



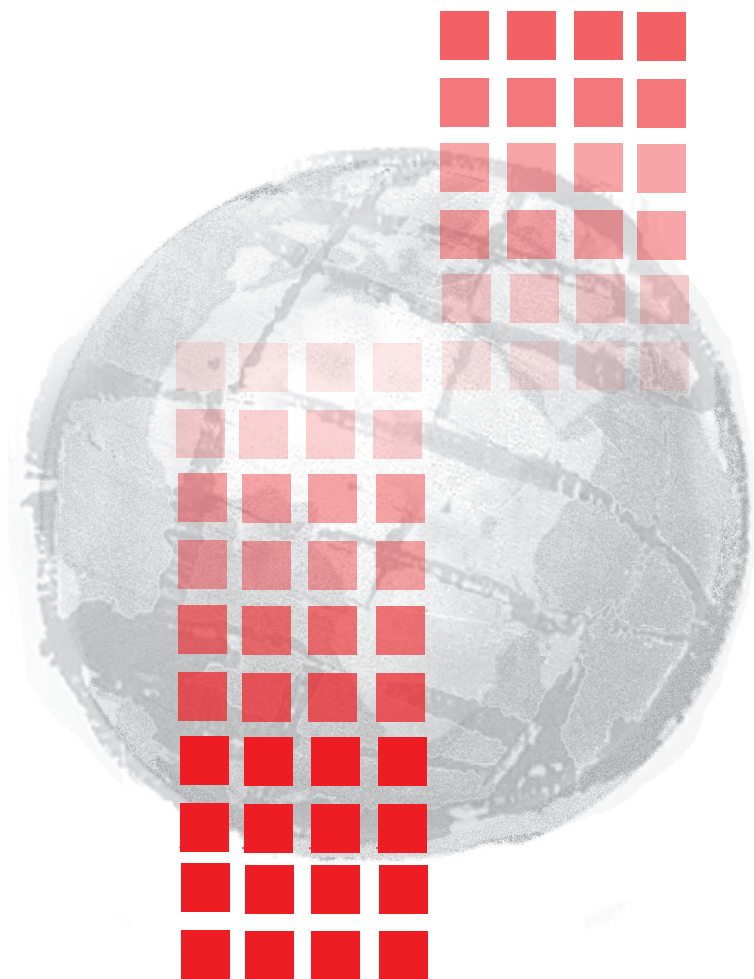
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Making condoms work for HIV prevention



United Nations Population Fund

UNAIDS BEST PRACTICE COLLECTION



Cutting-edge perspectives

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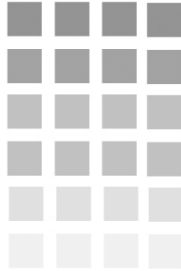
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Making condoms work for HIV prevention

Cutting-edge perspectives

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Table of contents

Preface	6
Introduction: making condoms work for HIV prevention	7
How do condom promotion and other prevention strategies interact? ...	8
Synergies between multiple interventions	8
Learning from successes	9
<i>The Thai lesson: targeting condom promotion</i>	9
<i>The Ugandan lesson: changing social norms as a foundation for behavioural change</i>	10
<i>Common elements for success</i>	11
Condoms and the combination behavioural change approach	13
How effective are condoms?	15
Consistent condom use.....	16
Can people be convinced to use condoms?	16
General population.....	17
Persons in steady sexual relationships	17
Among men who have sex with men (MSM).....	18
In the sex industry	19
Among young people	19
How can condom promotion programmes be more effective?	21
Are condom supplies sufficient to reach those who need them?	22
Resources to meet the demand	23
Getting condoms to those who need them most.....	24
How can we move condoms and HIV prevention forward?	25
References	28

Preface

With HIV continuing to spread across all regions of the world, effective HIV prevention programmes must be rapidly scaled up to match the scope of the AIDS epidemic. The range and mix of interventions needed vary by country depending on local epidemiology and sociocultural context. They should include, but not be limited to, education on the ‘ABCs’ of prevention (abstinence/delayed sexual initiation, being safer by being faithful to one’s partner/reducing the number of sexual partners, and correct and consistent condom use), treatment and care of sexually transmitted infections, voluntary counselling and testing services, prevention of mother-to-child transmission, harm reduction, safe blood supplies and medical injections, and addressing discrimination and stigmatization.

Condom promotion plays an important role in HIV prevention. The question is how to position this successful public health strategy within a comprehensive HIV prevention strategy which includes the promotion of informed, responsible and safer sexual behaviour.

This ‘cutting-edge perspective’ publication draws attention to policy and programme implications of insights on the role of condoms gained from scientific studies and programme experiences. Its goal is to assist AIDS programme providers and decision-makers with particular responsibilities in condom programming, and key community leaders who influence decisions on reproductive health in their constituencies to position condom use optimally within overall prevention programming in their communities and countries.

Introduction: making condoms work for HIV prevention

Condoms play an important role in HIV prevention. The question is not whether condom promotion is a successful public health strategy for HIV prevention but how to effectively position the use of condoms within a comprehensive HIV prevention strategy. Condom programming¹ is an integral component in a range of prevention strategies which include informed, responsible and safer sexual behaviour exemplified by delayed age of onset of sexual activity, abstinence, condom use and reduction in the number of sexual partners.

Analysis of the scientific literature on condoms and HIV prevention² and study of the experiences of various prevention programmes show that, to achieve the full prevention potential that condoms offer, four critical elements must be addressed.

These are:

- realizing that there are interactions between condom promotion, including condom social marketing and peer-based condom education, and other prevention strategies;
- understanding and correctly communicating information on the effectiveness of condoms;
- convincing people to use condoms when they are needed and to do so consistently and correctly; and
- ensuring a sufficient and regular supply of condoms for those who require them.

This document draws attention to insights in these areas gained from both studies and programme experiences. The policy and programme implications of these insights can assist AIDS programme providers, decision-makers with particular responsibilities in condom programming, and key community leaders who influence decisions on reproductive health in their constituencies to position condom use optimally within overall prevention programming.

How do condom promotion and other prevention strategies interact?

An important area that has received surprisingly little scientific attention is the interaction between condom promotion and other strategies in reducing the transmission of HIV. Examining condom promotion in isolation from other strategies gives, at best, a narrow view of HIV prevention. The optimum role of condom promotion in a comprehensive AIDS prevention programme depends on several factors including local epidemiology, the populations being targeted and the sociocultural context. Condom promotion and other prevention interventions have to be balanced so that they work in synergy to achieve the greatest overall impact.

Synergies between multiple interventions

The use of combination approaches in HIV prevention is recognized as sound strategy. Multiple interventions complement each other and compound the impact for curbing the epidemic. For instance, reducing the average number of sexual partners that persons have in a given population could cut the rate of transmission of HIV just as much as an increase in the numbers of people consistently using condoms. If both these changes were achieved simultaneously, the reduction in the rate of transmission would likely be more than the additive effects of the two interventions on their own. The greater the number of effective strategies employed, the greater the potential for achieving maximum overall impact.

In settings where resources are constrained, decisions on the best possible mix of interventions are usually made on the basis of cost-effectiveness. Interventions that score highly are more likely to pull in financial support. Systematic monitoring and evaluation of the effectiveness of interventions can provide useful information on whether combined interventions are working in harmony toward desired prevention objectives.

Programmes that promote use of the female condom have demonstrated that different risk-reduction strategies can reinforce one another. The female condom provides women with an additional option to protect themselves from both pregnancy and infection. Female condom acceptability studies in Tanzania, Zimbabwe, Senegal, Costa Rica, Indonesia, and Mexico show that women find the female condom empowering, as it provides an opportunity for improving dialogue within couples on the issues that put them at risk, such as sexual partners external to the relationship³.

Other success stories indicate positive interactions between different approaches, with some interventions leading to outcomes beyond those intended. Programmes in several countries have shown that positive interactions among prevention interventions can stabilize or reduce HIV prevalence. A condom promotion campaign directed at male port workers in Brazil had the unexpected result of not only increasing condom use among these men but also decreasing the proportion of men who reported having sex with casual partners⁴. Senegal's prevention efforts, which began in the mid-1980s, led to high levels of knowledge about HIV prevention in the general population and to unexpectedly high rates of condom use with non-regular partners, particularly by sex workers and their clients. Prevention programmes in Thailand and Uganda are outstanding examples of the effectiveness of comprehensive programmes including condom promotion leading to reductions in HIV transmission. Condom promotion played a different role in each of these two countries' successes.

Learning from successes

The Thai lesson: targeting condom promotion

Condoms clearly played a key role in HIV prevention efforts in Thailand. Promoting the use of condoms in sex work venues such as brothels was the core strategy of the Thai 100% Condom Use Programme, but other interventions—such as substantial health education, sexually transmitted infection (STI) control, HIV testing, and clinical care for persons with HIV-related disease—played supporting roles. The success of the 100% Condom Use Programme's implementation was rooted in strong political commitment and support at all levels, including that of government officials, local health workers, nongovernmental organizations (NGOs), the media, brothel owners, and the public in general. The pattern of the epidemic in Thailand in the late 1980s mandated the need for a prevention strategy targeting sex work venues, at a time when unprotected sexual activity was the driving force of the Thai epidemic.

Two major behavioural changes took place: condom use increased in sex work settings, as was intended, and the frequency of visits to sex workers by men fell dramatically, an unanticipated outcome. The proportion of 21-year-old men who indicated visiting a sex worker in the past year fell from nearly 60% in 1991 to 8% in 1998 while condom use during commercial sex transactions rose to more than 95% of all acts in 1998⁵. These changes were the result of greater awareness of risk generated by the 100% Condom Use Programme. The programme's effectiveness was evident in the rapid drop in sexually transmitted infections (STIs) among men reporting at government clinics

and, in particular, among male military conscripts (a fairly representative sample of men in their late teens since conscription in Thailand is primarily by lottery). Although the programme did not explicitly aim to discourage commercial sex, increased risk awareness apparently caused large numbers of men to avoid visits to sex workers.

The Ugandan lesson: changing social norms as a foundation for behavioural change

Uganda's experience provides a different perspective on the role of condom promotion as a prevention intervention. The country responded to the AIDS epidemic with a multisectoral approach backed by full commitment at all levels. The President and other high-ranking government officials gave their support and leadership to these efforts, and this helped to cultivate open discussion and involvement by all sectors of society.

De-stigmatization and open communication were key aspects of the Ugandan response to AIDS. Communication on sensitive topics was made easier as a result of public disclosures by prominent Ugandans of their HIV-positive status early in the epidemic, active support services for counselling and testing by a community organization, and personal interactions with people living with HIV. The courage and willingness of the Ugandan population to face the challenges of the AIDS crisis were evident in the fact that a greater proportion of Ugandans compared with populations in other African countries personally knew someone with HIV.

It would be wrong to conclude that condoms played no part in the Ugandan experience, just as it would be wrong to say that condoms were entirely responsible for Thailand's success. Although the Ugandan Government never opposed condoms, it did not place condoms in the top priority position in its HIV prevention messages. Instead, prevention efforts focused on delaying sexual debut in young people, being safer by being faithful to one's partner (often referred to as 'zero grazing'), and using condoms—roughly in that order⁶.

So why did HIV incidence rates fall in Uganda in the late 1980s and early 1990s? The available evidence suggests that the main cause was a substantial change in sexual behaviour and, particularly, a reduction in the number of non-regular sexual partners. Simulation models confirm that the fall in HIV incidence in Uganda is consistent with roughly 50% reduction in casual sex⁷. For example, in 1995, 26% of young men and 15% of young women between 15 and 19 years of age reported having sex with a non-regular partner in the previous 12 months, compared to 59% and 31% respectively in 1989.

The major decline in HIV incidence clearly happened before large-scale condom promotion was incorporated into HIV prevention efforts. Condom promotion was not given greater emphasis in Uganda until the early 1990s. However, widespread debates about condom promotion among political and religious leaders played a constructive role early on in Uganda's response to the epidemic because they encouraged people to think and talk about AIDS. As controversy over condoms faded, the promotion and use of condoms became generally accepted as a necessary component of HIV prevention efforts. Social marketing of condoms got off the ground on a large scale in the mid-1990s. The Ugandan Demographic and Health Survey (DHS) conducted in 2000–2001 showed that, among the 15–24-year-olds in Uganda who had non-cohabitating partners, 44% of the women and 62% of the men used condoms during their most recent sexual interaction.

Overall rates of condom use were comparatively low at the time that incidence rates began declining. However, even low levels of condom use in the overall population can still make a difference as long as condom use is higher among those subgroups of the population that are at highest risk. This may apply in Uganda, where condom use in commercial sex was high⁸. Also, rates of condom use among young people, compared to older adults in general, possibly contributed to the decreased HIV incidence observed in that age group.

Common elements for success

There are common elements to these success stories. In general, both Thailand and Uganda:

- responded to the AIDS epidemic quickly and decisively;
- had leadership commitment from the highest levels for active involvement in their respective HIV-prevention programmes;
- used a multisectoral approach and achieved broad public consensus for support;
- avoided stigmatization and included important aspects of care for HIV-infected persons;
- developed local responses to a locally-perceived threat;
- benefited from international public health and scientific collaboration; and
- had international donors playing essential roles in programme financing.

While the two programmes differed in their emphasis on particular preventive measures, there were some noteworthy parallels underlying each programme’s success.

Thailand	Uganda
Programme emphasis on condom use, especially in sex work venues such as brothels:	Programme emphasis on partner reduction:
Did not discourage reducing number of sexual partners	Did not discourage condom use
Thais reduced their number of sexual partners, particularly those involving commercial sex transactions	Ugandans reduced their number of casual sexual partners
Public promotion of condom use led to an increase in condom use and a decrease in the number of sexual partners, which was additive to the increased condom use	Public debate about condom use led to an increase in condom use in the general population, particularly among young people and in sex work, which was additive to the decline in the number of sexual partners

The difference in programme emphasis between use of condoms and reduction in the number of sexual partners appears more related to differences in local epidemiology—namely differences in the prominence of commercial sex in HIV transmission—than to differences in philosophy.

These two countries’ responses to the HIV epidemic were based on correct assessment of the main factors driving their epidemics and an understanding of local sociocultural characteristics. Thailand’s emphasis on condom use in sex work venues would not have worked in Uganda as this factor was not driving the Ugandan epidemic. A Ugandan-style programme emphasizing partner reduction for the general population probably would not have worked well in Thailand. In both cases, what did work was a determined, multisectoral effort that enlisted broad public support and responded to local realities.

Condoms and the combination behavioural change approach

The continuing debate on the place and role of condom promotion in HIV prevention programmes particularly for young people has generated mixed messages. These tend to confuse young people and constrain consensus as to what works for youth. This controversy illustrates concern about the interactions between condom promotion, on the one hand, and other behavioural change approaches (particularly those aimed at sexual abstinence) on the other. At the root of this concern is a fear that condom promotion may increase sexual activity and may encourage people to have more sexual partners⁹.

Reproductive health programmes for young people, including sexual health education, have been investigated extensively to determine whether condom education and promotion have, in fact, resulted in young people switching from abstinence to sexual activity with condoms. A review in 2002 identified 41 studies that examined programmes with condom education components. These programmes were based in schools or in the community, or were carried out through the mass media, workplaces or health facilities¹⁰. Almost all resulted in improved knowledge and attitudes, and many produced an increase in contraceptive use. Seven of the programmes showed a significant impact in the direction of reduced sexual risk (in terms of delayed sexual initiation or reduced number of sexual partners). It may be noted that most of these studies did not specifically focus on condom promotion interventions.

This conclusion reinforces the need for a range of prevention options for young people, covering the full spectrum of sexual behaviour. It is important to offer adolescents choices for HIV prevention. This combination behavioural change approach has been labelled as ABC—i.e., **A**bstinence, including delay of sexual initiation or debut, **B**eing safer by being faithful to one's partner or reducing the number of sexual partners, and **C**orrect and consistent **C**ondom use (see box). Providing information and education on a range of safer sexual behaviours is consistent with current empirical evidence of the diversity of young people's sexual behaviours.

Box 1. The ABCs of HIV Prevention

(A) Abstinence refers to not engaging in sexual intercourse

Sexual expression is a natural and healthy part of life, however, for certain periods during one's life, one may choose to abstain from all sexual expression or from higher-risk activities such as penetrative sexual intercourse. Prevention strategies encouraging delay of sexual initiation or debut help young people to postpone sexual intercourse until they have developed the personal and social skills that will enable them to practise protected intercourse. The goal of delay-oriented programmes is to facilitate the development of young people's capacities for informed decision-making regarding their sexual health, including the prevention of pregnancy and sexually transmitted infections (STIs), including HIV. Whether abstinence occurs as a delay of sexual debut or as adoption of a period of abstinence at a later stage, access to information and education about alternative safer sexual practices is critical to avoid HIV infection on sexual initiation or resumption of sexual activity.

(B) Being safer by being faithful to one's partner or reducing the number of sexual partners

The lifetime number of sexual partners is a very important predictor of HIV infection. Thus, having fewer sexual partners reduces the risk of HIV exposure. However, strategies to promote faithfulness among couples do not necessarily lead to lower incidence of HIV unless neither partner has HIV infection and both are consistently faithful.

(C) Condom use refers to consistent and correct use of condoms, both male and female

Effective condom promotion within a combination prevention strategy must involve the equally important and interrelated components of informed choice, empowerment, supportive environment, demand and supply. To meet the needs and socioeconomic conditions of all population groups, greater access to, and availability of, condoms should be ensured through diverse channels, including free distribution, commercial sale and social marketing programmes. Condoms need to be actively promoted among sexually active young people and other populations at higher risk of HIV exposure such as sex workers and their clients, men who have sex with men (MSM), and people with HIV and their partners. Studies conducted by the US National Institutes of Health and the US Centers for Disease Control and Prevention (CDC) have found that, without access to condoms, other prevention strategies lose much of their potential effectiveness. In addition, for young people, condom education and promotion are most effective within the context of life-skills education to help them make responsible decisions related to sexual behaviour and reproductive health.

Reproductive health programmes for young people vary in their approach. Some are fairly explicit (e.g., by demonstrating the correct use of condoms). Most, however, are basically conservative in their approach and encourage delay in sexual initiation and limiting the number of one's partners. Some studies indicate that more explicit approaches that include skills training—i.e., how to use condoms correctly and how to negotiate their use with partners—may produce greater reductions in sexual risk than programmes that provide only information^{11,12}. However, even the more explicit condom promotion programmes for adolescents seldom emphasize 'eroticizing safer sex'. This approach is more commonly taken in prevention programmes aimed at key populations at risk, such as men who have sex with men or sex workers and their clients.

If protected or safer sex is promoted as part of an array of means, which also include abstinence, and partner reduction, aimed at preventing sexual transmission of HIV, there is greater likelihood that strategies will complement and mutually reinforce each other. In different situations, the emphasis placed on each strategy will differ in accordance with epidemiological, contextual and behavioural evidence.

How effective are condoms?

Compelling international evidence has been gathered by the US Department of Health and Human Services and the United Nations Population Fund which shows that consistent use of latex male condoms is a highly effective method for preventing HIV transmission. Scientific research by the US National Institutes of Health and World Health Organization (WHO) found "intact condoms...are essentially impermeable to particles the size of sexually transmitted disease pathogens, including the smallest sexually transmitted virus".

Four meta-analyses of condom effectiveness put the range at 69–94%^{13,14,15,16}. Conclusive evidence from studies of serodiscordant couples (where one partner is HIV-positive and the other is not) shows that using a condom reduces the probability of HIV



Condom promotion and other HIV prevention strategies used synergistically towards a common goal offer the greatest potential for achieving the maximum overall impact on HIV transmission.



transmission during penetrative sex by about 90%. Thus, the best estimate that may be deduced from all these studies is that condoms used correctly and consistently reduce the risk of transmission by about 90%. With perfect use, effectiveness may be even higher, though not 100%.

It is important to clarify that an effectiveness of 90% does not mean that HIV transmission will take place in 10% of sexual acts where condoms are used. In fact, the risk of transmission is much lower. If the risk of sexual transmission is one in 500 without a condom, it would be reduced to one in 5000 when a condom is used.



Condoms are about 90% effective when used correctly and consistently. If the risk of transmission is one in 500 without a condom, it would be reduced to one in 5000 when a condom is used.

Consistent condom use

A population may use large numbers of condoms but the impact will be limited if the persons who use them most do not do so consistently. There is little evidence that using condoms sometimes (but not always) provides any greater protection than not using condoms at all. In fact, one study from Uganda found that individuals who sometimes used condoms were at higher risk of infection than those who never used them, perhaps because they were more risky in other aspects of their sexual behaviour, such as the number of partners they had¹⁷.

In analysing overall data on condom use, it is critical to determine who is using condoms. In a situation where overall condom use in general is high, but condom use is low in those few encounters where it could make a measurable difference, condom promotion must become more focused. This could occur, for example, if those at highest risk of HIV infection have lower rates of condom use, while people at low risk have higher rates of condom use.

Can people be convinced to use condoms?

No matter how effective condoms may be, they can have little impact in preventing HIV if people do not use them. There is growing evidence that in key populations at higher risk of HIV exposure, such as men who have sex with men (MSM) and sex workers and their clients, people can be persuaded to use condoms. In these groups, both increases



in condom use and high rates of condom use have been documented. Global experience shows that the use of condoms is often not consistent, whether in the general population, among persons in steady relationships, or in key populations at risk of HIV infection.

General population

Promoting widespread condom use in the general population is a greater challenge than promoting it in specific populations, such as sex workers and their clients. Furthermore, it is not easy to measure the success of condom promotion efforts directed at the general population. Statistics on the number of condoms distributed give some idea of the scope of the effort but do not indicate what proportion of the population, particularly those at highest risk, is consistently using condoms. Most surveys do not identify key populations at highest risk and do not ask about high-risk settings where condom use could make a difference to transmission. For instance, in epidemics concentrated among specific segments of the population (e.g. MSM and sex workers), high condom use would make a substantial difference, regardless of the rate of condom use in the general population.

Numerous studies show high rates of condom use in the general population of various developing countries. Data collected by the Brazilian Ministry of Health showed that 63% of men and 69% of women reported using a condom during their last sexual encounter with a casual partner¹⁸. In a 1999 study in Zimbabwe, over 70% of men reported using a condom the last time they had high-risk sex¹⁹. However optimistic the trends in condom use are, the rise in condom use generally applies only to a tiny fraction of all sexual encounters in these countries. Condom use is much lower in rural areas, and condom promotion has had little impact in the context of steady sexual relationships. Across all regions of the world, the poor results of promotion efforts to encourage consistent condom use within regular partnerships highlight this as one of the major challenges in condom promotion²⁰.

Persons in steady sexual relationships

A high proportion of HIV transmission takes place between steady partners. Therefore, not using condoms or using them inconsistently can be a problem. This is particularly true in settings with high HIV prevalence, where the likelihood that a partner may be infected is raised.

There are barriers, of course, to using condoms with steady partners or in stable relationships. Trust, power inequalities, and the desire for children are common issues among married couples which can discourage condom use²¹. Studies in Kenya and Zambia show that, while marriage increases the frequency of sex, it decreases condom use and can severely restrict women's ability to protect themselves from infection. The association of condom use with casual or commercial sex persists as a barrier because it reinforces the misperception that protection against STIs or HIV is not needed with regular sexual partners. However, there is growing evidence in many countries of the risk of HIV infection within marriage. In a recent study in India, 90% of women being treated for STIs had only one lifetime partner, and 14% were HIV-positive. In Kisumu, Kenya and Ndola, Zambia, adolescent married girls age 15–19 years were found to have higher levels of HIV infection than non-married sexually active girls the same age, demonstrating that not only is marriage not protective in some settings, but it actually can increase risk²².

It would seem to be rational behaviour for HIV-serodiscordant couples to use condoms. However, most studies of serodiscordant couples reveal low condom use: 17% reported regular condom use in Rwanda²³, 24% in Haiti²⁴, and 33% in Zambia²⁵. Condom use has been reported to be more frequent in HIV-serodiscordant couples where the woman is the HIV-positive partner than in relationships where the man is HIV-positive^{26,27}.

Among men who have sex with men (MSM)

Clear evidence that people can be convinced to use condoms, and that condoms can be a successful public health strategy for HIV prevention, has been documented among MSM and sex workers. In San Francisco, condoms were heavily promoted from the beginning of the epidemic by public health officials and by leaders of the local gay community²⁸. Incidence rates for all STIs fell substantially, and annual HIV incidence rates fell from double digits in the early 1980s to less than 1% after 1985²⁹.

There have been similar increases in condom use among MSM in many places in industrialized countries. However, this has not necessarily been true in developing countries. Where condom use among MSM remains low, this has more often been due to lack of effort than to failure of condom promotion campaigns. HIV prevention programmes in many countries have not given MSM the prevention and care services that they warrant. This may be because of outright discrimination and stigmatization or because of a belief that MSM are hard to reach. Yet, concerted efforts targeted at MSM have usually been successful in increasing condom use. In Salvador, Brazil, for example, consistent condom use during anal sex increased from 81% to 97% in MSM following

participation in safer-sex workshops³⁰. Recent epidemiological and behavioural data show a rise in unprotected sex among a small but significant proportion of MSM in developed countries coinciding with widespread access to accessible antiretroviral (ARV) treatment regimens³¹. Findings in many industrialized countries that show lower condom use among young MSM, combined with growing complacency among those on ARV treatment, demonstrate the need to revitalize and sustain primary prevention messages aimed at promoting protected sex for MSM in high-income countries.

In the sex industry

Experience throughout the developing world confirms that the greatest changes in sexual behaviour have taken place among sex workers and their clients. Thailand's 100% Condom Use Programme achieved nearly universal use of condoms in its large sex industry. After an intensive campaign of condom promotion and distribution in brothels, a survey found that the proportion of female sex workers who said that they always use condoms during commercial sex rose from 14% in 1989 to over 90% in 1994^{32,33}. Another study found that consistent condom use among brothel-based sex workers went up from 87% in 1993 to 97% in 1996³⁴.

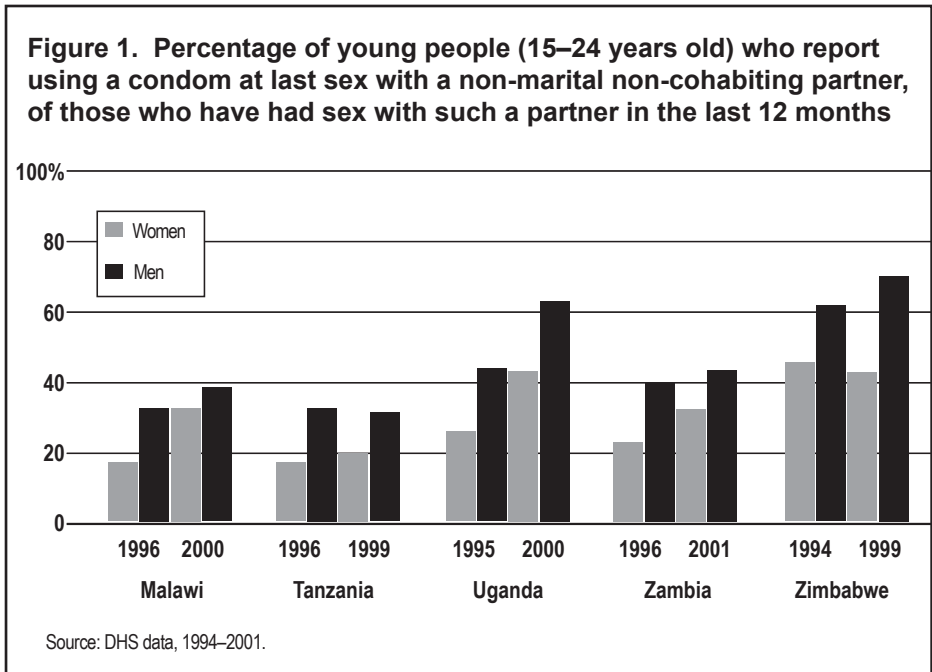
Evaluations of HIV programmes and randomized trials in various parts of the world reveal that some of the most effective prevention programmes have taken place in sex-worker settings. Post-intervention in a randomized trial in Mumbai, India, 70% of women reported using condoms at least sometimes and 28% said they used them always. These proportions compared to 53% and 0% respectively for women in control brothels who did not receive the intervention. HIV incidence was 5% per year in the intervention group, versus 16% per year in the control group, with similar differences in the incidence of other STIs³⁵. In the Democratic Republic of the Congo in 1994, an HIV-prevention programme for sex workers increased consistent condom use from 11% to 68% and decreased HIV incidence from 11.7% per year to 4.4% per year, with parallel decreases in other STIs³⁶. In Senegal in 1999, 94% of sex workers reported using a condom the last time they had sex with a regular client and 98% with a new client³⁷. In Kampala, Uganda, in 2001, 99% of female sex workers reported using a condom when they last had intercourse³⁸. Unfortunately, these success stories are by no means typical of all parts of the developing world. Nevertheless, they demonstrate that very high rates of condom use in commercial sex are achievable.

Among young people

Condom use among young people is especially important because the young are often

at greatest risk for HIV infection and have the least access to condoms. Moreover, young people are establishing patterns of sexual behaviour that may last a lifetime. One indicator often used to examine condom use among the youngest sexually active persons is to ask whether a condom was used during their first ever sexual encounter. Rates as high as 77% are reported in France and 68% in England. But developing countries such as Brazil (48%) and Mexico (43%) also have a high proportion of young people who say they used a condom the first time they had sex³⁹.

Demographic and health surveys (DHS) show that young age is a strong predictor of condom use, except apparently among young MSM, for whom condom use may be lower in some settings. DHS data from 27 countries in Africa and Latin America showed higher rates of condom use at last high risk sex for 15–24 year olds compared to 25–29 year olds in every country⁴⁰. High risk sex was defined as sex with a non-marital, non-cohabiting partner. Figure 1 shows the results from selected African countries in studies conducted between 1994 to 2001 among 15–24 year old young men and women.



These studies demonstrate that lower age seems to be one of the strongest predictors of condom use. At the same time, there remain a number of obstacles to ensuring that young people use condoms. Myths, fears and misperceptions about condoms among young people, combined with inaccessibility to supplies, severely weaken prevention practices among 15–24-year-olds, yet this is the age group hit hardest by the epidemic in many settings. Structural barriers such as gender norms and roles, social stigma, and lack of access to youth friendly health services constitute additional major factors undermining the capacity of young people to protect themselves from HIV infection. Top-level commitment is needed to put in place policy and programmatic interventions aimed at young people, which back up prevention education with access to prevention tools.

How can condom promotion programmes be more effective?

High rates of condom use have been achieved, at least for casual sexual partnerships, in some of the countries hardest hit by AIDS. This has not invariably led to a demonstrable fall in the rate of HIV infection because of the timing of their introduction, the target population and the level of coverage. For example, it is estimated that overall provision of condoms in Africa in 1999 amounted to only 4.6 per man per year⁴².

It is quite possible that HIV prevalence would have risen even faster in some countries if condom use had not increased. But the current situation raises many questions, such as the following:

- What level of condom use is necessary to control and roll back a generalized heterosexual epidemic?
- In settings reporting high rates of condom use, are condoms being used consistently and correctly enough to have the desired impact?
- At what point is condom use only with casual sexual partners no longer good enough?
- How can high rates of condom use in steady sexual partnerships be achieved when HIV prevalence in the general population is high?

These questions remind us that the number of condoms distributed is not the sole indicator of success of an HIV prevention programme. In addition to measuring condom uptake and condom use, we need to ask ourselves what exactly should be measured. From an epidemiological point of view, rates of condom use are essential indicators in

situations where exposure to HIV is more likely, such as sex between new, nonsteady or casual partners. Most condom use studies tend to focus on this indicator. However, condom use with regular partners is also an important indicator of successful condom promotion and must be included in monitoring and evaluation efforts.



People can be persuaded to use condoms, validating the argument that condoms represent an acceptable and viable strategy for reducing HIV transmission.

The examples of Senegal and Thailand indicate that the introduction of condom-promotion programmes early in the epidemic strengthens HIV prevention. High rates of condom use among populations at higher risk of HIV acquisition, before an epidemic spreads to the general population, may account for successful control of the epidemic. In countries where the HIV epidemic has spread to the general population, high rates of consistent condom use among the general population will be needed over an extended period of many years before an effect on prevalence rates can be detected.

The available evidence clearly shows that a dramatic increase in condom use can make, and over the past two decades has made, a difference. This has occurred in a variety of geographic regions and cultures and has far exceeded what many sceptics would have believed possible even a few years ago. People can be and have been convinced of the need to use condoms, supporting the argument that for many people condoms represent an acceptable, viable strategy for HIV control.

Are condom supplies sufficient and reaching those who need them?

Condom promotion and distribution programmes have grown significantly since the beginning of the AIDS epidemic. Despite this, it is estimated from a survey of 70 countries that only 18% of risky sex acts in low and middle income countries in 2003 were protected by condom use⁴². In this survey, a risky sex act is defined as one with a casual partner or with spouse, if at least one partner has contacts with outside partners. UNFPA estimates that 8 billion condoms were needed in 2000 for HIV/STI prevention alone, and that, by 2015, at least 18.6 billion condoms will be needed (Figure 2)⁴³. These figures exclude condoms needed for family planning purposes, and assume



that the condoms would, in any case, not be used consistently. Excluding the costs of delivery, distribution, promotion or other services, it would have cost US\$ 239 million to procure the minimum number of condoms (8 billion) needed in 2000. This cost is estimated to increase to US\$ 557 million by 2015.

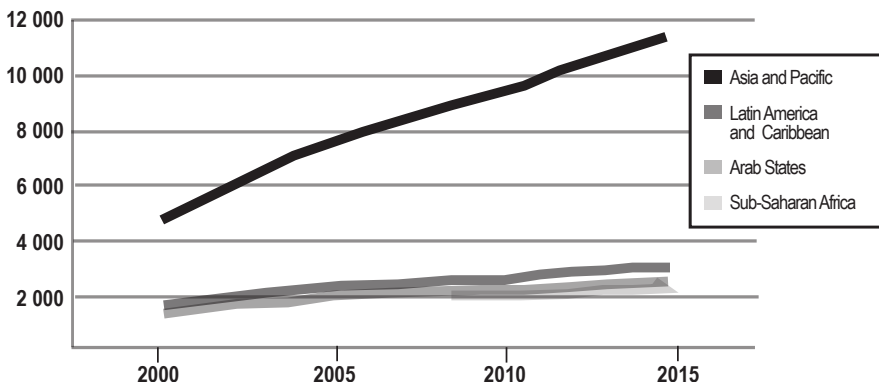
There are two important questions regarding condom supply:

- Are there sufficient resources to meet the demand?
- Are the available supplies of condoms reaching the people who need them most?

Resources to meet the demand

Resources to meet demand for condoms come from domestic government sources and out-of-pocket expenditures; multilateral agencies, including the United Nations Population Fund (UNFPA) and the World Bank Multi-Country AIDS Programme (MAP); the Global Fund to fight AIDS, TB, and Malaria; the private sector (foundations, employers, international nongovernmental organisations) and bilateral donors. Donors provided 3.574 billion condoms in 2002, at a cost of US\$ 94.9 million. Condom funding peaked in 1996 when international funding of condoms was at US\$ 68 million, but it subsequently declined to US\$ 40 million annually in 1999 and 2000.

Figure 2. Regional estimates of condom need: Condoms needed for STI/HIV prevention, 2000–2015 (in millions)



Source: UNFPA (personal communication), 2001.

These figures include condoms needed for protection from STI and HIV infection only, and exclude those needed for family planning.

Part of this decline may be attributed to policy changes in the United States, which substantially cut donations from 800 million condoms in 1992 to 300 million a year in 2000. While many developing countries now provide and promote condoms as part of their HIV prevention strategies, many of the poorest countries still depend on assistance provided through bilateral and multilateral funding. Such cutbacks are sorely felt in the places where condoms are most needed.


Getting condoms to those who need them most

The rise in the need for condoms is fuelled by increasing HIV prevalence in many developing countries, by large numbers of people beginning sexual activity, and by a growing interest in contraceptive use. However, sexually active young people (especially young women) are regularly and repeatedly denied information about, and access to, condoms. This means that misconceptions (such as the belief that condoms do not protect against HIV infection) are not corrected.

If condoms are to be used at all, and especially if they are to be used consistently, then it is clearly important that people have access to them and that they be able to afford them. A reliable supply and distribution system for those who need condoms is essential. Numerous surveys cite non-availability of condoms at the time of sexual interactions as a main reason for non-use⁴⁴.

Experience has shown that, when condoms are available and affordable, people use them. Decreasing condom prices in Brazil in the early 1990s resulted in a massive increase in the numbers of condoms purchased. The increase in condom accessibility and availability promoted by the Ford Foundation in South Africa (through mass distribution and vending machines in workplace toilets) increased uptake 25-fold⁴⁵.

The gender aspects of condom use are undoubtedly the most difficult hurdles to overcome. Until men and women share equal decision-making power in their interpersonal relationships, the female condom will provide women with greater opportunities for protecting themselves from HIV and STIs than the male condom. Research studies in South Africa, Thailand, the United States and Zambia indicate that a greater number of sexual acts are protected when female condoms



Increasing access to condoms by overcoming supply shortages, reinforcing promotion strategies and improving distribution systems is absolutely vital to success against the spread of HIV.



are available as a supplement to male condoms, although more investigation is needed to confirm these findings.

How can we move condoms and HIV prevention forward?

Despite the experience of the past two decades, many questions remain unanswered regarding the promotion, use and effectiveness of condoms. Objective and unbiased research is needed and should, ideally, make it easier for condom programmes to ensure an appropriate mix of prevention approaches that include condom promotion for key populations at higher risk, promoting consistent condom use in stable relations, and securing a regular supply of condoms to all who need them.

1. ***Build on the condom's advantage.*** Condom promotion is an essential part of HIV prevention programmes, both for key populations with high risk of HIV exposure and for the general population. The use of condoms by those living with HIV enables them to continue having a healthy and safer sex life. For sex workers in every country in the world, condoms represent the only real option for reducing the risk of contracting and transmitting HIV. Other groups whose risk of exposure is high include injecting drug users and their sexual partners, and heterosexuals with many sexual partners or with a high turnover of partners. Targeted condom promotion addresses the need for condom availability at critical delivery points.

2. ***Condom promotion for the general population*** can encourage people to think and talk about HIV prevention; it also helps to make safer sex the norm. Condom promotion programmes have had the greatest impact on prevalence rates when introduced early in a country's epidemic and when they are accessed and used consistently by populations at higher risk of HIV exposure. Condom promotion also yields other benefits, such as preventing unintended pregnancy and reducing the transmission of other STIs.

Operational research is needed to determine both how condom promotion can best be integrated into combination approaches to reduce sexual transmission of HIV and to better understand the interactions that take place between different programme components. It is essential that condom promotion programmes, while using successful condom social marketing techniques to reduce common fears and misperceptions in the general population, also target priority populations. In addition, such programmes must incorporate approaches that create a more supportive sociocultural climate by providing balanced arguments on the benefits of condom use versus its risks.

3. ***Address critical misperceptions.*** The correct and consistent use of condoms in stable relationships continues to be a challenge. This issue, as well as the continued promotion of condom use with casual partners, must be directly addressed. In addition to promoting the use of condoms with regular partners through traditional mass media and small media channels, it is important to reinforce it through voluntary counselling and testing networks. Couples and others who may assume it is already too late to adopt safer sexual practices must be encouraged and supported to use condoms through post-test and ongoing counselling. Consistent condom use is essential for HIV-positive persons who choose to remain sexually active.

HIV prevention programmes need to regularly draw from the findings of operational research on how consistent condom use for key groups in different settings can be achieved.

4. ***Draw on the synergistic interaction of interventions.*** With the continued rise in the spread of the epidemic across all regions, HIV prevention programmes must include a wide range and mix of interventions that are tailored to the country's epidemiological and cultural situation. This should include, but not be limited to, education on the 'ABCs' of prevention, treatment and care of STIs, voluntary counselling and testing services, harm reduction, and addressing discrimination and stigmatization.

Promoting sexual abstinence or reduction in the number of sexual partners does not preclude the promotion of condoms. All prevention programmes have the responsibility to provide people with complete and accurate information so that they are able to make informed choices. Providing accurate information includes avoiding overstating the effectiveness of condoms, such as saying that sex with a condom is "safe sex" (instead of "safer sex"), and telling the truth about condoms (i.e., that they are highly effective when used correctly and consistently).

Successful programmes that encourage delayed sexual onset and partner reduction can also help people to be aware of the importance of condom use whenever they do not meet these objectives. Monitoring the outcomes of these programmes can provide useful insights for optimal calibration of the mix of prevention interventions.

5. ***Plug the supply and resource gaps.*** It is critical that a regular supply of condoms be guaranteed by national programmes and supported by the donor and non-governmental organization communities. Male and female condoms should be available to everyone who needs them, whenever and wherever they want them. Condom education and promotion must be accompanied by a stable and affordable supply of condoms. Coordinated and collective actions at global and national levels (between donors, national governments and the private sector) are required to improve commodity purchasing and distribution.

6. ***Improve impact measurement.*** Condom-promotion programmes need to have programme effectiveness measured, regardless of the group being targeted. Other than Senegal, Thailand, Uganda and, possibly, Cambodia, there are still too few examples of low- and middle-income countries that have successfully halted and begun reversing their epidemics. Trends in the parameters of condom use in countries (e.g., distribution numbers, consistent condom use with casual and regular partners) should be vigilantly monitored and the effects on HIV transmission assessed. For example, there are encouraging findings from a study among 18–24-year-old young men in a South African township that showed significant impact at the general population level of consistent condom use on HIV, herpes simplex-2, and genital ulceration. Young men who used condoms consistently were two to three times less likely to be infected with HIV and to have genital ulceration⁴⁶.

Behavioural information on the proportion of people in different populations in a country who consistently use condoms with various types of partners is a key to tracking the effects of condom programming on HIV incidence, although methodological challenges remain. Condom promotion aimed at the general population should ideally include measurement of trends in the numbers of sexual partners (especially casual partners and among the young). Research should focus on establishing the level of condom use that is required to make a difference in incidence and prevalence rates in different epidemic situations.

Whatever the challenges to ensuring condom access, availability and correct and consistent use, the promotion of condoms is a strategy that must be used to the best advantage. There are so few effective tools to prevent HIV transmission that there is no leeway to forego any of them—least of all the one that, arguably, provides the best chance of success.

References

- ¹ See UNFPA's definition of condom programming in *HIV Prevention Now, Programme Brief No. 6 – Condom Programming for HIV Prevention, 2002*. Available at: www.unfpa.org/aids/prevention/hivprev6a.htm
- ² UNAIDS (2003) *Condoms and HIV prevention: a review of the evidence*. UNAIDS, Geneva.
- ³ Mantell JE et al. (2001) The acceptability of the female condom: perspectives of family planning providers in New York City, South Africa, and Nigeria. *J Urban Health*, 78(4):658–668.
- ⁴ Hearst N et al. (1999) Reducing AIDS risk among port workers in Santos, Brazil. *Am J Public Health*, 89(1):76–78.
- ⁵ Nelson KE et al. (2002) HIV infection in young men in northern Thailand, 1991–1998: increasing role of injection drug use. *J Acquire Immune Defic Syndr*.
- ⁶ Ibid.
- ⁷ Robinson NJ et al. (1999) Type of partnership and heterosexual spread of HIV infection in rural Uganda: results from simulation modeling. *Int J STD AIDS*, 10:718–725.
- ⁸ Ugandan Ministry of Health (2001) *HIV/AIDS surveillance report: 13*. Ministry of Health, Kampala.
- ⁹ St. Lawrence JS, Scott CP (1996) Examination of the relationship between African American adolescents' condom use at sexual onset and later sexual behaviour: implications for condom distribution programs. *AIDS Prev Educ*, 8(3):258–266.
- ¹⁰ Magnani RJ, Karim AM (2002) *ABCs: the youth perspective*. Available at: http://www.synergyaids.com/Documents/6_Robert_Magnani.pdf
- ¹¹ St. Lawrence JS, Scott CP (1996) Examination of the relationship between African American adolescents' condom use at sexual onset and later sexual behaviour: implications for condom distribution programs. *AIDS Prev Educ*, 8(3):258–266.

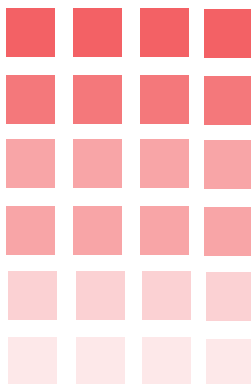
- ¹² Brieger WR et al. (2001) West African youth initiative: outcome of a reproductive health education program. *J Adolesc Health*, 29:436–446.
- ¹³ Weller S, Davis K (2002) Condom effectiveness in reducing heterosexual HIV transmission. *Cochrane Database Syst Rev*, 1:CD003255.
- ¹⁴ Pinkerton SD, Abramson PR (1997) Effectiveness of condoms in preventing HIV transmission. *Soc Sci Med*, 44(9):1303–1312.
- ¹⁵ Davis KR, Weller SC (1999) The effectiveness of condoms in reducing heterosexual transmission of HIV. *Fam Plann Perspect*, 31(6):272–279.
- ¹⁶ Weller SC. A meta-analysis of condom effectiveness in reducing sexually transmitted HIV. *Soc Sci Med* 1993; 369 (12): 1635–1644.
- ¹⁷ Ahmed S et al. (2001) HIV incidence and sexually transmitted disease prevalence associated with condom use: a population study in Rakai, Uganda. *AIDS*, 15(16):2171–2179.
- ¹⁸ Brazilian Health Ministry (2002) Resposta: experience of the Brazilian AIDS program. Brasilia, Ministry of Health.
- ¹⁹ Allen A (2002) Sex change: Uganda v. condoms. *The New Republic Online*.
- ²⁰ Van Rossem R, Meekers D, Akinyemi Z (2001) Consistent use with different types of partners: evidence from two Nigerian surveys. *AIDS Educ Prev*, 13(3):252–267.
- ²¹ Santos NJS et al. (2002) HIV-positive women, reproduction and sexuality. *Rev. Saude Publica*, 36(4 Suppl):12–23.
- ²² Glynn, J.R., Caraël, M., Auvert, B., Kahindo, M., Chege, J., Musonda, R., Kaona, F., & Buvé, A., The Study Group on Heterogeneity of HIV Epidemics in African Cities. (2001). Why do young women have a much higher prevalence of HIV than young men? A study in Kisumu, Kenya and Ndola, Zambia. *AIDS* 15(suppl 4), S51–60.
- ²³ Allen S, Tice J, Van de Perre P, et al. Effect of serotesting with counseling on doncom use and seroconversion among HIV discordant couples in Africa. *Br Med J* 1992; 304: 1605–1609.

- ²⁴ Deschamps MM et al. (1996) Heterosexual transmission of HIV in Haiti. *Ann Intern Med*, 125:324–330.
- ²⁵ Hira SK et al. (1997) Condom and nonoxynol-9 use and the incidence of HIV infection in serodiscordant couples in Zambia. *Int J STD AIDS*, 8(4):243–250.
- ²⁶ Allen S et al. (1992) Effect of serotesting with counseling on condom use and seroconversion among HIV discordant couples in Africa. *Br Med J*, 304:1605–1609.
- ²⁷ Serwadda et al (1995). The social dynamics of HIV transmission as reflected through discordant couples in rural Uganda.
- ²⁸ Grulich A (2000) HIV risk behavior in gay men: on the rise? *Br Med J*, 320:1487–1488.
- ²⁹ Hessel N et al. (1989) Prevalence, incidence, and progression of human immunodeficiency virus infection in homosexual and bisexual men in Hepatitis B vaccine trials, 1978–1988. *Am J Epidemiol*, 130(6):1167–1175.
- ³⁰ Sampaio M et al. (2002) Reducing AIDS risk among men who have sex with men in Salvador, Brazil. *AIDS Behav*, 6(2):173–181.
- ³¹ Hoggs RS et al. (2001) Increasing incidence of HIV infections among young gay and bisexual men in Vancouver. *AIDS*, 15:1321–1322.
- ³² Celentano DD et al. (1998) Decreasing incidence of HIV and sexually transmitted diseases in young Thai men: evidence for success of the HIV/AIDS control and prevention program. *AIDS*, 12(5):F29–36.
- ³³ Hanenberg RS et al. (1994) Impact of Thailand's HIV-control program as indicated by the decline of sexually transmitted diseases. *Lancet*, 344:243–245.
- ³⁴ Mills S et al. (1997) HIV risk behavioral surveillance in Bangkok, Thailand: sexual behavior trends among eight population groups. *AIDS*, 11(Suppl 1):S43–51.
- ³⁵ Bhave G et al. (1995) Impact of an intervention on HIV, sexually transmitted diseases, and condom use among sex workers in Bombay, India. *AIDS*, 9(Suppl 1): S21–30.
- ³⁶ Laga M et al. (1994) Condom promotion, sexually transmitted diseases treatment, and declining incidence of HIV-1 infection in female Zairian sex workers. *Lancet*, 344:246–248.

- ³⁷ Meda N et al. (1999) Low and stable HIV infection rates in Senegal: natural course of the epidemic or evidence for success of prevention? *AIDS*, 13(11):1397–1405.
- ³⁸ Ugandan Ministry of Health (2001) HIV/AIDS Surveillance Report: 13. Ministry of Health, Kampala.
- ³⁹ Brazilian Health Ministry (2002) Resposta: experience of the Brazilian AIDS program. Ministry of Health, Brasilia.
- ⁴⁰ Demographic and Health Surveys. Available at <http://www.measuredhs.com>.
- ⁴¹ UNICEF (2002) Young people and HIV/AIDS: opportunity in crisis. UNICEF, New York.
- ⁴² Shelton J, Johnston B (2001). Condom Gap in Africa: evidence from donor agencies and key informants. *Br Med J*, 323: 139.
- ⁴³ Policy Project (2004). Coverage of Selected Services for HIV/AIDS Prevention, Care and Support in Low and Middle Income Countries in 2003. Washington DC.
- ⁴⁴ Population Action International (2002) Condoms count: meeting the need in the era of HIV/AIDS. Population Action International, Washington, DC.
- ⁴⁵ Agha S, Kusanthan T, Longfield K, et al. Reasons for non-use of condoms in eight countries in sub-Saharan Africa, Presented at XIV International Conference on AIDS, Barcelona, 7–12 July, 2002: poster WePeD6359.
- ⁴⁶ Family Health International (2003) Research briefs on the female condom, No. 5. Family Health International, Washington DC.
- ⁴⁷ Auvert B et al. Impact of condom use on HIV serostatus, HSV-2 serostatus and reported genital ulceration: A study among young men in a township of South Africa (in print).



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This 'cutting-edge perspective' publication draws attention to policy and programme implications of insights on the role of condoms gained from scientific studies and programme experiences. Its goal is to assist AIDS programme providers and decision-makers with particular responsibilities in condom programming, and key community leaders who influence decisions on reproductive health in their constituencies to position condom use optimally within overall prevention programming in their communities and countries.



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