The invisible epidemic

Lack of recognition of homosexuality in many countries is hampering efforts to reduce HIV transmission among men who have sex with men. **Bob Roehr** reports

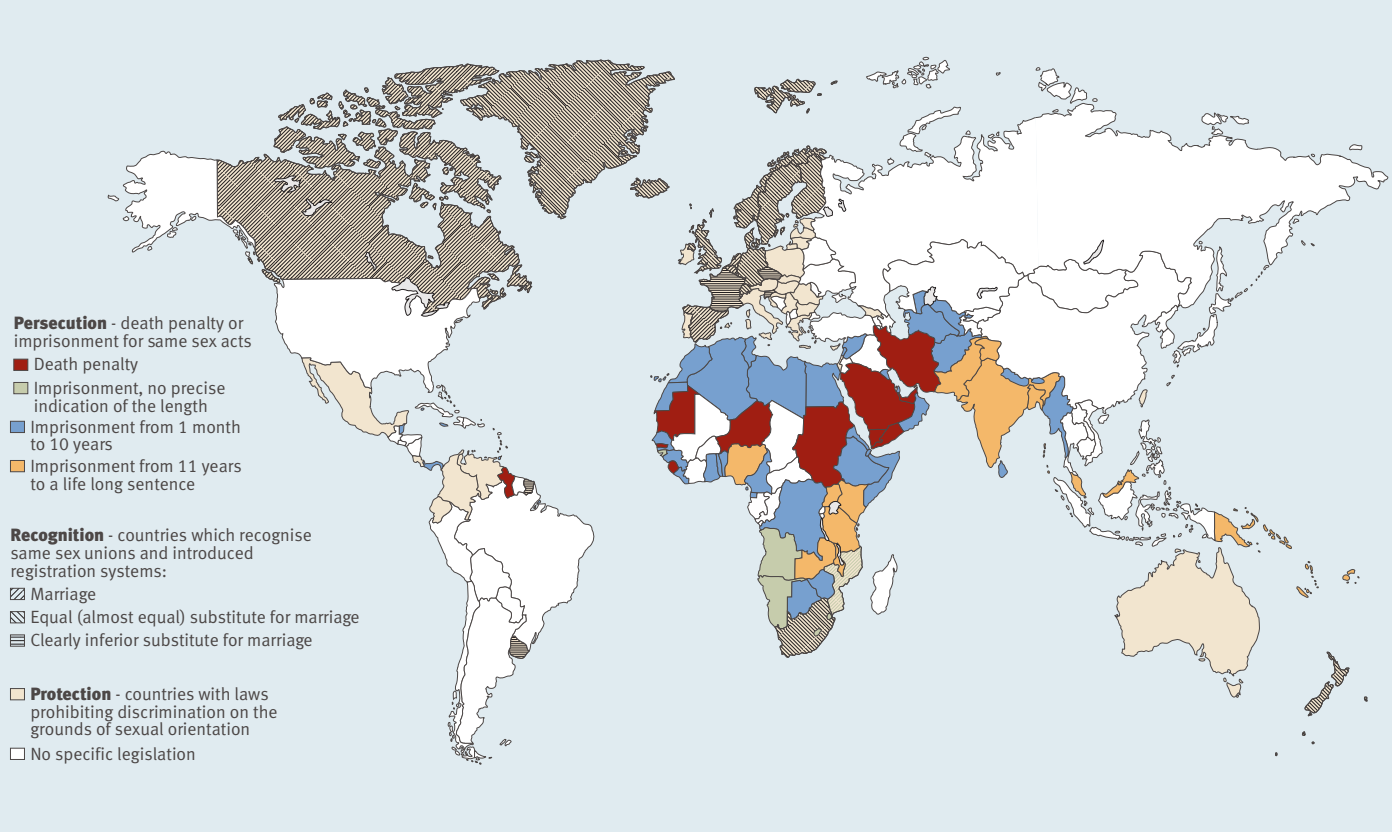

Fig 1 | Global attitudes to homosexuality (data from International Gay and Lesbian Association, www.ilga.org/map/LGBTI_rights.jpg)

Men who have sex with men are at the core of the HIV epidemic in every country in the world. But social and governmental denial, stigma, and violence against those who transgress sexual norms have helped to hide this fact and impede efforts to prevent new HIV infections.

At one extreme are Iraq and Iran, where religious fundamentalists have hunted down and killed hundreds of people whom they believe to be gay. Further along the spectrum are scores of nations where draconian sodomy laws are aggressively enforced, with penalties that include years in prison. Political and religious leaders in Botswana even tried to quash research into the subject, claiming that same sex activity did not exist in that country.

"General population heterosexual transmission is the major source in only two regions, Africa and the Caribbean," says David Wilson, lead health specialist of the global HIV/AIDS programme at the World Bank. But even in these regions, men who have sex with men are about four times more likely than heterosexuals to be infected with the virus, according to the scant data that are available.

A literature review published last year found that globally, men who have sex with men are 19 times more likely to be infected with HIV than the general population.[1] Dr Wilson says that, over the past five years, the global health community has come to realise that HIV epidemics are far more concentrated than previously believed and men who have sex with men are often at the centre, along with injecting drug users and sex workers.

Earlier this year, a report by the American Foundation for AIDS Research (amfAR)

MEN WHO HAVE SEX WITH MEN (MSM)

Epidemiologists created the term men who have sex with men because a substantial portion of men who engage in that activity do not identify themselves as gay and often do not respond to HIV prevention interventions designed to reach members of the gay community. The term applies to populations within developed nations and especially in developing countries, where there often is little or no open gay community.

STR/AP/PA PHOTOS

Iran hanged two teenagers in 2005 on charges of raping boys

DEVELOPED NATIONS

Developed nations are not immune to the forces of homophobia. More than half of all new HIV infections in the United States are attributed to male-male sexual contact, but that fact continues to be downplayed for political and cultural reasons.

Under the Bush administration, HIV prevention committees at the Centers for Disease Control and Prevention have seen an influx of people from the faith community, says Steve Morin, director of the Center for AIDS Prevention Studies at the University of California San Francisco. "They have been replacing epidemiologists with ministers."

Social pressures can be just as confounding, as City University London researcher Jonathan Elford found when he studied UK immigrant communities.[5] One second generation Indian immigrant told Dr Elford, he would "make himself into a straight man in a heartbeat, if he could."

"These men are living in two worlds— they are living in 21st century Britain and culturally in India," he said. "They also face the potential for marginalisation and discrimination both within their ethnic community and within the gay community."

blamed institutionalised homophobia and criminalisation of homosexual activity for facilitating the spread of HIV and "severely hindering efforts to provide treatment and prevention" for men who have sex with men.[2]

The International Gay and Lesbian Association's 2008 report found that consensual same sex sexual activity is a criminal offence in 86 countries.[3] Such acts can result in a prison sentence of 10 years or more in 21 countries and are punishable by death in seven countries (fig 1).

Inadequate data

Analysing data on HIV that 128 countries reported to the UN, the amfAR study found that almost two thirds of the countries surveyed had no information on the extent of HIV and AIDS among men who have sex with men, despite the fact that they were asked to report on five basic questions related to this group.

"Lack of data means lack of action. Without data on the HIV epidemic among [men who have sex with men] governments cannot assess the need for prevention and treatment programs targeting these populations," the report concluded.

The situation is worst in Africa. Although South Africa's constitution guarantees equality to gays, it is far ahead of social attitudes and the enforcement of those laws. Elsewhere on the continent, homosexual acts are often illegal and the laws are enforced.

Three gay, lesbian, and transgender activists were arrested in Uganda at a meeting in June this year organised by the US President's Emergency Plan for AIDS Relief, when they protested against their nation's lack of HIV prevention services for those communities. After they were released one of them, Usaam "Auf" Kukwaya, was abducted, held for 24 hours, and tortured by people claiming to be police.

"Men who have sex with men are systematically missing in most of our national surveillance systems," says Dr Wilson. He points to a recent study from the port city of Mombasa, Kenya, showing recent infections among these men as three times higher than among female sex workers. "It suggests that the female sex work epidemic is an old epidemic and is slowing down, but epidemics among [men who have sex with men] are new epidemics which are gaining momentum."

In Asia, modelling suggests that by 2020, half of all new infections will be among men who have sex with men. "What we are seeing today in Asia, in every single major city that we have looked at, are epidemics of HIV in men who have sex with men that remind me of what we saw in the US, western Europe, and Australia in the 1980s," Peter Piot, executive director of UNAIDS, told the Global Forum on Men Who Have Sex with Men and HIV early this year (fig 2). The Centers for Disease Control and Prevention estimate that the incidence of new HIV infections among this group in the US was concentrated in urban areas and peaked at about 75 000 a year in the mid-1980s and now is about half that number.[4]

Dr Wilson points to a survey of 10 000 people in Saigon where "not a single person acknowledged having sex with another man." It is emblematic of the problem that agencies and officials face in even understanding patterns of infection.

In Latin America, men who have sex with men constitute anywhere from half to 90% of local infections, according to surveillance data provided by those countries to UNAIDS. "It is massively higher than in sex workers," says Dr Wilson. "I don't think that is sufficiently understood." Yet prevention activities targeting this group are massively underfunded in most countries (fig 3).

IDENTITY AND PERSECUTION

Married men in Mumbai, India's largest city, were more likely than gay men to be infected with HIV, says Kenneth Mayer, a doctor with Fenway Community Health in Boston. They collaborated on the study with the Humsafar Trust, an Indian charity that works primarily with men who have sex with men and transgender people.

"In India, and I think it is probably true in other countries, if you are male identified, you are not effeminate at all, and you are married to a woman, you have met societal goals. It means that the man can do what he wants. He feels that I'm not really gay because I'm not like these other people; I have sex with a woman and I'm married."

Dr Mayer thinks it likely that prevention messages developed for gay men probably don't resonate with men who have sex with men but do not identify themselves as gay.

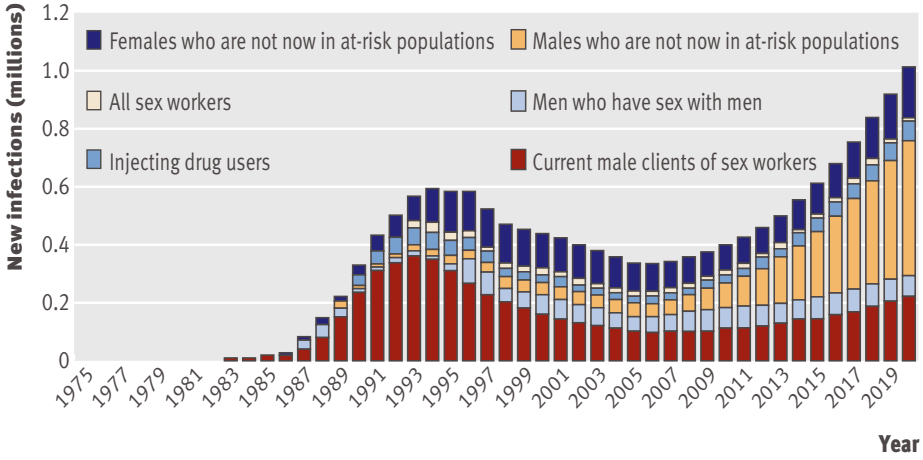

Fig 2 | Rates of new infection among sex workers and men who have sex with men in Asia

Changing attitudes

Dr Piot told the global forum that homophobia in all its forms is one of the top five obstacles to really stopping this epidemic and that a gay rights movement is essential—but many countries are nowhere near having one. "We need to do all that we can to support the emerging gay groups and activities . . . we have to develop strategies that not only support them, but also do not put our colleagues at risk," he said.

Steve Morin, director of the Center for AIDS Prevention Studies at the University of California San Francisco, highlighted Peru as a country that has witnessed this change. "In order to do HIV prevention there was a need to develop a gay community identity and a human rights movement in order to organise an HIV response," he said. The government supported these efforts by reining in official repression such as police raids on gay clubs and by funnelling a large portion of their HIV prevention funding through gay community based organisations. This gave the groups the resources to develop their capacity and skills and shape local interventions appropriate to the community.

But it's not just individual countries that need to make changes. Dr Piot believes structural changes need to be made at the administrative level by health officials—particularly at the World Health Organization—who understand the importance of the emerging epidemiological pictures of local epidemics. This will increase responsiveness to the HIV epidemic in men who have sex with men. "But if it has to go to the governance structures, then forget it," he says.

He cited two examples. At the 2001 UN General Assembly Special Session on AIDS, the first vote was whether the International Gay and Lesbian Human Rights Commission could participate as an observer in a round table discussion, which in his words was of "pretty marginal" importance. "We won the vote by one vote. I think if that vote were to be held today, we would lose it. There has been some regression," he says. Brazil is one country that has tried to get the rights of sexual minorities on the agenda of the United Nations General Assembly and it has always failed, he says. "It doesn't even get on the agenda to be voted on," he adds.

"We need to focus on sexual minorities, but we have to do it in such a way that governments with concentrated epidemics don't use this as an excuse to walk away from fighting AIDS," says Jeffrey O'Malley, who runs the HIV programmes for the United Nations Development Programme.

"We also have to make sure that we avoid the backlashes that can put people at real risk of violence and death . . . The way to do that is lead through the health service and health professionals." He says the UN family of agencies is assembling a unified approach to HIV and men who engage in same sex activity, which should be in place by the end of the year.

The Global Fund for AIDS, Tuberculosis, and Malaria is also tinkering with its funding guidelines to assure inclusion of men who have sex with men in national HIV plans. Programme manager David Winters acknowledges that over the first five years of the programme, although there was never resistance to funding programmes for men who have sex with men or for women and girls—neither have been very visible.

The fund's guidelines were recently revised so that the default position is for inclusion of programmes for women. A similar inclusionary revision is underway for men who have sex with men and should be implanted next year. Mr Winters says the assumption should be that men who have sex with men everywhere are disproportionately affected by the epidemic; "Make that the given and ask countries to prove otherwise" in their competition for funding.

AIDS advocates hope that the clearer epidemiological picture of each local HIV epidemic that continues to emerge with better surveillance, combined with structural changes at the international funding organisations will better meet prevention needs among men who have sex with men. Without such changes, this group will continue to be a major driving force in perpetuating the HIV epidemic throughout the world.

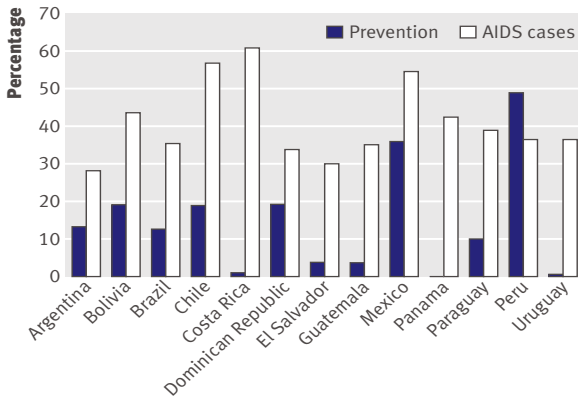

Fig 3 | Spending on prevention of HIV infection in men who have sex with men and proportion of infections

CULTURAL COMPETENCE IN TREATING GAY PATIENTS

Most doctors are altruistic; they want to help people. They are also data driven; they know if they don't understand something, they are going to do a bad job. They are amenable to education, says Kenneth Mayer.

Those central ideas were behind the creation of *The Fenway Guide to Lesbian, Gay, Bisexual and Transgender Health*.[6] Fenway is a leading Boston clinic serving a predominately gay clientele. Dr Mayer is one of the editors of the guide, the first comprehensive educational tool serving gay patients.

He says cultural competence is important when dealing with every patient. It includes understanding the epidemiological and biological prevalence of disease within certain populations, as well as patients' world views. With lesbian, gay, bisexual, and transsexual patients it includes understanding patterns of sexual activity and risk. Patients often will not disclose their sexual orientation to their physician, and people may engage in same sex acts without identifying them as such.

That can be true in cosmopolitan and relatively accepting environments such as New York City, where a recent study[7] found that 39% of men who have sex with men did not disclose that activity to their healthcare providers. That rate will only go up in societies where stigma and discrimination against gays is greater. Other studies have found that many physicians are reluctant to ask about any sexual activity, particularly that which carries social stigma.

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Competing interests: He has written a book about AIDS in Africa and consults for organisations working on AIDS prevention.

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AIDS and the irrational

The director of UNAIDS, Peter Piot, is stepping down in the next few weeks. In an open letter to his replacement, **Helen Epstein** argues that the agency should give the issue of concurrent partners high priority in combating HIV in Africa

In a recent survey of HIV positive South Africans, almost half believed that traditional African medicine is more effective than antiretroviral drugs.[1] This is upsetting news. The country has invested heavily in antiretroviral drugs, rapid HIV tests, CD4 cell counters, and condoms and is the site of many clinical trials into novel treatments and HIV prevention devices. In the midst of all this technology, why do irrational beliefs about AIDS persist?

The reasons are complex. AIDS advocacy groups attribute misconceptions about AIDS to sexual shame and the misguided leadership of former president Thabo Mbeki, who questioned the relation between HIV and AIDS. However, rumours about AIDS—that it is caused by witchcraft, US backed germ warfare against black people, or some foodborne poison—are common everywhere.[2] In Nigeria, for example, a barber recently told a reporter that three quarters of his clients bring their own clippers because of fear of AIDS—even though there has never been a documented case of HIV transmission through hair dressing.[3]

Unfortunately, the international public health community, and the Joint United Nations Programme on HIV/AIDS (UNAIDS) in particular, may be contributing to the mystification of AIDS in Africa by promoting a needlessly overcomplicated view of the epidemic that has sown confusion among researchers and ordinary Africans alike. Although UNAIDS can be proud of its success in getting most governments around the world to face up to AIDS, it must also face up to its failure to help the most severely affected communities understand the causes of the epidemic.

The root of the problem may lie in the agency's mandate. UNAIDS is both the most trusted source of scientific information on the global epidemic and an adviser to governments about how to tackle it. Unfortunately, these two goals are seldom compatible, especially given the heated competition over the vast amounts of money now devoted to AIDS.[4]

The intrinsic tension between politics and science has been especially acute when it comes to answering two of the most vital questions in AIDS prevention: Why is the epidemic in Africa so severe? And what are the best ways of dealing with it? Although it is difficult to generalise, UNAIDS's official explanation for the African AIDS epidemic is that it is due to many complex factors, including structural and gender inequalities, migration patterns, urbanisation, and other influences on the size and sexual behaviour of so called core groups—that is, sex workers and their typical clients (truck drivers, mine workers, soldiers, traders, and other migrant men).[5 6] However, studies show that age adjusted HIV infection rates in southern Africa are nearly as high in the general population as they are among sex workers and migrant labourers.[7-9] Furthermore, surveys from across the continent find that lifetime numbers of sexual partners in African countries tend to be similar to those in many Western countries,[10] and much lower than in many countries in Asia, where formal prostitution is far more common.[11-13] Yet HIV prevalence is orders of magnitude greater in southern Africa than in either Asia or the West.

This paradox is apparent not only to AIDS researchers, but also to people who have watched numerous non-promiscuous friends and relatives succumb to the disease. This may partly underlie the general mistrust of official AIDS information and a search for other explanations. It may also help explain why so many people in Africa still do so poorly in surveys of AIDS related knowledge—especially when it comes to answering

RISKS OF CONCURRENCY COMPARED WITH SERIAL MONOGAMY

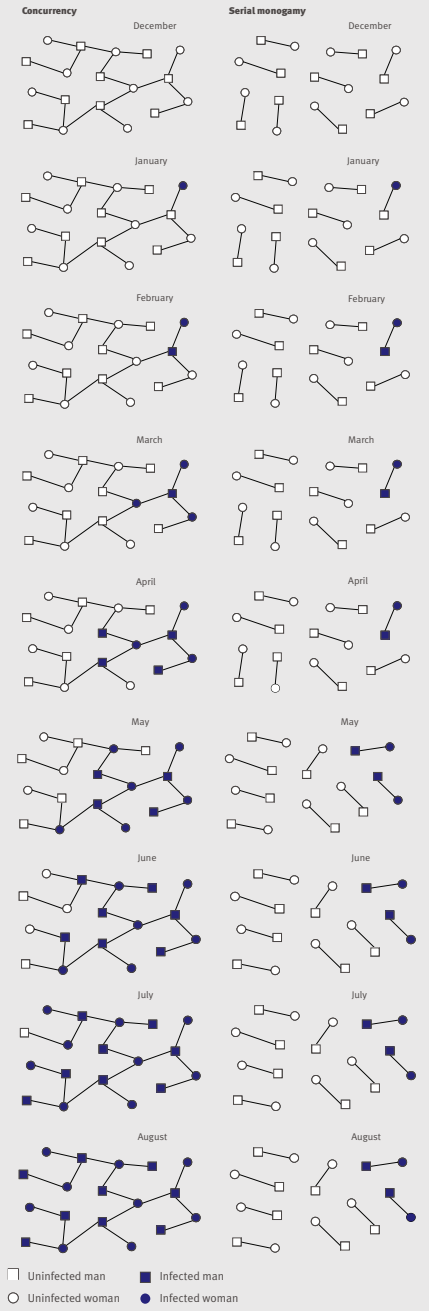

Illustration of spread of HIV infection with concurrent and serial relationships

If a man has two partners, his risk is the same whether they are concurrent or serial. However, his concurrency hugely affects his partners' risks, because both partners are now linked through him, and thus at risk not only from him directly, but from each other, indirectly too. If one of his partners is infected, the other will become infected right away, if they are concurrent. If he has those partners sequentially, the infection spreads much more slowly from one woman to another—because he has to break up with one and then find the other, which could take months, years, or decades. Viral load will also be lower by then, which makes serial monogamy even safer.

UNAIDS ON LONG TERM CONCURRENCY AND BEHAVIOUR CHANGE

Long term concurrency

Until 2008, UNAIDS statistical reports on sexual behaviour did not include information on multiple sexual partnerships, let alone long term concurrency. Although UNAIDS surveys did report sex in the past year with a "non-regular" partner, this variable fails to capture people who have multiple long term partners, and who are thus at high risk of infection themselves and of passing the infection to others.

Until 2006, the public documents of UNAIDS did not mention long term concurrency.[26] Then, the agency's 2008 report on the global AIDS epidemic used a flawed analysis of two epidemiological studies to cast doubt on the concurrency hypothesis, and ignored a large body of evidence in favour of the theory (see bmj.com). UNAIDS still has no best practice document dealing with the risks posed by networks of long term concurrent relationships.

The agency is currently using mathematical models to characterise the epidemic in various African countries. However, these "Know your Epidemic, Know your Response" studies rely on models that do not account for long term concurrency and make assumptions about sexual behaviour that behavioural studies do not substantiate.[27]

Importance of partner reduction

For years, the agency misrepresented the fall of HIV prevalence in Uganda as being the result of condoms and abstinence,[28] even though independent reports showed that partner reduction was the most important behavioural shift.[29-31] Likewise, UNAIDS has consistently attributed the HIV declines in Thailand and the US gay community to condoms alone, even though partner reduction played a prominent part in these cases too.[11 24] The UNAIDS 2008 report also stated that increases in multiple sexual partnerships occurred in countries where infection rates had recently declined,[32] even though evidence for such increases does not exist.[21 33]

questions about HIV transmission through casual contact such as barber's shears. The problem may not be lack of knowledge but disbelief about what they have been told about so called "risky" behaviour.

Patterns of sexual behaviour

Multiple concurrent partnerships provide a compelling, if partial, resolution of the apparent paradox of Africa's high HIV infection rates.[14] Although African people may not have more sexual partners than those in other countries, they are more likely to have two or three long term concurrent partners (reference box). This pattern of behaviour gives rise to an interlocking network of sexual relationships that creates a superhighway for HIV. If one person is infected, everyone is at high risk, including those with only a few long term partners, or even only one (box).[15] Casual and commercial sex remain important risk factors, but "long term concurrency" probably explains why HIV in Africa has spread so rapidly beyond typical "high risk groups" such as sex workers.

Recent randomised trials have shown that circumcised men are 60-70% less susceptible to HIV than uncircumcised men.[16] This has led to the theory that the explosive spread of HIV in the 11 countries along the east and southern arc of the African continent, where national prevalences range from 6% to 24%, is largely attributable to high rates of long term concurrent partnerships and low rates of male circumcision.[17]

Concurrency and male circumcision do not explain everything about AIDS in Africa; nor do they imply a simple solution. Nevertheless, behaviour change, especially partner reduction, may be the fastest way to reduce the spread of HIV in this part of the world. Male circumcision is also important, but it is only partially effective in reducing HIV risk, safe affordable circumcision services are still rare in most African countries, and many men may not want to be circumcised. No other intervention to prevent sexual transmission of HIV has proved effective at a population level, including promotion of male and female condoms, probably because condoms are seldom used in the long term relationships in which most HIV transmission in Africa occurs.[18]

On the other hand, reductions in sexual partners have been the dominant factor wherever infection rates have fallen in Africa, and the causes have been properly investigated.[19] In Uganda, a 60% fall in casual partnerships coincided with a 70% fall in HIV prevalence during the 1990s,[20] and similar, though less pronounced, changes in behaviour have also been observed in Zimbabwe and Kenya, where HIV prevalence has fallen more recently.[21] The researchers didn't determine whether people cut back on casual, commercial, or longer term concurrent partnerships, but it may not matter, because in the presence of a "concurrency superhighway" all unprotected sexual encounters are very risky.

Increased condom use also contributed to these declines, but where condom use alone has increased and partner reduction has not occurred, HIV infection rates have not fallen.[22] Universal monogamy is an impossible goal anywhere, but mathematical modelling studies suggest that even small changes in the fraction of people with multiple partnerships can decrease everyone's risk by breaking up transmission pathways (Morris M, unpublished data).[23] When most transmission occurs in long term relationships, only unrealistically high rates of consistent condom use would achieve the same effect. Even the falls in HIV prevalence in the US gay community and Thailand were accompanied by steep drops in multiple partnerships, along with increases in consistent condom use.[11 24]

Although strong evidence for the importance of long term concurrency has been available for at least a decade, even today, few, if any, school based AIDS education programmes in Africa warn young people of the dangers that the concurrency superhighway poses to everyone, including those with few, or even just one, trusted long term partner. Instead, most youth prevention programmes continue to stress abstinence, condoms, and youth friendly reproductive health services.[25] Thus many young people with only a small number of concurrent relationships, or with a single partner who has another, concurrent relationship, don't see how risky their behaviour really is.

Far more research on concurrency is needed, but many technical agencies and African leaders now recognise the urgency of developing programmes to address it. Thus it is disappointing that the UNAIDS secretariat has such a poor record of clarifying the scientific issues surrounding it (box). This not only slows the fight against AIDS, but raises questions about the agency's credibility.

UNAIDS director Peter Piot and colleagues recently warned that addressing multiple concurrent partnerships should not be seen as a

Children playing the "Risk Game" in Accra. But shouldn't concurrent relationships feature on one of the cards?

"magic bullet" solution.[34] They recommend "combination prevention," the elements of which include campaigns to encourage abstinence, faithfulness, and condom use; male circumcision; voluntary HIV counselling and testing; treatment of other sexually transmitted diseases; research into technologies such as vaccines, microbicides, and pre-exposure prophylaxis with antiretroviral drugs; and programmes to tackle "structural factors" such as gender and economic inequalities that may promote risky behaviour.

Although all these recommendations are sensible, only male circumcision has been shown consistently to reduce HIV transmission in Africa. Other elements of the combination have had little effect on HIV incidence in the generalised epidemics in east and southern Africa.[18 22 35-37] One reason may be that none of these programmes provided their target groups with information about the risks of multiple concurrent partnerships, as opposed to unprotected casual sex in general—nor did they deal with the question of why so many African people who don't engage in typical high risk behaviour contract the virus. In Thailand and in the gay communities of the West, the causes of the explosive spread of HIV were obvious early on, and thus people knew how to protect themselves, and did. In Africa, many people realised too late that their greatest risks came not only from sex workers and casual sex but from the people they are closest to—their spouses and other long term partners.

The concurrency hypothesis in no way implies the superiority, moral or otherwise, of one culture over another—except when it comes to HIV

Fresh perspective

The most urgent task facing the new UNAIDS director will be to shift the debate over HIV prevention in a more rational direction, as some within UNAIDS, especially the regional support team for southern Africa, have already done.[14] There are legitimate concerns that raising issues of sexual behaviour necessarily implies a moralistic prescription for HIV prevention. However, the concurrency hypothesis in no way implies the superiority, moral or otherwise, of one culture over another—except when it comes to HIV risk. Talking about sex is never easy, and talking about differences in the sexual behaviour of different peoples in different parts of the world is even harder. But with millions of African people dying from AIDS, we had better start doing it.

The near exclusive emphasis on so called high risk behaviour may be the most destructive misconception about AIDS in Africa. It has probably hindered prevention, promoted denial and stigma, and, by implying that people with HIV are necessarily "promiscuous," contributed to HIV associated domestic violence.[38] It has also promoted the dispiriting sense that there is no rational approach to HIV prevention in Africa, that behaviour change is futile, and that Africans must await further technological wizardry from Western laboratories. This undermines the sense of community ownership that many health officials support. So what policy changes should UNAIDS's new director make?

Recommendations

UNAIDS and its governing board should re-evaluate the agency's political and scientific roles. In particular, scientific issues should be addressed through a more open process of research and peer review, rather than authorised by a single, largely unregulated UN agency.

UNAIDS should recommend that education about concurrency be integrated into all AIDS programmes in Africa, including those aimed at schoolchildren and young people. Such education should stress that although delay of sexual debut is a sensible goal, personal fidelity is no guarantee of protection against HIV if the partner one eventually ends up with has even one other concurrent partner.

Behaviour change has been most successful when collective and accompanied by changes in norms and values.[39] This is especially true for HIV prevention, because risk of infection is determined not only by personal behaviour but by the behaviour of others. Discussions about concurrency and its implications for sexual relationships could help mobilise broader social change throughout the network, as happened in Uganda and in the US gay community.[40] UNAIDS should encourage such discussions through workshops and peer led community meetings, which have already shown promise in improving gender communication and reducing domestic violence.[35]

In generalised epidemics, virtually all sexually active people are at risk, and it is this collective recognition of a shared calamity that seems to have been crucial to motivating collective behaviour change among gay men and in Uganda. Therefore, UNAIDS should ensure that the routine testing programmes now expanding across the African continent avoid, as far as possible, creating artificial moral distinctions between people who are and are not HIV positive.

Sexually transmitted infection services are ideal settings for HIV counselling, but UNAIDS should advise programmes to stop telling people that having their sexually transmitted infection treated will protect them from HIV, since there is scant evidence that this is the case.[41]

Finally, the agency should continue to advocate for research into vaccines, microbicides, and other novel prevention technologies, but it should also recognise that much could be achieved without them

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