive anal sex	75%	40%	<0.001
Both ins. + recep. sex	25%	32%	0.17
HIV-1 positive	43%	12%	<0.001
Active syphilis	7%	1.2%	0.009

Adjusted risk factors for HIV-1 infection in MSM

		n	OR	95% CI	p
Sex of partners	Men only	105	6.3	2.3 – 17	<0.001
	Men & women	168	ref	-	
Anal sex acts	Insertive AI	123	Ref	-	0.012
	Receptive AI	69	3.9	1.4 – 11	
	Rec. & ins. AI	81	8.0	2.9 - 22	
1> unprotected anal sex acts	Yes	224	2.3	0.8-6.7	0.147
	No	49	ref		
Age (yrs)	18-24	96	1.1 per yr	1.04 – 1.2	0.001
	25-34	130			
	35+	47			

Meeting places and origin of clients of MSM who sold sex

Location where sex was sold (n=197)	Streets, beaches	44%
	Bars, night clubs	34%
Origin of clients (n=132)	Kenyan resident	93%
	African	52%
	Arab	28%
	Indian	9%
	other	4%
	Tourist	7%
	Caucasian	6%
	African	1%

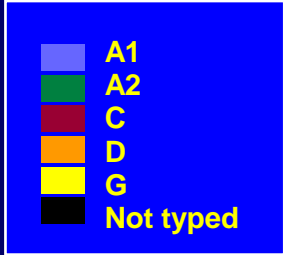
Conclusions Risk Factors

- Unprotected anal receptive intercourse major risk factor for HIV-1 acquisition
- Most clients (93%) were Kenyan residents
- 60% of MSM were bisexual

HIV-1 viral strains in MSM

- Compared viral strains in MSM and female sex workers
- Both acute and prevalent samples
- Full length genomic sequencing
- Collaboration with Francine McCutchan (USA)

MSM Cohort



Sample	FL sequence equivalents	Genotyping	Subtype
MSM 00B210976	1		A
MSM 00B210916	0		Not typed
MSM 00B211242v1	1		A/C
MSM 00B210651v2	1		A
MSM 00B221034v2	1		A
MSM 00B211069v3	1		A/A2/C/D
MSM 00B210974v2	1		A
MSM 00B210950v3	1		A/A2/C/D
MSM 07B211045v1	0		Not typed
MSM 07B211270v1	5.5	 (1) (3) (5)	DG dual
MSM 06B211261v1	1		A/D
MSM 03B211231v1	1		A/C
MSM 09B211215v1	2	 (1) (1)	A
MSM 08B211378v1	1		A
MSM 04B210939v3	0		Not typed
MSM 00B0211059v3	1		A
16 samples	18.5 fl	8A, 2AC, 1AD, 1DG, 2 AA2CD, 3nt	8 subtypes, 5 recombinants (1 dual)

Conclusion: MSM viral strains

- MSM epidemic is connected to local, Kenyan epidemic
- High proportion of recombinant, dual infections, and novel strains
- New strains arising in MSM could easily bridge to much larger hetero-sexual community

Summary

- High risk MSM can be engaged in research, but little information on wider MSM community
- HIV epidemic in MSM in Kenya is not isolated
- Urgent public health action to address risk behaviour among MSM and their sex partners
- Role of anal sex in heterosexual transmission needs elucidation in Africa

Acknowledgements

- University of Oxford
 - Adrian Smith
- University of Washington
 - Susan Graham
 - Scott McClelland
- International AIDS Vaccine Initiative
 - Matthew Price
 - Pat Fast
 - Bonnie Bender
 - Helen Thomson
- US Military HIV research
Rockville, MD
 - Francine McCutchan
 - Sodsai Tovanabutra
- Population Council
 - Scott Geibel
- Constella Futures
 - Alan Ferguson
- University of Nairobi / KAVI
 - Omu Anzala, Gaudencia Mutua
- KEMRI, Kilifi
 - Mary Mwangome , Ken Awuondo
 - Allan Muhaari
 - Haile Selassie Okuku
 - Lucie Ikumi, Alun Davies
 - Elise van der Elst
 - Norbert Peshu
- Counsellors, clinicians
- MSM communities

Acknowledgement of sponsor



IAVI gratefully acknowledges the generous support provided by the following major donors.*



Provided with the support of the European Union



ELUSKO JAURILARITZA GOBIERNO VASCO



Canadian International Development Agency

Agence canadienne de développement international



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 The Starr Foundation
 Swedish International Development Agency
 Swedish Ministry of Foreign Affairs
 U.K. Department for International Development
 Until There's a Cure Foundation
 The U.S. President's Emergency Plan for AIDS Relief through the U.S. Agency for International Development
 The World Bank/Global Forum for Health Research



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* As of 11/06