

Lancet Special Issue on HIV in Men who have Sex with Men (MSM)

July 2012

Summary Points for Policy Makers

Executive Summary

The Lancet MSM and HIV series show us that HIV epidemics among MSM are fundamentally different from other groups at risk. These differences help explain why HIV epidemics among MSM are expanding in low, middle, and high income countries, including the U.S., and why current HIV prevention and treatment programs for MSM are not working as well as they should. Biological, network, and social/structural factors combine for MSM and lead to more rapid and efficient HIV spread in MSM communities—individual risk behaviors for HIV infection contribute only modestly to these dynamics. New and more effective HIV prevention programs for MSM must reduce infectiousness through markedly expanding testing and treatment of positive men, and reduce risk of acquisition among negative men, through the use of PrEP, the development of a rectal microbicide, and increased access to and coverage for condoms and condom-compatible lubricant. Current prevention tools could reduce new HIV infections in MSM substantially, but more and better tools will be needed to achieve an AIDS free generation for young MSM. Stigma, discrimination, and social and health care level homophobia continue to limit access and uptake to essential services from testing to treatment, and from condoms to PrEP. Policy reform and structural changes will be key to expanding coverage and reaching men with culturally competent care. These realities are most clearly demonstrated among minority MSM in the U.S., where black MSM have much higher rates of HIV infection than other MSM, despite having lower individual risks for HIV. But black MSM also have lower rates of testing, health care access, health insurance, and successful HIV treatment—impacts seen at each step of the treatment cascade. Urgent reform is needed, in approaches, programs and policies, if we are to make real gains against HIV among MSM. Future efforts must be more biologically based, focus on delivery of effective interventions, address each gap in the testing to treatment cascade, and ensure safe and affirming spaces for prevention, treatment, and care.

Global epidemiology of HIV infection in men who have sex with men

Chris Beyrer et al.

- In 2012, HIV epidemics in MSM are expanding in countries of all incomes. Available incidence data from Thai, Chinese and Kenyan samples of MSM suggest those epidemics are in rapid expansion phases.
- HIV infection rates among MSM are substantially higher than those of general population adult males in every epidemic assessed. A comprehensive review of the burden of HIV disease in MSM worldwide found that pooled HIV prevalence ranged from a low of 3% in the Middle East and North Africa to a high of 25.4% of MSM in the Caribbean.
- Biological and behavioral factors make the dynamics of the MSM epidemic different than for general populations.

- The disproportionate HIV disease burden in MSM is explained largely by the high per-act and per-partner transmission probability of HIV transmission in receptive anal sex. Modeling suggests that *If the transmission probability of receptive anal sex was similar to that associated with unprotected vaginal sex, five year cumulative HIV incidence in MSM would be reduced by 80-90%.*
- Many MSM practice both insertive and receptive roles in sexual intercourse, which helps HIV spread in this population. Were MSM limited to one role, HIV incidence in this population over five years would be reduced 19-55% in high-prevalence epidemics.
- ***Taking both factors (per act transmission probability and role versatility) into account explains 98% of the difference between HIV epidemics among MSM and heterosexual populations—behavioral differences account for 2% of the difference.***

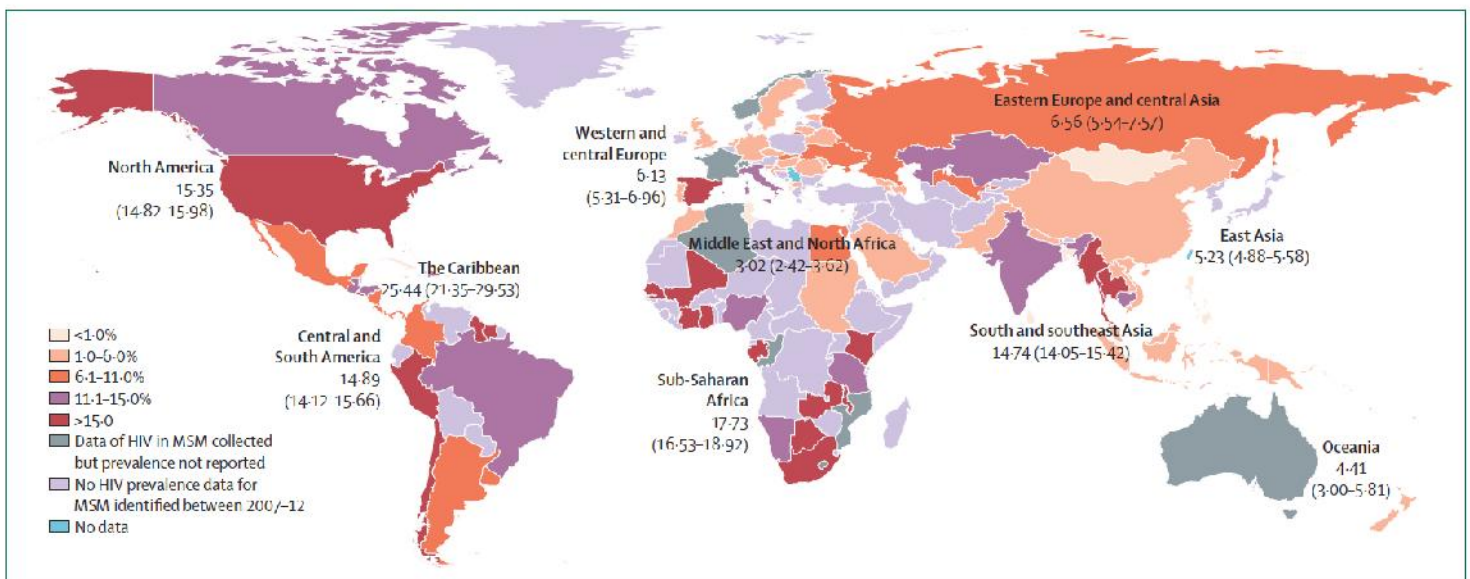


Figure 2: Global HIV prevalence in MSM, from studies published 2007–11. Data are prevalence (95% CIs). Sources listed in the appendix. MSM=men who have sex with men.

Comprehensive clinical care for men who have sex with men: an integrated approach

Ken Mayer et al.

- Studies of the life experiences of MSM and other sexual and gender minorities suggest that psychological distress and risk-taking behavior may result in part from early childhood experiences such as physical and emotional abuse by family, peers, and/or key community leaders (e.g. clergy).
- Several studies from around the world have shown that MSM are more likely to report substance use, depression, violent victimization, and childhood sexual abuse than their heterosexual peers.

The frequent co-occurrence of these conditions is associated with increased rates of unprotected sex and enhanced vulnerability to HIV and other STDs.

- Despite these developmental challenges, most MSM lead healthy and productive lives. ***Research is needed to better understand how many MSM in different cultures are resilient in the face of multiple stressors, in order to develop programs that can promote adaptive responses in sexual and gender minority youth.***
- Health care providers have a key role to play in improving the health of their MSM patients through the provision of appropriate screening and counseling. They should ask sexual and gender minority adolescents about their mood and behavior, screening for depression and substance abuse, and should make appropriate referrals for counseling and other support.
- Providers need to assess sexual histories regularly in order to determine when MSM clients should be screened for sexually transmitted infections. ***Programs to train health care professionals to provide culturally competent care to adolescent and adult MSM are urgently needed.***

Successes and challenges of prevention of HIV prevention in men who have sex with men

Patrick Sullivan et al.

- HIV prevention approaches to date have been insufficient to curb the HIV epidemics in MSM. ***Because of the high biological risks of HIV transmission associated with anal intercourse, the bar for HIV prevention may be higher for MSM. To date, no single HIV prevention approach is sufficient to control the expansion of HIV epidemics among MSM.***
- In most parts of the world, restricted resources and legal barriers complicate delivery of HIV prevention to MSM. ***Policy changes to align resources with the magnitude of HIV epidemics among MSM, and to allow MSM to safely access medical care and prevention services, are urgently needed to create an enabling environment for prevention, and an adequately resourced prevention response.***
- Several behavioral interventions are somewhat efficacious in reduction of risk behavior among MSM, but do not effectively decrease the incidence of new HIV infections. ***Behavioral interventions alone are necessary, but insufficient, to address HIV in MSM.***
- Coordinated behavioral, biomedical and structural interventions that incorporate efficacious strategies could substantially reduce the incidence of HIV in MSM if delivered at scale. ***Modeling suggests that, with sufficient coverage, appropriate “packages” of already-available interventions are sufficient to avert at least a quarter of new HIV infections in MSM in diverse countries in the next decade.***
- Despite the potential of current prevention tools, we must continue to develop new prevention modalities. ***For example, we need continued research into a rectal microbicide, into the optimization of oral PrEP, into an HIV vaccine, and into the efficacy of treatment as prevention for HIV positive MSM.***

- Making an impact in HIV epidemics among MSM will require achieving adequate coverage of packages of prevention interventions. **According to our data, it may be necessary to reach more than half of at-risk MSM to have substantial impact. To achieve such coverage, policy reforms, including decriminalization of male-male sex, are needed to create enabling environments in which men can safely access care and prevention services.**

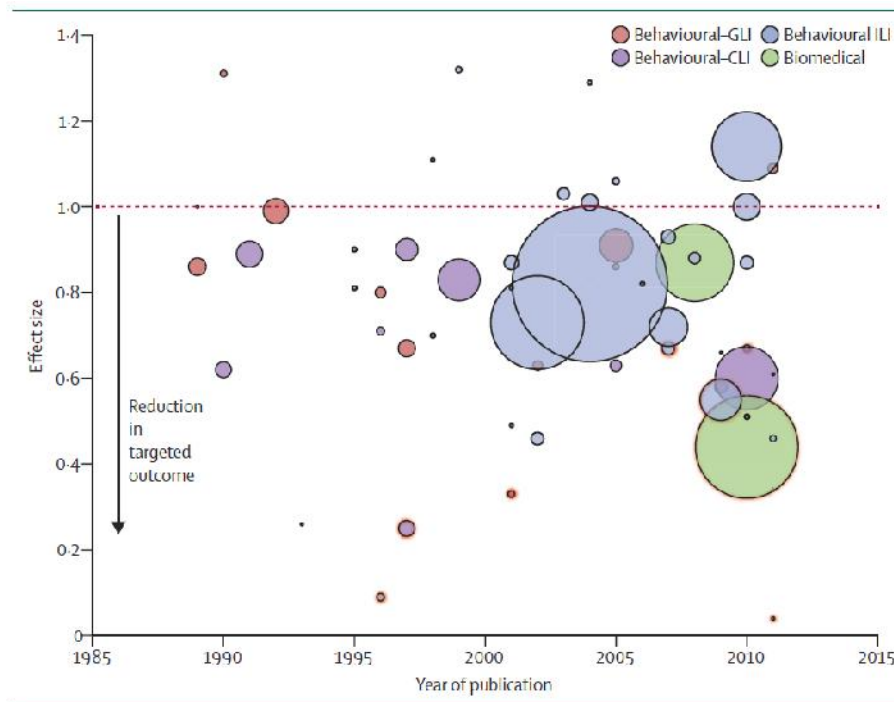


Figure 1: Effects of HIV prevention interventions for MSM, by number of MSM included in study, significance, and intervention type
 Effect size is expressed as a risk ratio when possible, but in some cases represents an odds ratio or prevalence ratio. Outcome was unprotected anal intercourse in 54 cases, HIV or other sexually transmitted infection in five, and number of sex partners in one. Red halos show significance. The red dotted line signifies a null effect (ie, no increase or decrease in the targeted outcome). The appendix contains further information and references for included interventions. MSM=men who have sex with men. GLI=group-level intervention. II=individual-level intervention. CLI=community-level intervention.

From personal survival to public health: community leadership by men who have sex with men in the response to HIV

Gift Trapence et al.

- HIV has disproportionately affected gay men and other MSM since the beginning of the pandemic, and in response they have made major contributions to the fight against AIDS through advocacy, education, research, and design and delivery of prevention, treatment, and care programs.
- The recognition by gay men and other MSM that protecting personal health requires community-level action has been catalytic in the response to AIDS worldwide, and will continue to be essential.

- *To take maximum advantage of new HIV technologies and growing recognition of the MSM epidemic, communities will require increased resources, support to develop capacity, and expanded opportunities to serve and lead.*

Men who have sex with men: stigma and discrimination

Dennis Altman et al.

- Homophobia is the product of deeply ingrained views on gender roles, religion and national identity, and must be addressed at a systemic and structural level.
- Legal equality is important, but not sufficient; it needs to be supported by real efforts to build acceptance of human diversity.
- Arguments for recognition of sexual and gender diversity are important, but need to avoid language that can be portrayed as imposition of Western models of individualism on other countries. Sometimes public statements and aid conditionality can be counter-productive.
- ***Exciting new possibilities for prevention are likely to be unavailable to many MSM, who in many parts of the world are stigmatized, persecuted and ignored.***

Comparisons of disparities and risks of HIV infection in black and other men who have sex with men in Canada, UK, and USA: a meta-analysis

Gregorio Millett et al.

- A meta-analysis of 600,000 MSM to assess factors associated with disparities in HIV infection in black MSM in Canada, the UK, and the USA found that in every country, black MSM were no more likely than other MSM to engage in sero-discordant unprotected sex. Black MSM in Canada and the USA were less likely than other MSM to have a history of substance use.
- ***Despite being less risky, Black MSM in the UK and the USA were more likely to be HIV positive than were other MSM.*** This paradox is partly explained by the finding that HIV-positive black MSM in each country were less likely to start HIV treatment than men of other races and ethnicities. ***U.S. HIV-positive black MSM were also less likely to have health insurance, have a high CD4 count, adhere to anti-retroviral treatment, or be virally suppressed than were other US HIV-positive MSM. These low rates of successful treatment for black MSM are driving new HIV infections in black MSM networks and communities.***
- The meta-analysis found that young black MSM in the U.S. were five times more likely to be HIV positive compared with other MSM despite engaging in similar risk behaviors. ***The data showed that high rates of HIV infection among U.S. young black MSM is due to an earlier sexual debut, a history of childhood sexual abuse, older age sex partners, and a low income.***
- These results provide evidence ***that the greatest HIV-related disparities in US black MSM relative to other MSM are disparities in HIV clinical care access and use, structural issues (including low income, unemployment, incarceration, low education), and sex partner characteristics, and the smallest disparities were in sexual and substance-use risk behaviors.***

- *Interventions that support early initiation of antiretroviral therapy, adherence, and clinical visits for HIV positive black MSM might have a greater effect in the reduction of HIV infection rates than do those that focus on individual sexual or drug use risks.*
- Physicians have a role in addressing racial disparities in HIV infection by providing regular HIV testing to and ART access for black MSM. ***Providers must diagnose and suppress the viral load of as many older MSM as possible to stem increasing rates of new infections in young black MSM.*** Repeat STI testing and treatment of STIs in black MSM should be a priority for providers in the USA and the UK.

Common roots: a contextual review of HIV epidemics in black men who have sex with men across the African diaspora

Gregorio Millett et al.

- Black MSM are at greater risk for HIV infection than are general populations across much of the African diaspora. **Black MSM worldwide are 15 times more likely to be HIV positive compared with the general populations and 8.5 times more likely compared with black populations.**
- ***Policies that criminalize homosexuality, notably in the Caribbean, are associated with increased prevalence of HIV infection in black MSM.***
- *Policy priorities include:*
 - Ensuring resources are allocated to addressing HIV among black are proportionate to their role in HIV epidemics.
 - Removing policies worldwide that exacerbate HIV transmission, stigma, or discrimination in black MSM.
 - Training law enforcement officials to recognize, interrupt, report, and prosecute attacks against MSM in Caribbean and African countries.
 - Encouraging European, Central American, and South American countries to stratify HIV surveillance data in MSM by race and hold global and regional meetings to share promising research and programs.
 - Providing basic access to condoms and water-based lubrication and increase the number of health-care providers and health centers that can provide culturally competent care for black MSM.
 - Designing research studies that emphasize protective factors against HIV infection and interventions that mitigate or neutralize structural (e.g., anti-gay violence, low income, discrimination) factors associated with HIV transmission risk.

A call to action for comprehensive HIV services for men who have sex with men

Chris Beyrer et al.

- As of 2011 only 87 countries have reported prevalence of HIV in MSM. Data are most sparse for the Middle East and Africa, regions where criminal sanctions against same-sex behavior can make epidemiological assessments challenging. All countries should include MSM in epidemiologic tracking of HIV.
- Research is central to forging a better response to HIV among gay men. This paper lays out a detailed research agenda. (See [Appendix 1](#) for the research agenda.) Research questions include:
 - In Epidemiology: how prevalent is HIV in MSM?
 - In Economics: the cost effectiveness of programming.
 - In Basic sciences: what formulations of rectal microbicides have most anti-viral activity?
 - In Promoting optimal care: how can we best engage MSM into care?
 - In Combination approaches: what combinations will have greatest effect on HIV incidence in MSM?
 - In Testing promising approaches: how can new technologies like mobile phone reminders support HIV prevention?
 - In Structural approaches: how does stigma and homophobia promote HIV risks – and what can we do about it?
- Human rights abuses are important social determinants of vulnerability to HIV. Rights protections can enhance uptake, use, and impact of HIV interventions. ***The best biomedical and behavior change interventions cannot succeed without spaces in which men can safely seek care and services, communicate openly about their sexual lives, and be supported to adopt available preventive options.***
- We need to scale a comprehensive package of HIV and health services for MSM, including: HIV testing, HIV treatment, condoms and lubricant, mental health and substance abuse services. MSM should be treated as whole people, not just vectors of disease. Comprehensive care for MSM requires:
 1. Well-trained clinicians who understand the conditions that are more common in MSM.
 2. Provider awareness that MSM are whole people with a range of non-HIV/STD health care needs.
 3. Understanding that provider engagement can enable youth and older MSM to develop healthier lifestyles when they come out .
- We did a [costing exercise](#) to estimate the affordability of an effective response, measured as the approximate annual global price tag for a set of interventions likely to reduce cumulative HIV incidence in MSM worldwide by 25% over 10 years.
- The high transmission efficiency for HIV in MSM suggests that prevention approaches that can reduce probabilities of per-act transmission will probably be needed to produce substantial reductions in new infections. These interventions include antiretroviral based approaches such as HIV treatment and pre-exposure prophylaxis.

- We estimated that a 25% reduction in HIV incidence in MSM worldwide would correspond to 0.5-1.0 million HIV infections averted in MSM in the next 10 years. To deliver oral pre-exposure prophylaxis on a global scale capable of achieving this reduction, the estimated global price tag in the coming year would be \$26 billion. Future costs are dependent on universal drug prices and thus might be substantially lower as those prices fall.
- ***One major conclusion of the exercise is that greater prevention investments in lower income settings can have a substantial impact, given that unmet need is highest and resources are currently most limited in these areas. The analysis also points to the imperative to lower drug prices in richer countries to enable wider use of strategies like pre-exposure prophylaxis.***
- ***Distribution of condoms and lubricant is an immediately affordable strategy. A global investment of US \$134 million in the coming year could provide enough condoms and lubricant to set a course toward averting 25% of global HIV infections in the next 10 years.ⁱ***
- We lay out a strategy to greatly improve the response to HIV among MSM globally. For this strategy we looked at inputs like epidemiology, social settings, and clinical factors. Then we suggest a four part approach:
 1. Overcome barriers to prevention, treatment and care through decriminalization, and targeted programs to reduce homophobia
 2. Expand access to evidence based services, bringing to scale prevention and treatment programs with evidence of efficacy
 3. Develop and implement a coordinated donor and recipient plan to expand services strategically to maximize the impact of funding.
 4. Set targets, measure progress and hold stakeholders accountable for progress.
- See Appendix 2 for specific recommended action steps for governments, ministries of health, donors, providers, researchers, and community members.

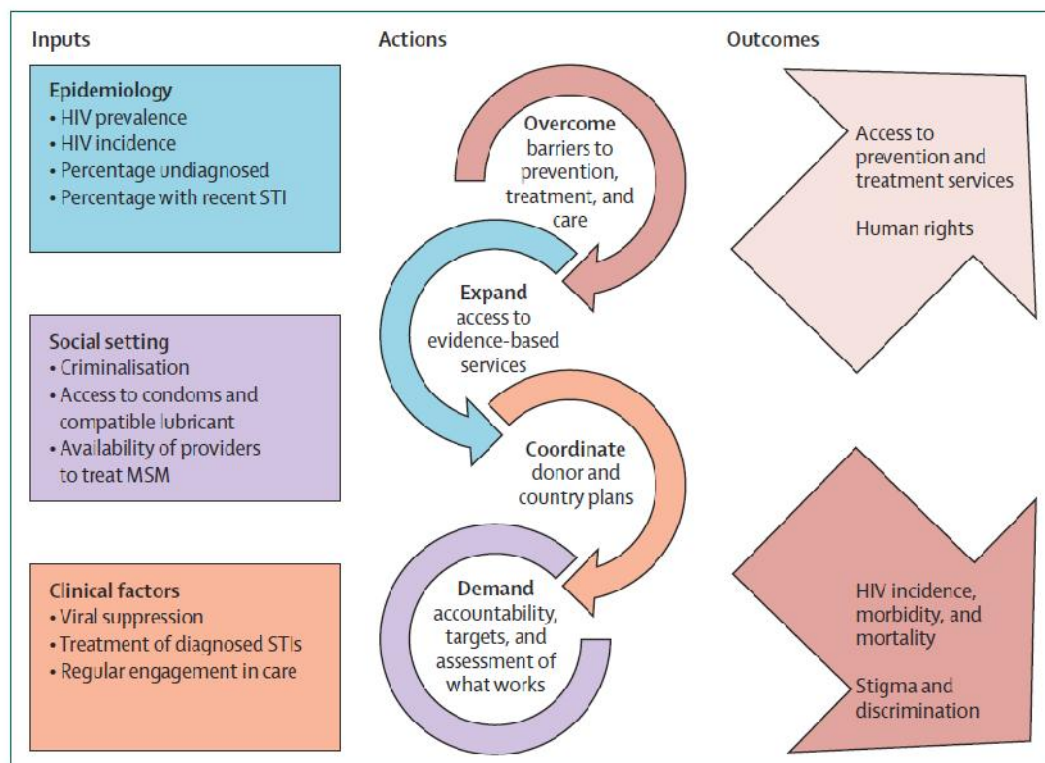


Figure 3: Strategic framework for action on HIV in MSM
 STI=sexually transmitted infection. MSM=men who have sex with men.

ⁱ This cost estimate includes both the cost of the condoms and compatible lubricant, and a conservative estimate of costs for condom distribution. The cost estimate assumes that the program would build on existing distribution channels for condoms and lubricants, including existing distribution programs through community-based organizations.

Appendix 1

	Example study	Comments
Epidemiology		
How prevalent is HIV in MSM by country? How common is undiagnosed HIV infection?	HIV seroprevalence or biobehavioural surveys	91 countries lack even basic information about HIV prevalence in MSM
What is HIV incidence in MSM?	Cross-sectional or prospective studies of MSM in diverse settings	Laboratory methods allow preliminary estimates of HIV incidence with cross-sectional samples; cohort studies with repeat testing offer direct measures of incidence, and allow determination of factors associated with incidence
How many MSM are in need of prevention services by country?	Development and validation of methods to estimate the size of MSM populations	..
Economics		
How much do MSM-targeted prevention approaches cost, and what can they save in terms of averted treatment?	Cost-effectiveness analyses of HIV prevention activities in MSM	..
What funding mechanisms exist for prevention of HIV in MSM, and how can they best be mobilised?	Financing analysis of resources for HIV prevention in MSM, with links to advocacy	..
Basic sciences		
What vaccines hold promise for prevention of HIV infections through rectal mucosa?	Phase 1 and 2 HIV vaccine trials	..
What formulations of rectal microbicides are most acceptable, safe, and efficacious?	Phase 1 and 2 microbicide trials	..
What are the penile effects of rectal microbicides for insertive partners?		
How do we develop capacity for future efficacy trials of rectal PrEP?	Establish and maintain MSM cohorts in diverse areas with high HIV incidence	..
Promoting optimal care		
How do we best promote routine HIV testing for MSM and increase awareness of HIV serostatus?	Studies of electronic (SMS) reminders, couples HIV counselling and testing, at-home self HIV testing	..
How can we best engage MSM into care?	Develop training and assess how best to train health facility-based counsellors, health workers and peer educators to offer HIV testing and ART care for MSM	..
How do we improve service delivery for MSM? What is the role of resource allocation modelling to improve HIV prevention for MSM?	Operational research on HIV testing and counselling, antiretroviral uptake and adherence, prevention for HIV positives, STI treatment for HIV-positive people; cost-effectiveness studies	..
What is the role for screening or presumptive treatment for <i>Neisseria gonorrhoea</i> or <i>Chlamydia trachomatis</i> ? At what interval should screening occur?	Revise national treatment guidelines for STI to include treatment for proctitis Evaluate WHO guidelines for presumptive treatment and assess frequency of presumptive proctitis treatment for at-risk MSM in Africa	..

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	Example study	Comments
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Combination approaches		
What combinations of HIV prevention interventions have greatest effect on HIV incidence?	Testing feasibility and acceptability of prevention packages, testing package efficacy	..
What are the best ways to test combination packages of interventions?	Development of new methods to test packaged interventions, including non-RCT methods and community-randomised approaches	..
Testing promising approaches		
Are reformulated female condoms acceptable and safe for use in anal sex?	Safety and acceptability studies of female condoms in MSM	..
How can new technologies (eg, SMS reminders, smartphones, online behavioural surveillance, internet interventions) support HIV prevention for MSM?	Development and testing of interventions, using the most prevalent technologies within countries or regions	..
Do promising vaccine approaches offer comparable efficacy in MSM?	Phase 3 vaccine trials	WRAIR trial planned for Thai MSM
Can HIV acquisition be reduced through early treatment of HIV-positive MSM and oral daily PrEP?	RCTs with MSM who start ART early (vs deferred treatment), and oral daily PrEP (vs placebo), assess effect of an intensified adherence intervention vs standard of care, and monitor emergence of transmitted drug resistance for tenofovir and emtricitabine (Truvada)	..
Can treatment of primary substance use problems reduce HIV risk?	Assessment of pharmacological, behavioural, or combination protocols for efficacy in reducing HIV endpoints	..
Structural approaches		
How do stigma and homophobia or homophobia promote HIV risks? And how can we intervene to reduce these effects?	Integrative studies of how prevalent community factors shape HIV risks through networks and individual behaviours; intervention conceptualisation, development and testing to reduce stigma and homophobia or homophobia	..
What educational or behaviour change approaches lead to greater provider assessment of male-male sex risk, and provision of appropriate clinical services?	Development and assessment of interventions to promote ascertainment of male-male sex for current providers; development and assessment of curricula for training of medical providers; development, assessment, and implementation of systematic approaches to promote screening and prevention services specific to MSM within diverse health-care settings	..
MSM=men who have sex with men. PrEP=pre-exposure prophylaxis. SMS=short message service. ART=antiretroviral therapy. STI=sexually transmitted infections. RCT=randomised controlled trial.		
Table: A research agenda for MSM and HIV with questions to be addressed		

Appendix 2

Panel 3: Calls to action for a comprehensive response for MSM

Governments

- Reduce legal, regulatory, and structural barriers to access to health care for men who have sex with men
- Reform laws and policies that discriminate against citizens on the basis of sexual orientation and gender identity including repeal of laws that criminalise consensual sex between adults of the same sex
- Remove legal, regulatory, and administrative barriers to the formation of MSM or LGBT community organisations
- Ensure access to HIV prevention, treatment and care services, including access to condoms and safe lubricants for all men in prison and other forms of detention
- Provide training for police and other law enforcement staff to end harassment, arbitrary detention, ill-treatment, and abuse of MSM and other sexual minorities
- Publicly support programmes and policies that reduce stigma/discrimination against marginalised groups, and protect the human rights of all sexual minorities
- Dedicate adequate domestic funding to address health needs of MSM
- Include MSM in epidemiological surveillance and make results publicly available
- Include civil society, including MSM, in national health planning

Ministries of health

- Fulfil the right to health by ensuring non-discrimination in health-care services, reducing stigma and homophobia in health-care settings, and providing education to all providers in culturally competent care
- Markedly increase coverage of HIV services for MSM commensurate with need and disease burden
- Establish programmes for MSM health-care leadership development
- Hire and promote sexual and gender minorities in the health-care workforce
- Involve community leaders and representatives in health-care planning, management, and delivery for MSM, including through Global Fund Country Coordinating Mechanisms

Donors

- Address the current under-funding of the responses to HIV among MSM: current levels of coverage (10–20% of MSM worldwide having access to any targeted HIV prevention) must be increased five-to-ten fold to address the gaps

- Increase support for the research agenda for combination HIV prevention and care services for MSM
- Base funding priorities on the best available programmatic evidence to reduce disease burden—and make funding contingent on scientifically sound assessments of need for key populations, including MSM; because we know that MSM are present in every society, do not wait for detailed epidemiological studies to commit resources to addressing HIV among MSM
- Collect data and report on MSM-related HIV funding and programming you support, and make this information publicly available on websites, and through annual reports, and other mechanisms
- Provide assistance to ensure collection of epidemiological data on MSM and other most-at-risk groups
- Establish dedicated funding mechanisms to ensure adequate resources are provided to meet the needs of most at-risk groups, including MSM
- Provide direct funding to civil society organisations to deliver services and advocate for evidence-based, non-discriminatory policies
- Discontinue funding for non-governmental organisations that actively work against human rights and equality for sexual minorities
- Support capacity development for MSM civil society, and insist on their inclusion in decision making
- Establish a coordinated global donor strategy to improve public health outcomes for MSM in the HIV epidemic

Providers

- Act to reduce stigma and discrimination against sexual minority clients in health-care facilities
- Refrain from participation in health programmes that are not evidence based or that violate human rights, including so-called reparative therapy or conversion therapy
- Ensure training in culturally competent care for all personnel in clinical settings, including non-clinical staff (security, intake) who might interact with MSM
- Provide integrated services for mental health concerns and substance use for MSM in need. Substance-using MSM should be routinely screened for HIV and STIs
- For providers who care for adolescents and young adults, learn about local outreach agencies, hotlines, and media that can connect sexually questioning or LGBT adolescents with positive role models and social opportunities

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Researchers

- Ensure, whenever feasible and scientifically appropriate, the inclusion of MSM, including same-sex couples, in HIV research
- Advocate for and engage in research on the biology of anorectal transmission of HIV, and the identification of prevention targets for this mode of acquisition and transmission
- Engage with LGBT and MSM community partners in the design, conduct, and dissemination of research relevant to the community
- Assess the costs and cost-effectiveness of HIV prevention and treatment in MSM, including the patient and community perspective
- Expand operations research to develop, identify, and refine scalable HIV services for MSM
- Expand research on MSM-relevant issues in understudied regions, including Asia, Africa, the Middle East and north Africa, eastern Europe, and central Asia

Community members

- Demand that the human rights and dignity of MSM and other sexual minorities be promoted, protected, and fulfilled in all aspects of HIV policy and programmes
- Organise and participate in all aspects of LGBT rights and health
- Advocate for the development and scale-up of combination HIV prevention for MSM
- Coordinate across community groups in low-income, middle-income, and high-income countries to press for global responses to HIV in MSM. Support LGBT and MSM community groups in rights-constrained environments
- Monitor the work of governments, donors, and multilaterals and hold them accountable for adequate programming and policy to address HIV in MSM
- Create an accountability system that tracks policy, law, programming, and financing on the response to HIV in MSM

MSM=men who have sex with men. LGBT=lesbian, gay, bisexual, and transgender.
STI=sexually transmitted infection.