Preventing HIV in sex work settings in sub-Saharan Africa

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Contents

Acronyms and abbreviations

AIS	AIDS impact survey
ART	antiretroviral treatment
ARV	antiretroviral
BSS	behavioural surveillance survey
CRIS	Country Response Information System
DHS	demographic and health survey
DIC	drop-in centre
FSW	female sex worker
GIS	geographical information systems
HSV	herpes simplex virus
IDU	injection drug user
IEC	information, education and communication
M&E	monitoring and evaluation
MSM	men who have sex with men
MTCT	mother-to-child transmission
NGO	nongovernmental organization
PEP	post-exposure prophylaxis
PLHIV	people living with HIV
PSA	prostate-specific antigen
PSAMAO	Prevention du SIDA sur les Axes Migratoires de l'Afrique de l'Ouest
PSI	Population Services International
SRH	sexual and reproductive health
STI	sexually transmitted infection
SWEAT	Sex Worker Education and Advocacy Task-team
UNAIDS	Joint United Nations Programme on HIV/AIDS
VCT	voluntary counselling and testing
WHO	World Health Organization

Background

Shortly after the first cases of HIV were documented in Africa in the early 1980s, the World Health Organization (WHO) Global Programme on AIDS highlighted the high prevalence of HIV among female sex workers (FSWs) and their clients in Africa, and called attention to their unmet needs for HIV prevention.[1,2,3] In sub-Saharan Africa, sex workers have been especially heavily affected by HIV and other sexually transmitted infections (STIs), with levels of infection much higher than those among other groups of society. In Ethiopia, the first sera found to be HIV positive date back to 1984 and, by 1988, HIV prevalence among FSWs and their trucker clients had already risen to 17% and 13%, respectively.[4,5,6]

Sex work is an important feature of the transmission dynamics of HIV within early, advanced and regressing epidemics in sub-Saharan Africa.[7] HIV prevalence among sex workers and their clients today is commonly 10–20-fold higher than among the general population. With high rates of partner change, the potential for onward transmission of HIV from an infected sex worker to their partners may be more than 100 times greater than from other people living with HIV (PLHIV). In addition, sex workers who have other STIs (especially ulcerative STIs such as herpes simplex virus [HSV]-2 and chancroid) are more likely to transmit HIV, particularly in settings where men are uncircumcised. Together, these factors may contribute to a differential in HIV transmission potential of more than 1000 times compared with lower-risk populations. Yet, in much of Africa, there is little evidence that transmission of HIV and other STIs in sex work settings has been controlled.

Political and moralistic tensions surround sex work in sub-Saharan Africa, even more so than in other groups most at risk for HIV, such as injection drug users (IDUs) and men who have sex with men (MSM). This has resulted in insufficient recognition of the fact that it is necessary to target sex workers to not only reduce the prevalence of HIV among sex workers for their own health needs, but also because this is vital for preventing HIV in the general population.[8,9] Unintended pregnancy is also common among FSWs, with consequent risks to their health and the potential for HIV infection in their children. As HIV epidemics abate in the general population, as is the case in parts of eastern Africa, the relative importance of core groups such as sex workers increases.

The core and bridging effects of paid sex are perhaps most vividly demonstrated by truckers and roadside FSWs. These groups act as ongoing sources of infection along transport routes and within communities adjacent to these routes. As all social groups are ultimately interlinked, HIV spreads rapidly through sexual networks which encompass sex workers, clients, their regular partners and spouses, as well as, potentially, their children.

An important public health principle applicable to most diseases including HIV is that different population groups have an unequal risk of acquiring disease, and that those groups at higher risk require specific services. These services, by necessity, must differ in intensity and type from services that target groups at lower risk. Over and above being one of the most vulnerable group to HIV infection, sex workers are also potentially a most important and effective partner in halting its ongoing transmission.

In sub-Saharan Africa, there are no country-level programmes that specifically target HIV prevention among sex workers on an adequate scale. Currently, only about one in three sex workers receives adequate HIV prevention services in sub-Saharan Africa,[10] with even fewer having access to HIV treatment, care and support.[11] A few nongovernmental organizations (NGOs) and research groups have, however, developed and implemented effective programmes for sex workers and their clients in this setting. Most of these programmes are small in scale and project-based, and operate with insufficient resources, attention and support from national governments and international agencies.

To date, research and programmatic activities around sex work in sub-Saharan Africa have focused almost exclusively on FSWs and their male clients. The importance of male and transgender sex workers is increasingly being recognized in these settings and more research is being conducted. This report predominately covers FSWs, though many of the findings outlined here are likely to apply to other groups of sex workers. Throughout this report, the term "sex workers" refers to FSWs unless specifically stated.

The main focus of this report is to review the risk factors for and burden of HIV in sex work settings in sub-Saharan Africa, and the interventions that have been successfully implemented in this region. The report presents the key components of a health sector response necessary for accelerating prevention of HIV and other STIs among sex workers and their clients, and provides recommendations for implementing such services. The report, its findings and recommendations are based on a review of the available evidence.

Information is presented in three major sections. Section 1 summarizes the epidemiology of HIV and other STIs among sex workers and their clients, bringing together evidence from biological and behavioural surveillance, research reports and evaluations of sex worker projects. Patterns of sex work and other salient features of commercial sex in sub-Saharan Africa are outlined. This section ends with an overview of the risk factors for HIV infection among sex workers, in particular, concomitant STIs, behavioural factors and occupational contexts. It also includes a description of the key sociodemographic features of sex workers which, at least in part, account for their vulnerability.

Section 2 summarizes evidence on the effectiveness of interventions for reducing the acquisition of HIV in sex workers and their clients, as well as the importance of HIV treatment, prevention and care services for sex workers with HIV. The practical steps required for implementing such services are outlined in section 3, which highlights the need to define the role of national-level coordination, outreach through peer sex workers and the importance of involving sex workers in all aspects of HIV programming in sex work settings. The report concludes with an overview of surveillance and research priorities (section 4) and provides recommendations for HIV prevention interventions targeting sex workers and clients in sub-Saharan Africa.

This report is aimed at country-level HIV programme officers responsible for designing and implementing HIV services. It may also be useful for nongovernmental, community-based or other organizations planning services in sex work settings. Its purposes are to review the situation of HIV, STI and sex work in the African Region and to examine and discuss the interventions which, if implemented together, would constitute a comprehensive and coordinated response to HIV prevention in sex work settings.

Methods

Data were collated from biological and behavioural surveys, research studies and reports from projects among sex workers and their clients in sub-Saharan Africa. A systematic review of the published literature on this topic was also conducted. The prevalence and incidence of HIV and STIs in sex workers and clients in sub-Saharan Africa are presented, drawn from surveillance data, as well as project reports and studies among this population. This includes survey data within the HIV indicator database maintained by DHS Measure. Where data were available, use was made of the following: behavioural surveillance surveys (BSS), AIDS impact surveys (AIS), demographic and health surveys (DHS), sexual behaviour and HIV/AIDS serobehavioural surveys.[12]

The Medline (Pubmed) database was searched by means of a free text search using the terms "sex work and HIV and Africa" and a search using the MESH keywords: "prostitution and Africa and HIV". Only articles in English were retrieved. Grey literature was also accessed, specifically the Joint United Nations Programme on HIV/AIDS (UNAIDS) best practices and UNAIDS website, the WHO toolkit for female sex workers and the Population Services International (PSI) website and PSI adolescent survey. Experts on this topic were approached for additional publications and documents. The following journals were hand searched: Reproductive Health Matters; and Culture, Health and Sexuality. References of all articles located in this review were then searched. A single reviewer (MFC) assessed the articles and documents, and extracted data from them.

1. Risk factors for and burden of HIV and other sexually transmitted infections in sex work settings in sub-Saharan Africa

1.1 Estimating the sex worker population size

Estimating the extent of paid sex in sub-Saharan Africa is important for programme planning and advocating for adequate services for this sizable group of women and men. Counting the number of people who sell sex is difficult, although enumeration techniques have steadily become more sophisticated. In a systematic review in 2007 of studies among the general population in Africa, about 7% of women infected with HIV reported having been paid for sex, while 3% of uninfected women reported this. The corresponding figures for men who had paid sex were 31% and 18%.[7]

Estimates of the extent of sex work vary considerably and are generally higher in urban areas, port cities and on major highways. For example, in Ethiopia in 1990, it was estimated that 7% of all sexually active women in Addis Ababa were sex workers.[4] Using capture–recapture techniques in the port city of Diego-Suarez in Madagascar, it was estimated that 2684 women aged 15–49 years (12%) were sex workers.[13] Enumeration using a combination of geographical information systems (GIS) and diaries of sex workers on the main trucking route in eastern Africa showed that there are about 5600 sex workers working at 39 identified hotspots.[14] The limited data available suggest that the prevalence of sex workers in the urban areas of eastern and southern Africa might be higher than in West Africa, as shown in Table 1.

Table 1. Estimated number of female sex workers in sub-Saharan Africa using census enumeration or multiplier methods (adapted from Vandepitte J et al.)[15]

Region	Country	Location (year)	Area	Female sex workers (*N*)	Percentage of all women in the area who are sex workers (%)
Western Africa	Benin	Cotonou, 1997[16]	Capital	1915	1.4
		Cotonou, 2001[17]	Capital	1750	1.2
		Porto-Novo, Aomey/Bohicon, Parakou, Kandi, Malanville 2000–04[17]	Provincial towns	Total: 782 (mean: 156, range: 36-236)	0.1–0.5
	Burkina Faso	Ouagadougou 2000–03[16]	Capital	8000	4.3
	Cameroon	Yaoundé 1997[16]	Capital	5600	2.2
	Ivory Coast	Abidjan 2000[15]	Capital	6000	0.7
		San Pedro, Bouake, Korhogo, Aboissa, Daola, Yamoussouka 2000–04[15]	Provincial towns	Total: 2178 (mean: 363, range:245-500)	0.4–1.2
	Ghana	Accra-Tema 2003[18]	Capital	5000	1.1
		Sekondi-Takoradi 2003[15]	Provincial town	492	0.7
	Niger	Niamey 2004[15]	Capital	11 249	2.6
Eastern Africa	Ethiopia	Addis Ababa 2002[19]	Capital	12 453	2.1
		Nazareth 2002[20]	Provincial town	1172	2.9
	Kenya	Kisumu 1997[16]	Provincial town	1374	3.0
		Busia, Mumias, Nzoia, Webuye (W. Province) 1999[21]	Provincial towns	1500	6.9
		Highway between Mombasa and Ugandan Basia and Malaba border towns 2004[14,22]	Truck stops	5600	-
Southern Africa	Zambia	Ndola 1997[16]	Provincial town	2288	2.4
		Chirundu, Livingstone, Chipata, Nakonde, Kasumbalesa, Kapiri Mposhi 2000[23]	Truck stops	1500	2.7
	Madagascar	Diego-Suarez 2001[13]	Provincial town	2684	12.0

The size of sex worker populations can also be estimated from surveys at a population level, such as the DHS. Here, women in households are asked whether they had paid sex in the past 12 months or had received money, gifts, or other favours for sex in the past 12 months. Estimates obtained from population surveys (Table 2) were considerably higher than those obtained from estimation projects among FSWs from the same country (Table 1).

Table 2. Estimated number of female sex workers in general population surveys

Region	Country (year)	Adult women having paid sex in the past 12 months (%)				
		Capital city	Other urban area	Total urban	Rural area	Overall
Western Africa	Ivory Coast, 1998–99[12]	4	3.4	4	2.1	2.9
	Guinea 1999[12]	-	-	5.4	2.8	3.6
	Niger, 1998[12]	4.5	5	4.8	0.6	1.4
	Nigeria, 2003[24]	-	-	9.1	8.5	8.7
	Sierra Leone, 2002[12]	-	-	-	-	5.3
Eastern Africa	Kenya, 2003[12]	-	-	6.6	5.1	5.5
Southern Africa	Madagascar, 2003–04[12]	3.5	-	4.4	3.4	3.6

1.2 Patterns of sex work and client groups

There is no single term or definition that adequately encompasses the full range of sex work exchanges that occur. Moreover, the groups encompassed by such nomenclature will not necessarily be synonymous with those sex worker populations which make an impact on infectious disease dynamics.

It is essential when defining sex work groupings to give priority to reflecting how those involved in sex work perceive themselves. Researchers in Hillbrow, South Africa investigated these perceptions and found that sex workers clearly identify what they are doing as work or "business", and quite distinct from their non-work lives as women who are girlfriends, mothers and providers.[25] Many consider the receipt of money or goods as par for the course in a sexual relationship and as quite distinct from sex work per se. The term "transactional sex" is increasingly being used to denote sex with a non-primary partner, which is motivated largely by material gains, such as provision of food, cosmetics, clothes, transport, items for children, school fees, somewhere to sleep or cash. This is common in many parts of sub-Saharan Africa and was reported by 20% of women attending an antenatal clinic in South Africa.[26] The majority of women in these relationships, however, do not self-identify as sex workers.[27,28]

Despite the complexities mentioned here, working definitions for sex work and transactional sex have been developed and are used in this report (Box 1). More restrictive definitions of sex work have been proposed, which may be more practical for the purposes of surveillance and provision of targeted services: "Sex work is any agreement between two or more persons in which the objective is exclusively limited to the sexual act and ends with that and which involves preliminary negotiations for a price".[29] Sex work is considered as performing a service for men, and is defined as penetrative vaginal sex that takes place within a particular timeframe, up to 15 minutes.[25]

Box 1. Definitions of sex work and transactional sex

Sex worker
Female, male and transgender adults and young people who receive money or goods in exchange for sexual services, either regularly or occasionally, and who may or may not consciously define those activities as income-generating or as sex work[30,31]

Transactional sex
An exchange of sexual acts for money or goods; the person would not self-identify as a sex worker, nor generally be viewed as such by the community. It is sex with a non-primary partner that is largely motivated by material gain[26]

Sex work takes place in a wide variety of settings. These range from well-established brothel-based areas to a looser collection of venues such as bars, hotels or roadside areas. These can be classified as either "formal" (organized in establishments) or "informal". Where sex work is more formal and establishment-based, managers or "pimps" may act as clearly defined authorities and as intermediaries between the sex worker and client. Informal sex workers such as those who work on the streets or from home may be harder to reach and more vulnerable to violence. Stakeholders in the sex work industry can thus include female, male or transgender sex workers, their clients and regular partners, business owners and "pimps" or other intermediaries.

In Africa, sex work takes all of the above forms, though not typically in the large-scale brothels that are common in Asia. Sex work here predominately occurs without intermediaries or associated gatekeepers. Occasionally, reports from these settings mention the presence of gatekeepers with, for example, brothels owners being responsible for appointment bookings. This gives them power over the sex workers and, by implication, over HIV intervention efforts. In some of these situations, there may be contracts between sex workers and intermediaries, which stipulate what portion of the sex work fee is ceded to the venue owners. These contracts may be unenforceable by law in countries where sex work is illegal, as in most of sub-Saharan Africa. Where brothel-based sex work does occur in Africa, sex workers tend to operate without pimps; instead, they accept money directly from the client. Even though sex workers must still pay property owners for expenses such as rent, this direct payment scheme gives sex workers better control over how they spend their resources and how many clients they accept.[32]

The venue of work is often determined by the social status and demographic characteristics of a sex worker. For example, in South Africa, sex workers of higher socioeconomic status tend to work out of escort agencies and massage parlours, while poorer sex workers work on the street or at harbours, mines and bars.[33] Sex work is further differentiated according to whether it constitutes a person's primary source of income, occasional work to supplement other income, or takes place in exchange for goods, either frequently or infrequently. A considerable portion of the sex worker population in sub-Saharan Africa has been described as being occasional or "part-time" workers.[34,35,36]

Box 2. Sex work in sub-Saharan Africa, classified by setting and characteristics of sex workers and clients

Sex work setting:

1. Street
2. Home
3. Drinking and entertainment venues: bars and nightclubs
4. Hotel (formal or informal)
5. Brothel or massage parlour (formal establishment)
6. Escort agencies (formal establishment)
7. Internet or phone

Individual characteristics of sex worker:

1. Age of sex worker
2. Socioeconomic status
3. Level of mobility
4. Full- or part-time sex worker

Client group:

1. Casual one-time client
2. Regular client
3. Client from mobile population
4. Client from local area

While clients of sex workers are generally drawn from specific groups of men, overall, they represent a broad cross-section of society. Particular situations increase the demand for sex work, for example, men working as truck drivers, on board ships, in the military or as migrant workers. Specific client groups thus predominate in certain locations, such as truckers on highways or seafarers in harbours. However, a substantial number of clients may come from the surrounding local area, thus sustaining local HIV diffusion pathways. Moreover, both sex workers and their clients usually have other regular partners or spouses within the general population.

As the example of truckers suggests, mobile men are a major client group, as they are often away from their families and social networks for extended periods of time. This occurs especially where occupational and masculine norms predict sex work, for example, in settings with single-sex hostels, which remain common practice for mining operations in Africa. Miners live in these compounds separated from their family and other forms of social support. They also have a regular income, which is relatively high compared with the household income of adjacent communities, especially that of women- and child-headed households.[37] Further, in a number of male-dominated occupational settings, there is ready access to alcohol supplies, which are at times even sold at subsidised prices.

1.3 Burden of HIV and other sexually transmitted infections

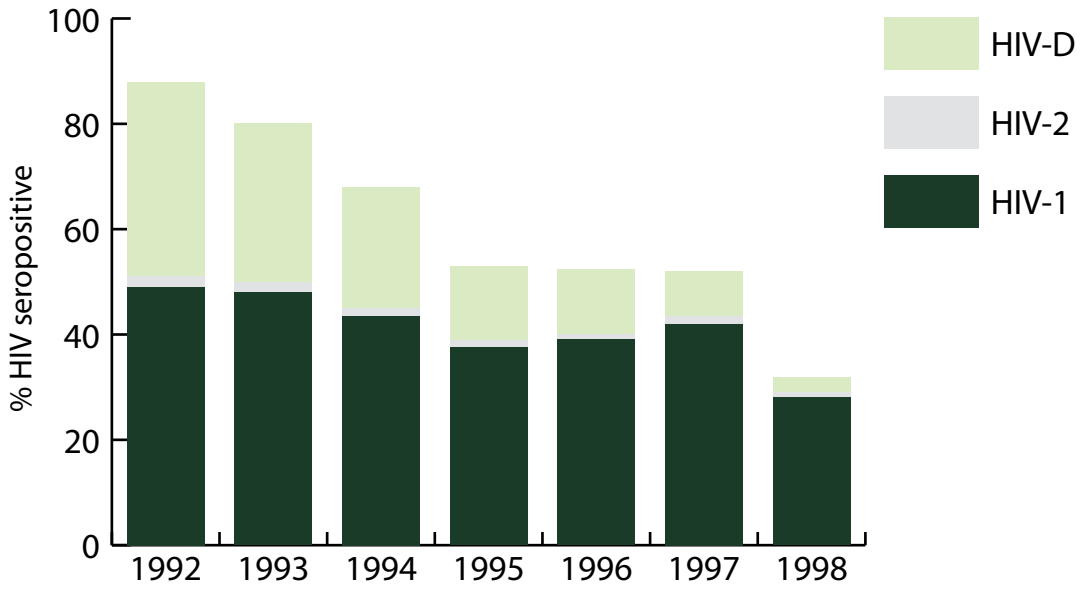
1.3.1 *Prevalence of HIV among sex workers and their clients*

Sex work is characterized by frequent partner change and unprotected sex, with consequent high rates of HIV and other STIs. Data on HIV prevalence among sex workers are available from biological surveillance and studies in each region of Africa, and at several time points. These allow for assessment of changes over time and with evolution of the background epidemic.[38] It is difficult, however, to make direct comparisons between survey findings, as sampling methods and the population of sex workers and clients often vary markedly. Repeated surveys among the same population of sex workers and clients, using identical survey methods, provide more comparable estimates of the trends in the burden of HIV and other STIs over time.

Comparison between the prevalence of HIV and other STIs in the general population and that in sex workers and their clients clearly shows the disproportionate burden of these infections among the latter. For example, in 2002, HIV prevalence in Benin among adults in the general population was an estimated 2.3%, while among sex workers it was 44.7%.[31,39] Similarly, in Guinea, national HIV prevalence was 2.8% compared with 42% among sex workers.[40] HIV prevalence was 18.9% in registered sex workers in Dakar, Senegal in 2002, 14.3% in 2001 in Mbour (coastal tourist area) and 29.8% in Kaolack in 2001, while HIV prevalence in the population was 0.5% in 2002.[41]

Women who report having transactional sex are also more frequently HIV infected than other women (44.8% of women who reported transactional sex were HIV infected, 1.5 times higher than other women).[26] Client groups such transport workers and truckers have frequently been shown to have a higher prevalence of HIV than the general population.[14,42] Monitoring HIV prevalence in sex workers and clients helps to track the temporal changes in HIV prevalence in these groups. In an important example of this, repeated surveillance showed that a decline in HIV prevalence had occurred over a few years among sex workers in Abidjan, Ivory Coast due, at least in part, to prevention initiatives in this setting.[43]

Figure 1. Decline in HIV prevalence among female sex workers in Abidjan, Ivory Coast, in areas with targeted sex worker service[43]



1.3.2 *STI: prevalence and effects on HIV transmission*

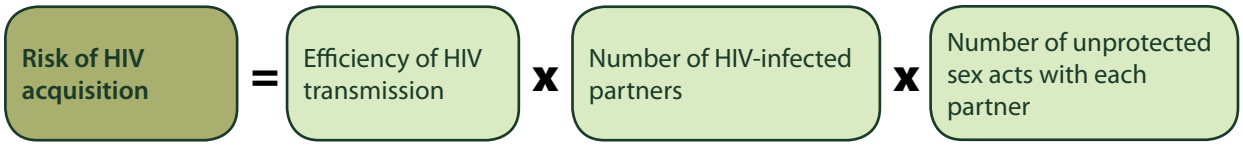
The burden of STIs other than HIV is also high among sex workers. Half to two thirds of sex workers typically have a curable STI at any one time. In some settings, 10% or more have an active genital ulcer and over 30% have reactive syphilis serology.[44,45,46,47,48] Gonorrhoea and chlamydial infection may be found in a third or more of sex workers, trichomoniasis is common, and many women have multiple infections.[44,49,50,51] Where testing has been done, over three out of five sex workers have evidence of herpes infection.[52,53] Sex workers also report that it is not uncommon for them to have sex with a man who has a genital ulcer.[34]

An STI in either partner facilitates the transmission of HIV by several mechanisms. These include: increased contact with a larger volume of HIV-containing blood or secretions if male sexual partners have penile ulcers; high HIV viral load in the semen of men with STIs such as HSV-2; and disruption of the mucosal barriers to infection in a woman, which undermines the innate defences of the vagina and cervix. The presence of STIs in women also increases the risk of acquiring HIV infection by recruiting HIV-susceptible inflammatory cells to the genital tract.

1.4 Behavioural risk factors

From a biomedical perspective, the risk for HIV infection is determined by the total number of unprotected sex acts with an HIV-infected partner and the efficiency of HIV transmission (Fgure 2).

Figure 2. Framework of biomedical and behavioural risk factors for HIV acquisition



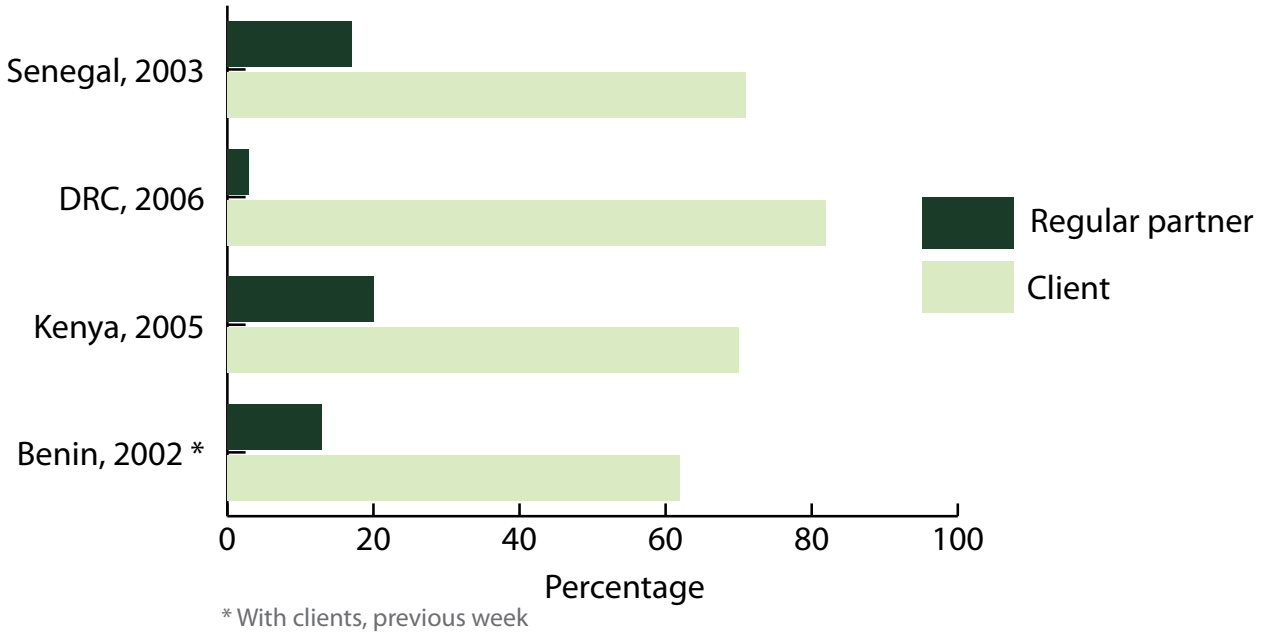
Not surprisingly, proxy markers of this equation have been shown in most studies to be associated with HIV infection. These include a higher client number, duration of sex work, inconsistent condom use.[46] A high prevalence of STI, which increases transmission efficiency, places sex workers at high risk of acquiring HIV and of transmitting STI and HIV infection to their clients and other partners. The risk of acquiring HIV is also influenced by the type of sexual activity. The efficiency of HIV transmission varies with anal, oral and vaginal sex.

Data are presented here from behavioural surveys and studies in sex work settings which assessed sexual behaviours that influence the risk of HIV transmission.

1.4.1 *Unsafe sex with partners of unknown or HIV-positive status*

There is a large body of evidence from sub-Saharan Africa which shows that the risk for HIV infection is lower among sex workers who use condoms consistently.[46,54] Availability of condoms in sex work settings has increased over the past years. In one area of Ethiopia, 79% of 544 bars sampled had condoms available, either free in dispensers or, more commonly, for sale at the bar. Condoms were also provided free at health centres, though these condoms tended to be unpopular. Despite such improvements in condom access and distribution, lack of availability of free condoms is sometimes cited by sex workers as a reason for unprotected sex. There are also occasional reports by sex workers of the substandard quality of condoms in Africa. Some sex workers have also noted a need for condoms of various sizes, a particular problem in port areas, where clients may come from several nationalities and have varying condom size requirements.

Figure 3. Proportion of sex workers who always use condoms with clients or regular partners



* With clients, previous week

Refusal by clients remains the most important reason for non-use of condoms.[55,56] In a study from Ghana, women cited client refusal (73%), receiving a higher payment (33%) and client brutality (43%) as reasons for not using condoms.[56] About one in five (19%) sex workers in Antananarivo, Madagascar reported that in the past month, they had wanted to ask a client to use a condom but were too afraid to ask.[45] Nearly three quarters of sex workers in that study also reported having had sex with a client who had refused their request for condom use. Few of these sex workers believed that their co-workers would decline a client who refused to use a condom. Another study found that 7% of non-use of condoms was due to instructions from the owner of their working place.[54] Evidence suggests that where sex workers are poorly organized and have few alternative sources of income, they are less able to refuse a client who is unwilling to use a condom.

A finding consistent across several studies is that clients offer sex workers more money for sex without a condom.[33,57,58,59,60] A study in Kinshasa, Democratic Republic of the Congo found that about a quarter of sex workers reported having unprotected sex for extra money, charging up to 3.5 times more for unprotected sex.[58] Client characteristics and sex work locale are also important influences on condom use. One 14-month study in the Gambia documented 24,181 sexual contacts in a mix of seven "higher class" and "lower class" bars.[61] It found that condom use was not related to sex worker characteristics per se, but rather to client characteristics and the locale in which sex work was practised. Sex workers who operated from more than one location typically adopted the patterns of condom use of whichever location they happened to be in. As condom use appears to vary markedly by place of sex work and client characteristics, it may be most effective to target condom promotion and distribution at specific locations and client groups identified as having low condom use.[58]

Though the setting of sex work appears to be a critical determinant of condom use, characteristics such as level of education of sex workers or clients, and use of alcohol and other substances are also important predictors of condom use.[56,61] In one study in Pretoria, South Africa, about half of the sex workers reported having being too intoxicated by recreational drugs to negotiate condom use. Several strains of evidence indicate that linking condom use with family planning can lead to higher condom use and lower levels of HIV.[54]

In almost all studies, condom use varies by type of sexual partner. It is lower among regular clients, and boyfriends and husbands.[55,62] Low condom use with boyfriends is not due solely to partner reluctance to use condoms. Sex workers themselves often oppose condom use with these partners.[45] They offer several reasons for this reluctance, such as a desire to distinguish between their interactions with clients and those with their emotional partners; the belief that a steady partner is HIV negative; and the wish to avoid appearing mistrustful – as would be implied by a request for condom use. These attitudes were described by a sex worker in Kenya as follows: "….because you have been together for so long and there is that element of trust".[14] Another woman in the same study, speaking of regular clients, expressed a similar view: "We trust our permanent clients and that is why we don't use condoms with them. But when they go to Tanzania or Kampala we don't know what it is that they do."

A study by Godin et al. in three West African countries provides important insights into this topic.[40] The study showed that condom use during sexual acts between sex workers and their boyfriends was related to intention, level of perceived control and attitudes towards asking partners to use a condom. This suggests that condom use among sex workers and their boyfriends depends, at least in part, on personal ability to overcome obstacles to condom use. Behaviour was strongly associated with intention, while intention to use condoms was determined by the perceived advantages of condom use. The authors suggest that interventions may thus be more effective if information is provided about the advantages of condom use and skills to overcome obstacles to condom use are improved, such as negotiating less risky intercourse.

In most studies, condom use is self-reported and therefore potentially subject to bias. This is shown by studies which gathered data on self-reported condom use among sex workers and evaluated the presence of prostate-specific antigen (PSA) on vaginal swabs. The presence of PSA indicates that recent unprotected sex took place. More than a third of sex workers in Madagascar who reported protected sex and 21% who reported no recent sex had detectable PSA on vaginal swabs.[63,64] The corresponding figures in a study from Mombasa, Kenya were 11% and 6%, respectively.[64]

In addition to low levels of condom use that sex workers report with their boyfriends or spouses, these men often engage in high-risk behaviour. Almost half of the sex workers interviewed in a study in Pretoria, South Africa reported that their boyfriends had concurrent partners.[65] Further, most (70%) boyfriends of sex workers in a study in Guinea and Benin reported having been clients of one or several sex workers other than their girlfriends.[40] Another study in Benin found that HIV prevalence was twice as high among boyfriends of sex workers as among their clients (16.1% among boyfriends versus 8.3% among clients).[66]

1.4.2 *Partner number*

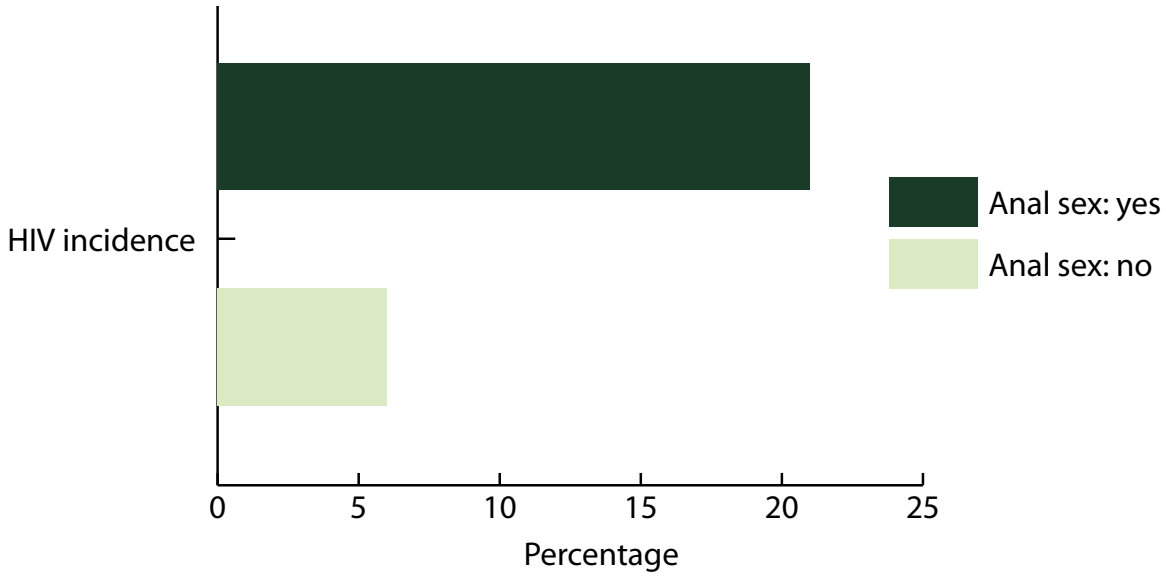
The number of partners that sex workers have varies markedly across settings. Few studies have specifically assessed interventions among sex workers to reduce the number of partners. Some studies have shown a decrease in the number of partners with implementation of services for sex workers.[9,49]

Potential strategies for reducing partner number include reducing the demand for paid sex, raising the price of sex exchanges and reducing the number of women entering sex work. Male attitudes and behaviours, and stigma and discrimination against women continue to be critical factors contributing to men's demand for paid sex. To date, most interventions among client groups have focused on promoting safer sexual practices rather than reducing the demand for commercial sex. Innovative options exist for reducing the demand for sex work. These include encouraging migrant workers in industries such as mining to live with their families where possible; this could reduce the demand for sex work generated by having large numbers of men living in single-sex hostels.

1.4.3 *Anal and oral sex*

Substituting oral sex for sexual acts that have a higher HIV risk such as anal and vaginal sex is a potential strategy for reducing the risk to sex workers. In Hillbrow, South Africa, sex workers who ever performed oral sex were at reduced risk for HIV.[46] Oral sex was more commonly reported by older sex workers in that study. In one study, sex workers who had anal sex were 3.5 times more likely to acquire HIV.[67]

Figure 4. HIV incidence/100 patient years among sex workers, by anal sex, Abidjan, Cote d'Ivoire, 2001[43]



1.4.4 *Vaginal practices*

A causal relation between vaginal practices and HIV acquisition is biologically plausible.[68] Vaginal cleansing or other vaginal practices, previously referred to as "dry sex", could disrupt the genital mucosa or cause inflammation, increasing the risk for acquiring HIV-1. Also, it is thought that bacterial vaginosis, previously associated with vaginal cleansing, could be an intermediary factor between vaginal practices and HIV infection. From trials of the spermicide nonoxynol-9, it is clear that some apparently harmless substances inserted into the vagina can cause epithelial disruption and are thus likely to facilitate the acquisition of HIV.[69] Evidence of the association between vaginal practices and HIV is, however, limited to a few longitudinal studies which have inconsistent findings.[70,71,72]

A 10-year prospective study in Mombasa, Kenya, found that sex workers who inserted substances, particularly soapy water, with a finger or cloth more than two inches past the introitus had a higher risk of acquiring HIV. Compared with women who did not perform vaginal washing, those who used soap had an approximately fourfold increased risk of acquiring HIV.[70] Regular douching was reported by 72% of the 1270 study participants, of whom the majority inserted fluids in the vagina, generally after each sexual intercourse. Other studies from Nairobi found almost two thirds of FSWs douche more than once a day, most commonly with water and soap (58%, 173/299).[73]

Sex workers commonly use a variety of substances in their vagina in preparation for sex work and in between clients, especially after unprotected sex with clients.[73,74] Some report using these practices to remove semen as they believed this action would reduce the risk of HIV infection. Other motivations cited for these practices are personal hygiene and to enhance client pleasure. One sex worker in the Nairobi study reported gently cleaning her vagina with a soft cloth dipped in lemon and water to soothe her vagina, which became sore after her second client.[74] Other women in the same study said they wanted to appear clean for their next client and to trick him into thinking he was the first client of the day because "it's like [the hotel] business . . . one has to maintain a level of cleanliness to attract customers". Women also described using tea leaves or simply wiping with a towel, handkerchief or bedsheet before sexual intercourse because "those things make the vagina shrink and look very small and tight.[74] Women reported that increased access to bathing and washing facilities may help them avoid such practices.

In addition to potential biological mechanisms, perceptions of desired vaginal states and vaginal practices themselves can undermine condom use. For example, in some parts of southern and eastern Africa, the preference for dry sex and mixing of body fluids is at odds with the use of condoms.[75,76] Many participants in a study of vaginal practices in KwaZulu Natal, South Africa expressed a deep reluctance to use condoms while engaging in vaginal practices.[77] Some sex workers in Pretoria, South Africa, reported that boyfriends insist on having dry vaginal sex with them, and therefore condoms are not used.[65]

As vaginal practices have not yet been clearly established as being harmful or otherwise, it is currently not possible to differentiate with any certainty between harmful practices and those that may be of some benefit. Further prospective studies, and assessment of the mechanisms by which such practices might increase HIV acquisition and how modifiable these practices are, will make an important contribution to improving the sexual health of women and may assist in reducing their risk for acquiring HIV.

1.4.5 *Hazardous alcohol use, unsafe sex and sexual violence*

> "It were far better for me that I should lose my country than it should be flooded with drink... drink puts devils into men."
>
> *Khama, King of the Batswana of Botswana, 1888*

Use of alcohol among clients and sex workers at the time of purchasing sex is common. Not surprisingly, a frequent explanation for having had unprotected sex is that both the sex worker and the client were intoxicated during intercourse. In addition to affecting sexual decision-making and judgement, alcohol use also hampers condom negotiation skills. Research in Cape Town, Durban and Pretoria, South Africa, found that alcohol and other drugs are commonly used prior to work to lower inhibitions and give women the courage to approach clients.[65,78] Many of these women also explained that they always used condoms, except when intoxicated.

In a study in Ethiopia, out-of-school youth who reported chewing *khat* were six times more likely to exchange sex for money than non-users.[79] Similarly, among those who sell sex, drinking alcohol was more than twice as common as among the general population.[79] Clift et al. found high alcohol use among women who were food and recreational workers in areas of Tanzania adjacent to mines. Half of these women sold sex.[80]

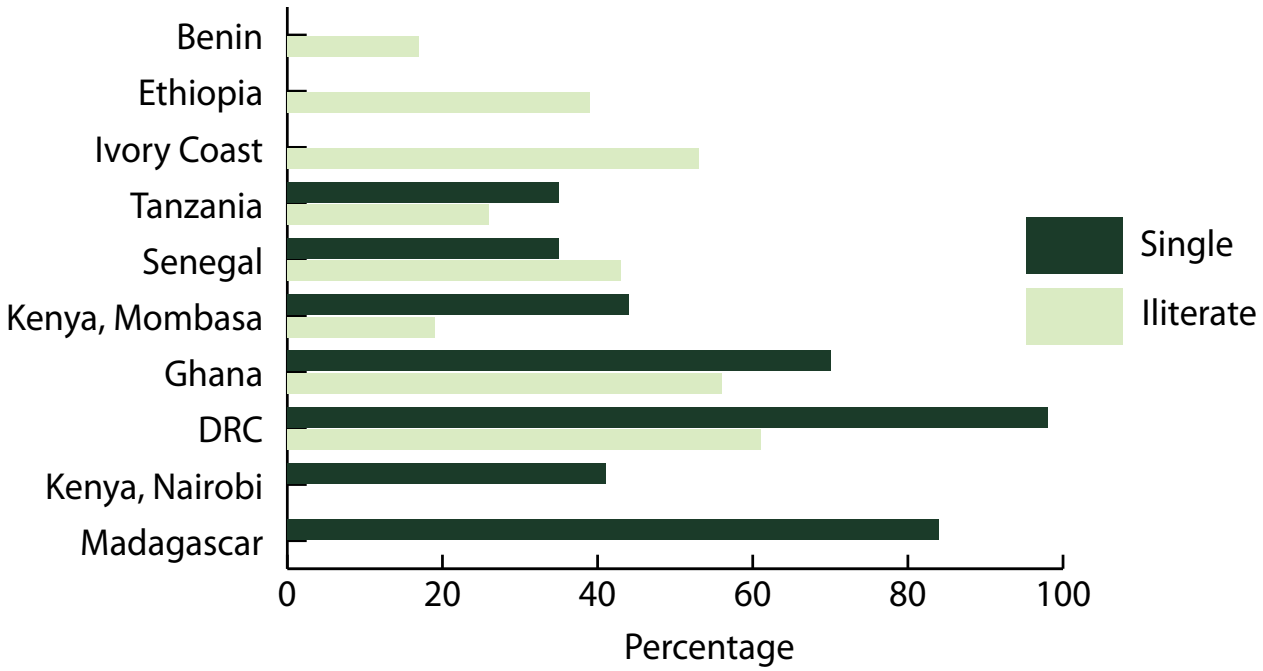
Drinking patterns in much of Africa are characterized by sporadic heavy episodes of drinking, often in the form of weekend binge drinking.[81,82] Rapidly accruing evidence indicates that these patterns of drinking have independent effects on sexual decision-making, and on condom-negotiation skills and correct use of condoms.[81,83] Many studies have shown that women with heavy episodic drinking patterns (defined as more than five drinks on one occasion) are more likely to use condoms inconsistently and incorrectly; experience sexual violence; and acquire an STI, including HIV.[84,85,86,87]

1.5 Vulnerability, social and other contextual factors

The level of biomedical risk for HIV among sex workers and clients in Africa is an outward manifestation of their extraordinary social and economic vulnerability, which is expressed in a willingness to adopt high-risk sexual behaviours. This underlying vulnerability is due to factors such as gender-determined inequalities; limited access to health, social and legal services; inadequate or even harmful legislation and policies; limited access to information and HIV prevention commodities; childhood abuse; stigmatization and marginalization; and exposure to factors such as population mobility and hazardous use of alcohol. All the biomedical and social risk factors mentioned here are heightened by violence, or threats of violence, which especially compromises safer sex negotiations.[88] In addition to the indirect effects of sexual violence on HIV risk, rape, particularly gang rape, can directly increase the risk of becoming infected with HIV through vaginal trauma and lacerations.

Many young African women who trade sex for food, money or shelter come from disadvantaged backgrounds, are poorly educated, and lack the skills required for other types of formal or informal employment. They also commonly have a background of marital disruption. For example, many sex workers in a large study in Senegal were divorced, with these women citing economic factors and lack of occupational choice as reasons for entering sex work.[41]

Figure 5. Marital status and literacy of sex workers



1.5.1 *Socioeconomic and occupational context of sex work*

Overall, most sex work takes place within an unhealthy and unregulated working environment, with little or no promotion of safer sex, scant control over a client's behaviour and an encouragement of a high client turnover. In areas with economic insecurity, especially food insecurity, sex work is often the sole option for women, especially those with dependants. Women who sold beer and sex to truck drivers and local men at a truck stop between Durban and Johannesburg, South Africa described financial support for their dependent children or relatives as a key motivator for sex work.[33] A study in Nigeria showed that hunger and food insecurity were particularly strong predictors of unsafe sexual behaviour among sex workers.[89]

The effect of poverty or relative deprivation on sexual decision-making is highly complex. A study of 248 rural and urban sex workers in the Gambia suggested that the majority of them did not enter the industry because of extreme poverty, although women initially cited this as the motivating factor. The great majority of sex workers in the study, especially the younger ones, were not considered to be destitute by local standards. Few appeared to have been rejected by their families. Sex workers from rural areas had mostly left home to avoid the "drudgery of farming and domestic work or an unwelcome marriage".[61,90]

Profound vulnerability, evident at a number of different levels, is prevalent throughout sex work settings in sub-Saharan Africa. Often, this heightened vulnerability is embedded in the settings themselves. For example, sex work often occurs on major roads, which pass through rural areas. These rural areas, compared with urban ones, have fewer health services and little access to health information, prevention messages and condoms. Some groups in sex work settings face even higher levels of social isolation and HIV infection than others. Two of these groups (young sex workers and groups affected by population mobility) are described below.

1.5.2 *Demand for girl and young women sex workers*

Young women in sub-Saharan Africa are already at high risk for HIV; sex work further amplifies this risk. Age-discordant sex – where older men purchase sex or provide gifts in exchange for sex from young women – is a key driver of the HIV epidemic in sub-Saharan Africa.[91,92] A study in Madagascar also found young age to be a risk factor for incident STI other than HIV.[45] To date, the average age of sex workers was between 25 and 30 years in almost all studies in Africa, with lower estimates found in studies among urban sex workers in Ethiopia and Kenya.[93,94] Conversely, sex workers in a study in a South African mining community were a mean 32.9 years.[95]

Sexual exploitation of girls below 18 years is prohibited by international law, though many reports indicate that women often enter sex work at ages younger than this.[45] Humanitarian emergencies and the dysfunction or breakdown of families are important contributory influences, as are factors such as a demand for sex work and, especially, high demand for young sex workers. A large proportion of homeless youth may be forced to sell sex. Little information is available on this from Africa, but in a study in the United States, almost a third of homeless youth reported survival sex in a study.[96]

Adolescent females living near areas where the demand for sex work is high, especially areas where poverty is endemic, may have a high likelihood of entering sex work. Nearly 80% of adolescent females living near truck stops in Kenya reported having exchanged sex for money or gifts with transport workers. Not surprisingly, they also had high rates of HIV infection.[97] It appears that the higher the level of demand for paid sex, the lower the age that women begin sex work in Africa. For example, sex workers living on the outskirts of Nairobi, Kenya, where the demand for sex work is high, were younger than their rural counterparts, on average by four years.[34]

Out-of-school youth are of major importance for HIV prevention. Among out-of-school youth aged 15–24 years in the town of Bahir Dar in Northwest Ethiopia, 22% (72/304) of males reported ever purchasing sex, while 13% of women (40/304) had exchanged sex for money. Condom use in these encounters was low, with only 37% (41/112) reporting consistent condom use, while 23% (26/112) had never used a condom during commercial sex.[79] This area has among the highest HIV prevalence in Ethiopia.

Other studies have found that there is a more complex relationship between age of sex worker and HIV risk. A study in Cameroon showed that older rather than younger women were at higher risk for HIV.[98] Another study in Ghana found that young women were more likely to use condoms than their older counterparts.[56]

1.5.3 *Population mobility and sex worker and client vulnerability*

> "If you want to spread a sexually transmitted disease, you'd take thousands of young men away from their families, isolate them in single-sex hostels, and give them easy access to alcohol and commercial sex. Then, to spread the disease around the country, you'd send them home every once in a while to their wives and girlfriends."[99]

Mobile people, migrants and their families are more vulnerable to HIV than populations which do not move around. This includes people who move from one place to another temporarily or permanently, as well as migrants who have taken up residence or remain for an extended stay within a foreign country.[100] The most vulnerable mobile people are refugees and internally displaced people, who live through chaotic and often violent conditions. In such circumstances, protecting oneself against a possible risk of HIV may be seen as a low priority. Women and girls among this group can find themselves deceived or coerced into sex work to gain access to basic needs such as food, shelter and personal safety.

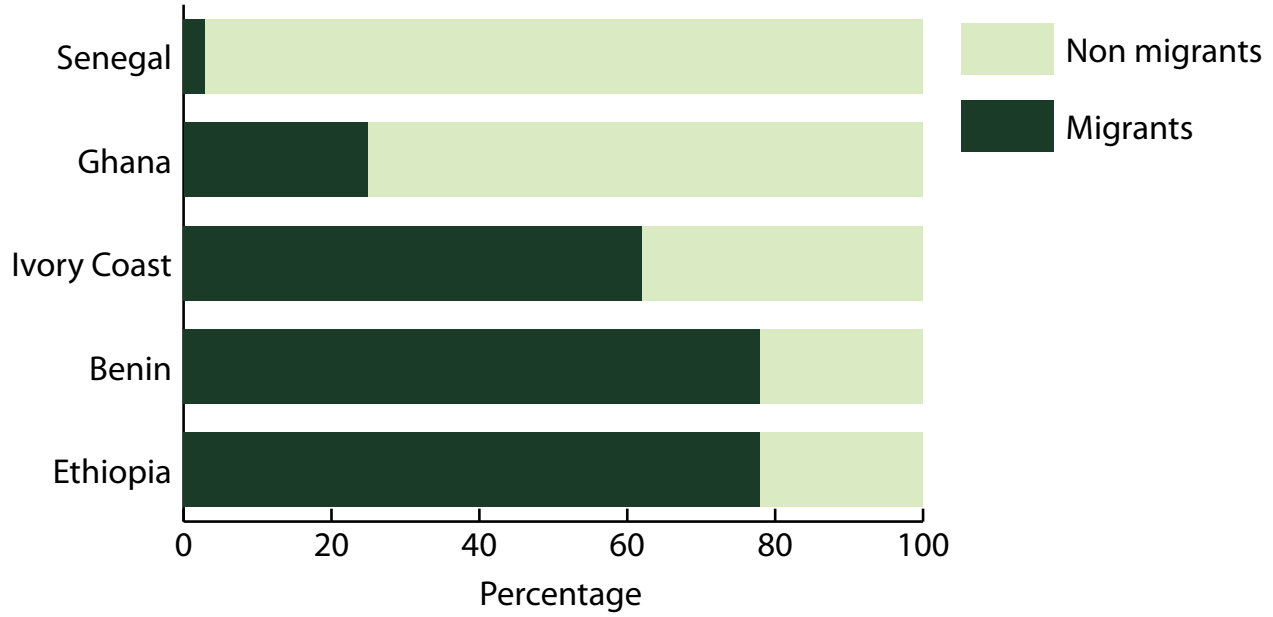
Within each country of sub-Saharan Africa, the areas most heavily affected by HIV are often those linked with high long-term mobility, adjacent to main transport routes or in border regions. Aside from sex workers, key employment groups that involve mobility include truckers and transport workers, miners, seafarers, military troops and seasonal agricultural workers.

Women searching for work are also often highly mobile and vulnerable. Women may move to an area seeking employment, and then enter the sex trade out of financial necessity upon arrival. Alternatively, potential employment in the sex trade may motivate movement. Women from rural areas, in particular, may move in search of a better life in cities, drawn either by friends or family there, or by images of cities as places of opportunity.

West African studies, in particular, show that sex workers in a country are often not nationals of that country.[43,56] Economic and political instability in neighbouring countries can lead to rapid changes in the nationality of sex workers in a specific country.[43,49] In Benin, 58% of sex workers interviewed had lived in the area for less than six months.[49] The level of loss to follow up in studies among sex workers is generally higher than studies among other population groups, which may be indicative of the transient nature of this population.[67,95,101,102]

> How is it possible to have brothers and sisters and not be able to communicate with them? There are a thousand things I had to tell, to exchange.... I was alone, as only a tree knows how to be alone.
>
> **Ken Bugul, Senegal, 1984**

Figure 6. Proportion of female sex workers who are migrants



Several studies have found that population mobility is associated with high-risk sexual behaviour and HIV among women.[54] Mobile women are more likely to report having received money or goods for sex than their non-mobile counterparts. Migrant populations face obstacles to accessing HIV information, health services and prevention commodities such as condoms. Newly arrived women may not know which services to access and may face language barriers or be turned away by providers. Moreover, xenophobic discrimination and violence are phenomena that are all too common in African settings.

Sex workers on major highways in Africa appear to be especially mobile. This is perhaps because sex work settings on transport routes do not remain static – accommodation and leisure preferences of truckers fluctuate over time.[14] One study found that sex workers spent a quarter of nights out of a month away from their usual area of work, often travelling with truckers along the highway in eastern Africa.[14] These shifts in population and settings complicate service provision and qualitatively demonstrate the potential for spread of HIV epidemics along the highway and to adjacent communities.

Mining communities and people living in surrounding areas often have a high HIV prevalence, fuelled by sex work. Women working in food or recreational facilities in mining areas (bars, guesthouses, hotels, disco and video halls) in communities neighbouring a gold mine in Tanzania had a high STI/HIV burden.[80] About a quarter of these women had syphilis and 42% were HIV infected. Importantly, most of these women were born outside the region, with 84% having moved into the area in the past two years. Half of these women reported receiving money for sex in the past year, while 55% of miners had purchased sex in this time period. HIV prevalence in communities neighbouring these mines was higher than in other parts of the region.

2. Comprehensive services for reducing HIV transmission in sex work settings in sub-Saharan Africa

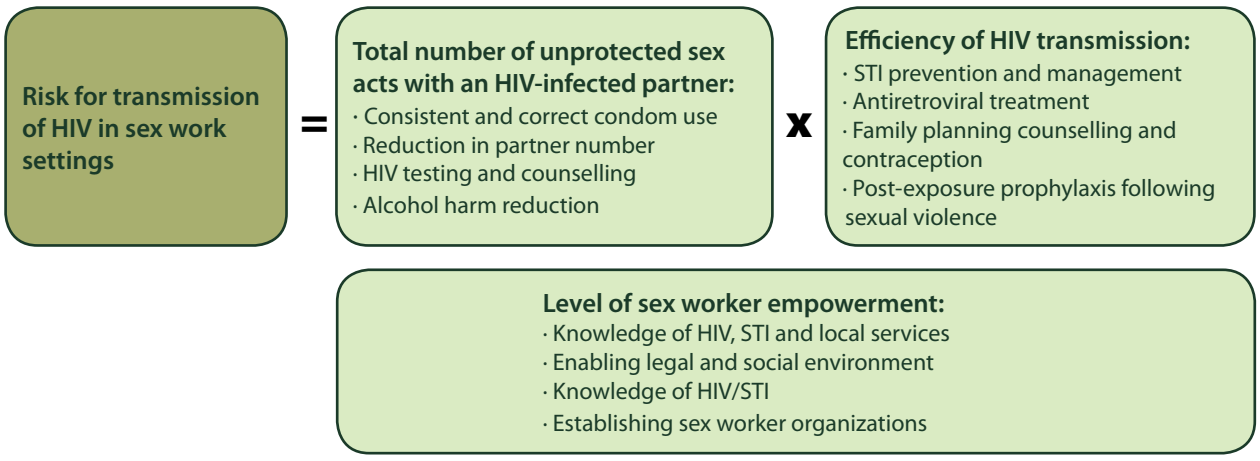
Prevention is the mainstay of the HIV response, and sex workers constitute an essential focus population for HIV and STI prevention programmes. In addition, access to HIV treatment and care for those already infected with HIV is important as this can potentially reduce the efficiency of HIV transmission. Much can be done to reduce the burden of HIV among sex workers and their clients. Modelling, based on the findings of projects thus far, provides estimates of the potential benefits of such programmes. Using data collected among sex workers on the main road linking the Ugandan capital Kampala with Mombasa, the largest port in eastern Africa, modelling showed that raising condom use levels from the current 78% to 90% would avert two thirds of the estimated 3200–4148 HIV infections that occur here each year.[22]

2.1 Interventions for preventing HIV acquisition in female sex workers

Within multisectoral initiatives, HIV prevention among sex workers calls for a three-tiered strategic approach: preventing entry into sex work, targeting interventions to prevent HIV among those involved in sex work and empowering women to leave sex work. While the health sector's role has traditionally been to focus on the second component, it can make an important contribution to the other two tiers of the strategic approach. Moreover, to avoid contributing to stigmatization and ensure acceptability and uptake of services, the health sector must address sex workers' overall well-being as well as their level of empowerment.

Using a standard framework developed by WHO, HIV prevention interventions for the health sector are presented below within three broad categories: reducing unprotected sex; decreasing HIV transmission efficiency; and empowering sex workers (Figure 7).[103]

Figure 7. Framework of interventions to reduce HIV transmission in sex work settings: reducing the number of sexual exposures to HIV and diminishing HIV transmission efficiency, both underscored by empowerment of sex workers[103]



2.1.1 *Reducing unprotected sex*

An increase in condom use and decrease in partner number are the main strategies for reducing unprotected sex. Condoms are the single most effective available technology for reducing sexual transmission of HIV and are the principal prevention tools in the foreseeable future.[104] These should conform to quality standards and be made available free or at low cost in sex work settings. Each stakeholder has a role to play in maximizing successful negotiation of condom use, including enforcing their use in formal sex work establishments. Robust condom promotion among sex workers and clients as well as owners of sex work establishments and other intermediaries is a top priority and a core component of 100% condom use programmes.[105] All contacts between health workers and sex workers or clients must be used to promote and provide condoms. Building the condom negotiation skills of sex workers is also a central component of condom programming and includes assisting sex workers to initiate discussion of condom use with clients, provide condoms at the time of sex and, if negotiation fails, refuse clients unwilling to use condoms.

A systematic review by Foss et al. showed condom promotion among sex workers to be particularly effective, more so than with other population groups.[106] Most of the highly successful interventions described in the review involved some combination of peer or other health education, condom provision and/or STI testing and treatment. However, most of these studies used a before–after study design, which has inherent limitations, and many did not contain control groups. Of the 19 studies among sex workers, 15 reported increased condom use; in eight of the studies condom use doubled. Thus, despite some limitations of the available data, there is a substantial body of evidence that interventions targeted at sex workers and their clients can increase condom use.

There are many examples throughout Africa of peer and other health education projects that have successfully promoted condom use.[107,108] Consistent condom use, with levels as high as 86%, was seen in a study of peer-mediated condom distribution in Mombasa, Kenya.[55] In a sex work intervention that provided free condoms and STI services in Kinshasa, Zaire, condom use was found to increase and was accompanied by decreases in the prevalence of HIV and other STIs.[109] However, no more than about 60% of the women reported condom use with all clients each month. The main obstacle to 100% condom use remained refusal on the part of male clients. Further research is needed to disentangle the factors responsible for an increase in condom use.

A randomized trial among sex workers in Madagascar demonstrated that the addition of clinic-based counselling to peer education reduces STI prevalence.[47] The counselling intervention lasted for about 15 minutes and covered risk assessment; information on STI and HIV, and dual protection; condom negotiation skills; and promotion of a "no condom, no sex" policy. After six months, more than half of the sex workers in the intervention arm reported 100% condom use with clients in the past month. Increases in condom use with a non-paying partner were also noted, though the levels remained low. A reduction in STIs among sex workers compared with controls showed that the impact of male condom programmes on sex workers can be further heightened by more intensive counselling on risk reduction. Several long-term studies among sex workers have found that declines in high-risk behaviour and HIV incidence occur over time, possibly due to the ongoing risk-reduction counselling provided as part of study activities.[110,111] This adds to other evidence showing the effectiveness of condom promotion initiatives.

There is often a differential impact of condom promotion on condom use within different types of relationships. A study in Senegal found that condom promotion can lead to high condom use with emotional partners.[112] However, increasing condom use in relationships between sex workers and their boyfriends or husbands remains a big challenge.

It is also necessary to provide services to address the specific factors that undermine condom use, such as the use of alcohol and other substances. Sex workers with hazardous or harmful alcohol use have a higher risk of HIV infection and therefore a greater need for support. Alcohol adversely affects their sexual decision-making, and their skills to negotiate the use of condoms and use them correctly. Despite evidence of the effectiveness of alcohol-control measures,[113] few interventions have been implemented thus far in African countries. It is possible that a reduction in alcohol use among sex workers and clients would reduce the number of unprotected sex acts, and the incidence of sexual violence, HIV and other STIs. Specifically, sex workers who are assisted to adopt safer patterns of alcohol use may have concomitant safer sexual behaviours and consequently reduced rates of infection with HIV and other STIs. In particular, brief interventions are cost-effective and recommended for wide use,[113,114] although they remain underutilized in sex work settings.

Campaigns against alcohol may require time to take effect, but are equally essential to as more direct measures of condom promotion, since far-reaching structural measures create the conditions necessary for achieving sustained prevention results. These broader efforts will also have marked health and social benefits for sex workers beyond a reduction in HIV burden.

Projects for sex workers have seldom had success in reducing the number of clients,[47,55] though this did occur in some projects.[115] It is unknown which interventions are most effective in reducing client number.

2.1.2 *Reducing HIV transmission*

A major determinant of the efficiency of HIV transmission when condoms are not used or fail is the presence of an STI. Provision of family planning counselling and contraception also reduces transmission efficiency by preventing unintended pregnancies among HIV-infected sex workers, with consequent risks for mother-to-child transmission (MTCT) of HIV. Contraception also decreases the number of dependants (having dependants is often a motivator for entering sex work and a constraint to leaving it).

Interventions to improve access to STI services have, to date, figured prominently in most projects in sex work settings. Many projects have assumed direct responsibility for provision of STI services; while for HIV care and antiretroviral treatment (ART), the focus has been more on building and supporting referral networks. Provision of ART for sex workers and/or clients, with its consequent reduction in viral load, is likely to reduce the efficiency of HIV transmission. In most programmes, staff or peer sex workers could potentially accompany sex workers to clinics that provide ART to help them overcome barriers to service use, such as fear of health workers and related discrimination.

Many projects in Africa have successfully reduced the burden of STI among sex workers.[43] The report of Project Sids-2 in Benin attributed a decrease in STI prevalence to an increase in safe sex and condom use with clients, and probably also to provision of STI services in the sex worker clinic.[49] In other parts of Benin, where no targeted interventions are available, the HIV prevalence among sex workers increased from 34% in 1993 to 51% in 1999.[49] HIV incidence in a cohort study in Tanzania declined from 13.9/100 woman-years to 5.0/100 woman-years over a period of 30 months.[116] Concomitant declines were noted in STI prevalence. These changes were attributed to women in the study having received three-monthly STI screening and syndromic case management, together with education on HIV/STI, condom distribution, and HIV testing and counselling.

A cohort study among sex workers in Nairobi, Kenya found that the per-act rate of HIV acquisition declined dramatically between 1985 and 2005. This reduction correlated closely with decreases in the prevalence of gonorrhoea and predated reductions in HIV prevalence among the general population in Kenya by more than a decade. The study notes that this decline may represent the impact of improved prevention and treatment of STIs, among other factors.[117]

There are many opportunities for improving STI services and the impact of patient–provider contact at such services.[118] STI services for sex workers and clients must consist of the following complementary approaches: management of symptomatic STIs, plus screening for asymptomatic STIs and/or periodic presumptive treatment of STIs, especially when accurate screening is not feasible.[9] Consideration of these three STI management options, all of which are underscored by consistent condom use, is provided below:

- Syndromic management of STIs works well for sex workers with symptoms[101] and is based on standardized algorithms, which are tailored to the prevalence of STIs in different settings. The alternative, laboratory-based etiological diagnosis, usually requires specialized laboratory diagnostic services that are often unavailable and may require return for follow-up visits.
- Screening for STI at pre-specified intervals can identify asymptomatic infections and has been assessed in several studies.[48,55,67] This is most useful where STI tests are widely available, affordable and rapid, but screening for symptoms alone is also important. In one study, symptom-driven screening was compared with a full gynaecology examination, including speculum visualization of the cervix and tests for trichomoniasis and candidiasis. The incidence of HIV fell in all women who received STI screening, whether basic or more intensive.[43] In some parts of Africa, STI screening occurs within the context of

registered sex workers who attend scheduled visits. Regular screening for STI occurs in Senegal among registered sex workers and has been credited with contributing to a low and stable HIV prevalence in the country.[112] Here, sex workers older than 21 years are required to register and then attend monthly clinic visits for examination, STI screening tests, free condoms, education on STI, family planning counselling and even provision of services for children of sex workers. These clinics are staffed by doctors, nurses and social workers. Many sex workers, however, choose to remain unregistered *les clandestines*, especially those who are younger than 21 years.[36] There are 1000 registered sex workers in the capital Dakar alone. Systems for registering sex workers are also in place in Madagascar. These target "women who go to the boats", who are required to attend STI clinics at regular intervals.[13] Most clinical services for sex workers include syphilis screening at predetermined intervals, though screening for *Chlamydia* is increasingly becoming a part of STI control programmes.

- Presumptive treatment for STI for sex workers involves giving antibiotic treatment for relevant bacterial or parasitic STIs on a presumptive basis. This can occur either on a one-time basis or be repeated at predetermined intervals. There is a good rationale for administering periodic presumptive treatment in situations where the prevalence of STIs (especially chancroid) is high and sex workers have poor or inadequate access to health-care services. Based on observational[44,95,119,120] and trial evidence,[102,121,122] WHO recommends that can be considered a component of STI services for sex workers, as part of the package of services mentioned above.[123] can be delivered within established STI services or in local outreach services. Pathogens to be included in a intervention should include *Neisseria gonorrhoeae*, *Chlamydia trachomatis* and *Treponema pallidum*, where these are prevalent, as well as possibly *Trichomonas vaginalis.* Combination therapy using single-dose regimens, such as azithromycin plus cefixime, is recommended to minimize the development of resistance. Once adequate STI services are established and/or infections are controlled to lower prevalence levels, the intervention should be discontinued.

In recent years, many projects have developed innovative approaches to STI service provision including carrying STI treatment kits to sex workers and clients in venues such as hotels.[124] Communication activities can be used to raise awareness about STIs and to promote the use of services. Peer educators can proactively link sex workers who have STI symptoms with STI services; reinforce correct use of STI medications; trace those who miss clinic visits; and encourage patients to attend STI follow-up visits. It is vital that STI services are available and easily accessible for clients as well as sex workers. Where feasible, partner treatment must be encouraged for regular clients, boyfriends and husbands to reduce the chances of reinfection and further transmission.

There are limitations as well as benefits to all the above STI control interventions. No one intervention is effective by itself and synergistic combinations are needed, at several levels, to have maximum impact.[9] Ideally, this would include a coordinated response to actively support 100% condom use in sex work settings and improve access to effective STI prevention and care services for sex workers and their clients.

2.1.3 *Empowering sex workers*

Sex workers can be empowered through provision of information and education; improving knowledge of HIV status; increasing skills that make sex work safer; addressing gender-based violence; and building sex worker networks. This also includes skills development to enhance opportunities for occupational alternatives to sex work. Though other sectors have a major part to play in these processes, the health sector also plays an important role in addressing barriers to leaving sex work, such as treating drug dependency, addressing mental health problems, and assisting with obtaining grants and social services for dependants, where available. Migrant sex workers may face substantial barriers in communication and accessing services. Such barriers can be reduced through cultural mediators, employing peer educators from migrant population groups, translating materials, and providing culturally sensitive counselling and support.

Information, education and communication

Provision of information, education and communication (IEC) can occur when sex workers attend health services and, more importantly, through regular outreach and peer education efforts, as well as activities in community-level drop-in centres (DICs).

Sex workers are generally aware of their level of risk for HIV, with as many as 80% saying that fear of HIV acquisition is a daily concern.[41] They also typically have high levels of knowledge on the key features of the infection, though half the sex workers in one study thought that individuals who appear healthy are uninfected with HIV.[54] Low levels of knowledge and poor risk perception have also been reported in other studies.[36,55] Higher levels of knowledge are associated with increased condom use.[56] Improving knowledge of STI symptoms among sex workers and the importance of accessing STI services should they have such symptoms are also critical and can take place through peer education.[55]

IEC materials could be shared among organizations in the same country and in other countries with common language groups. However, materials on HIV and STI prevention, as well as other health, legal and social issues often need to be adapted to the sex work community's various subpopulations and common languages, as well as the traditional and cultural behaviours in the locale. This requires a process of engaging sex workers in assessing their knowledge needs for designing IEC materials. This engagement may begin with a survey of the information needs of sex workers, following which the materials and communication media may be field-tested through focus groups and interviews with sex workers. Materials should be simple, clear, consistent, non-judgemental, attractive and culturally sensitive.[107] In addition to printed materials, other educational media have been successfully used, including peer-led drama, slides, video sessions and role-playing exercises.[43,55]

HIV testing and counselling

People testing positive for HIV are more likely to change their sexual behaviour than those testing negative, or of unknown status. Limited evidence is available as to whether this finding extends to sex workers who test positive. A cohort study in Mombasa, Kenya showed that sex workers who acquire HIV infection report fewer sexual partners and higher condom use than when they were uninfected.[125] Another study in Florida, United States found that after being diagnosed as HIV positive, street-based sex workers curtailed their sex work activities, had less unprotected sex and reduced drug use. Disclosure of HIV status to clients, however, was rare.[126]

There is a need for integrating HIV testing within services for sex workers and using this opportunity to support changes in behaviour, especially among those testing positive. Staff who provide HIV testing and counselling may require training to enable them to offer a sensitive, non-judgemental service that is tailored to meet the needs of sex workers and clients. It is important to always obtain informed consent before HIV testing is performed. Strict confidentiality is crucial when performing HIV testing, during counselling and in storing test results. Offering repeat HIV testing at pre-determined intervals potentially has several advantages, including increasing the likelihood of detecting acute HIV infection, which is a vital period of HIV transmission.

Despite increases in the availability of testing services, many sex workers remain unaware of their status. Little information is available on specific service delivery models for HIV testing and counselling in sex work settings in sub-Saharan Africa. Models for provision of HIV testing among this group therefore need further development, especially those relating to the optimal role of peer counsellors and sites for providing testing. Peer outreach offers an opportunity to encourage testing and link sex workers with local testing services. HIV testing for sex workers is often done during visits to other services, such as antenatal clinics. Almost half of the sex workers in one study who knew their status had been tested during pregnancy.[56]

Increasing skills for condom negotiation, client refusal and creating a safer workplace

Projects can empower sex workers by building skills which enable them to increasingly negotiate safer sex practices, refuse a client and maximize their ability to avoid risks for HIV acquisition. A study in South Africa investigated the effects of an intervention to enhance skills and increase self-efficacy as well as overall empowerment among sex workers who use drugs.[65] This intervention consisted of two one-on-one sessions held within two weeks, each lasting for about an hour. These educational and skills-building sessions included an individualized assessment of each woman's drug/alcohol use and sexual risks, which informed specific goals to help the woman negotiate risk reduction and communicate the importance of condom use with sex partners. The women also learned violence prevention strategies, such as avoiding hazardous alcohol use, communication techniques in difficult situations and ways to exit a volatile situation if required. Women were also shown how to actively seek community resources. HIV education was tailored to increase factual knowledge and dispel myths about HIV and sexual practices that emerged from focus groups (for example, that two male condoms are better than one). Particular emphasis was placed on contextual (such as sex-related violence, substance use and cultural barriers to increased condom use) and lifestyle issues relevant to sex work. An individualized concrete plan was developed to support the goals of reducing risks and increasing independence. In addition to demonstrating male and female condom use, sessions involved role-playing and rehearsing verbal assertiveness.

The study found a decrease in substance use during sex work and fewer STI symptoms than in controls. As in other studies, this study showed that outreach to sex workers was feasible and counselling interventions can in fact reduce HIV risk behaviour and substance use. Involvement of the community and an advisory board were central aspects of this study.

Prevention of gender-based violence: a critical component of empowering sex workers

Many women in sex work experience violence on the streets, on the job or in their personal lives. Often, this is a direct manifestation of the stigma and discrimination surrounding sex work in general. Violence and lack of control over one's life means that sex workers may give lower priority to their health needs than to more immediate concerns such as safety and survival. Efforts to eliminate violence towards sex workers need to involve law enforcement agencies, the judiciary and health services. In some cases, law enforcement authorities and laws actually increase the risk of violence against sex workers rather than providing access to equal protection under the law. Criminalization prevents sex workers from reporting abuse to the police or seeking legal recourse after rape or sexual assault which, in turn, serves to strengthen clients' power and dominance over them. Police harassment of sex workers is well documented, and takes the form of assault, unlawful arrests, rape, extortion, and demands for sex or money as bribes.[27,33,127]

At an individual level, educational strategies can help women reduce violence by providing safety tips and creating awareness of legal protection options.[88] Provision of post-exposure prophylaxis (PEP) with antiretrovirals (ARVs) and related services after rape is especially important. At a community level, working with the police is needed to reduce police violence and ensure that they take reports of violence from sex workers seriously.

Sex work networks and organizations

Vulnerability is highest where sex workers lack internal solidarity and their own social support networks. A lack of sex worker organizations means that the collective power and social capital of sex workers is reduced. This is not necessarily always the case, however. In Nigeria, there are sex workers who live and work in highly structured hotels or house settings where owners, hotel managers, as well as senior sex workers have substantial influence.[128] Each setting has a sex worker leadership structure, consisting of a chairperson who sets the rules, a deputy chairperson who relays the rules to other sex workers, and a policing agent who enforces the rules. With this community infrastructure, an HIV prevention programme in Nigeria was able to effectively reach and involve these women in interventions.

Building sex worker leadership and networks can also assist in overcoming problems in the internal working structures of sex work. Without these networks, competition can occur between sex workers, with concomitant isolation and increased power for clients. In such circumstances, the capacity for behaviour change and concerted action around health may be low.

Competitiveness among sex workers and their heterogeneous backgrounds (especially migrant versus local sex workers) can be substantial obstacles to self-organization for sex workers. Conversely, peer support and community mobilization can facilitate social cohesion, mutual support, and development of self-help groups and networks between sex worker groups. Organizations of sex workers should also aim to promote higher payments for sex, which has been associated with a lowering of risk.[45] Sex workers who lead and run interventions themselves can assist in framing HIV risk reduction and violence prevention among other sex workers within a broader context of occupational health, improving working conditions and enabling sex workers to have labour rights.

2.2 Treatment, prevention and care for sex workers living with HIV

Wherever possible, efforts should be made to facilitate access to HIV treatment, prevention and care for sex workers with HIV. This includes emotional support and counselling on livelihood alternatives; protecting the human and legal rights of sex workers; planning for future care and treatment; and, in some cases, social and financial assistance. Sex workers with HIV often have repeat exposure to HIV and other STIs, unhealthy work environments, poor nutrition, experiences of violence, lack of access to primary health services and frequent alcohol dependence, all of which compound the poor state of their health and HIV disease.[129] Despite these potential problems, little information is available on HIV treatment and care services for sex workers in sub-Saharan Africa.

Sex workers with HIV face a double stigma, both from their involvement in sex work and from their HIV status. In many communities, these discriminatory attitudes are further exacerbated by underlying gender inequalities. Given this dual stigma, it may be necessary to work together with HIV services to ensure that they are sensitive to the particular needs and circumstances of sex workers. Extra training for staff in mainstream services may be necessary to ensure that service provision is of high quality, non-judgemental and supportive.

Counselling and support are required to facilitate disclosure of HIV status to partners. Projects can consider setting up specific counselling and peer support systems so that sex workers can be helped to accept their HIV status and take action to prevent infecting others. Some projects have established self-help groups for sex workers living with HIV and have provided training in home-care skills. Occupational alternatives to sex work for this group are especially important. Thus far, however, little evidence is available on this topic.

Sex workers who access care and ART must receive condom promotion and provision at each contact with the health system. Provision of family planning counselling and contraception, if desired, is especially important for averting the consequences of unintended pregnancy on the woman's health and for reducing the risk for MTCT of HIV.

2.3 Prevention of HIV among clients of sex workers

Male sexual behaviour, most importantly during paid sex, is a critical determinant of HIV transmission, even in advanced epidemics. Contact with a sex worker is a strong risk factor for HIV infection in men.[130] In countries such as Benin and Ghana, even decades after the HIV epidemic started there, most new infections among men in the general population are acquired from sex workers.[18,49,131]

Programmatically, whenever sex workers are targeted for prevention interventions, their male clients should also be targeted. This is primarily because the success of interventions among sex workers will be limited if their clients and client behaviours are not addressed. Male clients often also engage in unsafe behaviours with other partners such as wives or girlfriends and thus act as a bridge for the spread of HIV from higher-risk populations to lower-risk individuals in the general population. Clients of sex workers can be targeted through interventions in specific sex work settings (also called hotspots) or through local behavioural research that identifies the categories of men most likely to pay for sex in a particular setting.

Effective HIV prevention interventions among clients of sex workers should aim to both promote safer sexual practices and reduce the demand for commercial sex. The rationale for these aims is clear: client unwillingness to use condoms remains the predominant reason for unprotected sex; clients often offer to pay more for sex without condoms and may make demands for higher-risk sexual practices, such as anal sex. Addressing the negative attitudes that clients have towards condoms is critical.[132] In addition, sex workers are often victims of their clients' violence and abuse.

Though clients are predominately drawn from specific groups of men which can be mapped and defined in each setting, sex workers do encounter a broad range of population groups. Focused HIV prevention efforts are thus needed in high-risk sex work zones, and not only among specific groups of men. These zones are areas with an increased likelihood of risk behaviours and HIV transmission, for example, truck stops, border points, harbours, fishing areas and markets.

Providing specific services for truckers is especially important as they are often clients of sex workers, an important core group of males with STI and a source of dissemination of STI, including HIV, to rural areas.[133] Between one- and two thirds of transport workers report having had commercial sex in the past year and HIV prevalence among truck drivers ranges from 17% to 40%.[115,134] There are several important examples of HIV prevention projects among truckers. In Senegal, Kaolack, a major crossroad for Senegal and western African transport, a peer-mediated HIV intervention was implemented among truck drivers, their apprentices and baggage handlers. Over two years, the study found an increase in condom use among truckers, and fewer clients offered to pay more money for sex without a condom, compared with before the intervention (46.7% versus 82.2%).[115] Another study among truck company workers in Mombasa, Kenya showed that the provision of HIV testing, individual counselling, condom promotion and provision, and STI services, was associated with a reduced incidence of STI and a halving of reported contacts with sex workers.[135] A mobile team provided these services at on-site clinics in truck depots. The importance of such services is shown by the fact that almost one in five truckers was HIV infected, with more than half reporting that they had previously had sex with a sex worker.

In West Africa, the Prevention du SIDA sur les Axes Migratoires de l'Afrique de l'Ouest (PSAMAO) project trained truck drivers and seasonal migrant workers in STI, HIV and communication techniques. These men then held sessions with groups of their peers or on a one-to-one basis. An evaluation of project outcomes over the period 1997 to 2000 found that positive behavioural changes had occurred, with reported condom use among truckers in Burkino Faso increasing from 69% to 90% at last sex. Use of condoms with regular partners also rose from 49% to 67%. In another West African country, Benin, men were successfully recruited and trained to provide HIV education targeting male clients, and regular partners of sex workers in bars, hotels and streets.[136]

Overall, HIV prevention information and condoms are increasingly becoming available in the workplaces of these major client groups, or at rest and recreation areas (transport facilities, bars and night clubs, where these men contact sex workers). However, though condom use is common in groups such as truckers, it is by no means universal. Health facilities and sites for voluntary counselling and testing (VCT) may need to take special measures to optimize accessibility for these groups, who often cannot attend such services during normal opening times and may be averse to waiting in queues. This suggests a role for service provision outside normal business hours and for giving particular attention to the acceptability of these services for men. For migrant worker groups, their employees have a responsibility to improve living and health conditions of workers, and reduce their level of occupational vulnerability to HIV, often mediated through sex work.

In conclusion, the effectiveness of targeting populations that form major client groups has been demonstrated in several studies. There are, however, some logistical and methodological challenges in targeting clients. Novel ways have been found of overcoming some of these challenges, and special targeted services and outreach may be required.[137] Clients can be approached by health workers or peers on an ad hoc basis. More structured approaches, however, can complement basic outreach, including dissemination of IEC material; training sex workers to educate their clients about safer sex practices; and providing educational activities for common client groups.

2.4 Addressing the structural determinants of HIV risk

I ask God daily to give me the means in order to quit what I do.

(*A woman involved in sex work since 1978 in Senegal*)

Structural interventions can be defined as those activities that tackle the circumstances that are conducive to unsafe sex as well as foster those circumstances which maximize the likelihood of safe sex, or reduce the demand for sex work. These changes create the enabling conditions necessary for effective programming and facilitating larger-scale implementation of services. Interventions such as health education and encouraging sexual behavioural change are necessary but, by themselves, are insufficient responses to the needs of sex workers.

Economic and sociocultural factors underlying the vulnerability of sex workers to HIV have a powerful influence on their health and well-being. These include the low status of women, lack of educational or employment opportunities, and local attitudes to sex and sexuality, which create a demand for sex work, while simultaneously stigmatizing those involved in it. Exploitation and abuse of the human rights of sex workers are also common. Other factors have a more direct influence, such as laws and policies that criminalize sex work. The social and legal status of sex work can reduce the control sex workers have over their work conditions and present barriers to the uptake of health services and seeking of legal protection.

Public health and human rights are most often complementary, not conflicting, goals. In the case of sex work, however, public health goals and laws are too often at odds with each other. To date, in no setting has the criminalization of private sex acts between two consenting adults stopped or slowed the spread of HIV. In Africa, criminalization of sex work covers a spectrum of legal options, from illegal but more or less tolerated clandestine activity; to semi-legal (neither a criminal activity nor fully legalized, and not addressed by law); to legalized sex work. Sex work has been legal in Senegal since 1969. Interventions were in place to target this STI core group (sex workers and clients) before the HIV epidemic began and it was thus possible to continue and adapt such services to HIV prevention. For the most part, however, sex work in Africa is illegal though highly visible, particularly in urban areas and on major trucking routes. From a public health perspective, criminalization increases stigma and discrimination, with consequent marginalization of sex workers. This in turn constrains efforts to reach this group with health services. Criminalization also keeps sex work settings in a state of flux, hindering service provision and continuity. Estimating the size and service needs of this group is also made more difficult by criminalization.

Consequently, law reform to decriminalize sex work as a measure to protect sex workers from further exploitation and HIV is a recurring theme in the discourse surrounding HIV. While decriminalization takes place, sex workers require education about their rights and on how to deal with the police and ensure adequate police protection as opposed to harassment. Criminalization vests much power in law enforcement authorities. This power imbalance between police personnel and sex workers is generally described by the latter in terms of harassment, violence, abuse, repression and often fear.[14] Many sex workers say they have been coerced into sex with police officers. In some settings, a large proportion of sex workers report having been arrested at least once.[65] Sex workers are occasionally also arrested on charges of public harassment or loitering.

Addressing the structural conditions of sex work in sub-Saharan Africa, together with complementary health sector interventions, could make a marked public health contribution, as has occurred elsewhere.[138,139] Practical interventions at a local level do exist, for example, the NGO SWEAT (Sex Worker Education and Advocacy Task-team) in South Africa developed a code of conduct for formal sex work settings. This aimed to set appropriate standards for the industry, and outlined the appropriate conduct of intermediaries and clients.

Though changes in the structural environment of sex work are highly important, broader societywide changes are needed to fully address the vulnerability of sex workers and clients.[140] Income inequity, absolute poverty and gender inequalities contribute to entry to sex work, especially in sub-Saharan Africa. Sex work in these settings is, some argue, primarily a consequence of economic marginalization.[56] Moreover, with poverty hyperendemic in Africa, there is a large supply of new sex workers. In addition to placing themselves within a highly hazardous work environment, a large supply of new sex workers lowers the price of sex and consequently the negotiating powers of all sex workers. In the long run, there is a need for more concerted efforts to expand economic and social opportunities which would both reduce women's entry into sex work and provide real alternatives to sex work for those who want to leave it. Gender-transformative development is required, including income generation and microfinance programmes for women, which then provide sustainable incomes for women and their households.[141] Self-help groups that aim to generate alternative sources of income have been created among sex workers. The need for alternative employment opportunities is demonstrated clearly by studies which show that infection with HIV in these women is most often just a matter of time.[43,46]

Among sex workers, low levels of education are often associated with higher rates of HIV infection.[54] Scant access to lifelong learning limits their livelihood choices and organizational capability. Education for women in Africa is therefore critical for mitigating the vulnerability of sex workers, expanding their life choices, reducing risk and promoting resilience. This would also increase the capacity of sex workers to organize themselves.

3 Launching and managing an effective national response

Chapter 1 established the importance of sex work in HIV/STI transmission and Chapter 2 showed how interventions with sex workers have resulted in higher rates of condom use and lower rates of incidence and prevalence of HIV and other STIs. Unfortunately, many of these interventions have only been implemented on a partial scale – in one city or district, for example – limiting potential impact.

To stabilize and reverse HIV and STI epidemics on a national scale, effective interventions need to reach saturation levels of coverage – ideally greater than 80% in areas where sex work is important. Actual coverage in Africa and elsewhere remains far below such levels, however; estimates are that less than one in five sex workers globally have access to even basic prevention services.[142]

This chapter reviews global guidance and experience with scaling up sex work interventions to reach sufficient coverage to have a public health impact.[31] Experience from both within and outside Africa is synthesized to identify factors that lead to a more effective programme response. These are discussed below under the following sections, as well as in the next chapter.

1. Leadership: setting a national agenda for HIV and sex work, and promoting partnerships
2. Defining the problem and planning the response
3. Focus of execution: setting standards and supporting implementation
4. Promoting supportive environments
5. Monitoring progress (covered in Chapter 4)

3.1 Leadership: setting a national agenda for HIV and sex work, and promoting partnerships

National leadership has been cited as a critical factor in successful national responses to HIV. The national AIDS programme, together with other health and multisectoral partners, thus has a key role to play in promoting, guiding and supporting effective interventions with sex workers and their clients. Experience from India, Senegal and Thailand, for example, have shown that early and energetic efforts to slow transmission in commercial sex networks helped to stabilize or reverse HIV epidemics in those countries., [139112,143]

National plans to respond to the HIV epidemic frequently include some activities to address HIV in sex work. Yet, decision-makers are often reluctant to make strong public commitments on sex work, which is perceived as socially unpopular, politically unpalatable and more linked to crime than to public health.

In order to reverse this situation, an extended partnership between the national AIDS programme, civil society, international agencies and donors is needed. The *UNAIDS Guidance note on HIV and sex work*[31] proposes broad action based on three pillars:

Pillar 1: Assure universal access to comprehensive HIV prevention, treatment, care and support.

Pillar 2: Build a supportive environment, strengthen partnerships and expand choices.

Pillar 3: Reduce vulnerability and address structural issues.

Implementation of the interventions and services described below fits within this comprehensive framework. The health sector should build partnerships and advocate for this broad vision, concentrating on interventions and services within the health sector while involving and empowering sex workers, and linking with partners working in other sectors to reduce vulnerabilities and address structural factors that heighten risk.

3.2 Defining the problem and planning the response

Beyond leadership, several important functions are frequently carried out at the national programme level to promote, plan and support implementation of HIV programmes among sex workers. These include national mapping, target setting, resource mobilization, capacity building, coordination, and monitoring and evaluation.[31] While the main focus of the health sector response revolves around Pillar 1, there are frequently ample opportunities to promote the broader and important objectives of Pillars 2 and 3.

Several other programmatic issues related to the above functions have received attention in the literature.

Coverage and utilization: High coverage and utilization of services has been shown to be feasible in a range of settings. Thailand reported near-universal coverage of direct (brothel-based) sex workers with lower rates of coverage for other, less organized groups of sex workers.[143] India has reported coverage of over 80% of enumerated sex workers – mostly non-establishment-based – in several large states.[139] Utilization of special sex worker STI clinics also increased with time, though at lower rates than peer outreach contacts.

In Africa, several projects have reported variable rates of coverage in different settings. A project with 62 peer educators was able to reach about a third of sex workers in Mombasa, Kenya over five years. In a census of FSWs in Benin, 96% knew of the sex worker clinic in the area and 81% had attended the clinic at least once.[49] The importance of periodic mapping and population size estimation in setting accurate denominators for coverage has been demonstrated in many settings.[13,139,143]

Intensity: Beyond coverage and utilization, the intensity of services may be an important determinant of effectiveness. The challenge is to ensure that routine services implemented on a large scale produce results comparable with research or stand-alone projects, where resource levels are generally more concentrated.

Attention to operational details appears to be important for quality services and sustained participation by sex workers. In one study, women who attended more than thrice for STI screening were less likely to acquire HIV than those who attended fewer screening visits.[67] Similarly, regular clinic attendance was also associated with a reduced incidence of HIV in a study from Kinshasa, Congo, while sex workers in Mombasa, Kenya who had had four or more contacts with peer educators had fewer sex partners and higher condom use than those with less contact.[55,109]

A threshold level of intensity may indeed be required for population-level impact. Evidence from Africa and elsewhere suggests, however, that this is achievable in a wide range of settings, and can be monitored using standard process and outcome indicators based largely on routine reporting of service data.[144] Programmes in Senegal, Cote d'Ivoire, Kenya, South African mining communities and other sites have triangulated key process and outcome data showing increasing condom use and declining STI/HIV rates as coverage and/or utilization increase.[43,67,95,112,117] Elsewhere, national-level impact has been documented following side scale-up of interventions with sex workers.[143,145]

Adaptability: Experience has shown that, to be effective, interventions need to be adapted to local conditions.[146,147] For example, the outreach component of a programme where sex work is largely brothel-based will be very different from one designed for street-based sex work. Since successful sex work programmes have been implemented in a wide range of settings, there is a large and growing evidence base to guide adaptation.

Standard and feasible intervention models: Many programmes have started with a limited intervention package, generally built around outreach, condoms and STI services. This package could be replicated efficiently on a large scale, working over time towards a more comprehensive set of services.[118,139,148] Most commonly added services, provided on site or through referral, include provision of HIV counselling and testing, ART, family planning and other sexual and reproductive health (SRH) services. Most programmes find ways to build links over time to more general health and social services both for sex workers and their regular partners and children.[118,146] A growing number of sex worker interventions include DICs or similar safe spaces where sex workers can meet, rest and/or access services.

Interventions with clients and client-related services have also been strongly promoted as complementary to work with sex workers.[31] These range from peer outreach in red-light areas to workplace interventions for occupations that have been linked to sex work, such as transport, mining, agricultural estates and the uniformed services.[119,149] Such occupations have been singled out due to the high proportion of migrant and/or mobile men who travel and have cash to purchase sex.

Sustainability: How should programmes be organized to ensure sustainability? There has been some debate about organizational models focusing on whether interventions and services should:

- be integrated into existing clinics or implemented as stand-alone services
- be sited within the public sector or contracted to NGOs.

There are reports of successful experiences from taking different approaches to this question. While stand-alone targeted interventions may be more common than integrated services, countries such as Senegal, Thailand and Sri Lanka have built effective interventions around existing public sector STI services.[112,143,150] Even in these situations, however, partnerships with NGOs have been formed to intensify community outreach. In other settings, the complete package of outreach and clinical services has been contracted to NGOs.[151] There are insufficient evaluation data for these different approaches to be compared. Fragmentation and duplication of services has been identified as a problem when there are many NGOs funded by multiple donors, especially in countries where national coordination mechanisms are weak.[152]

3.3 Focus of execution: setting standards and supporting implementation

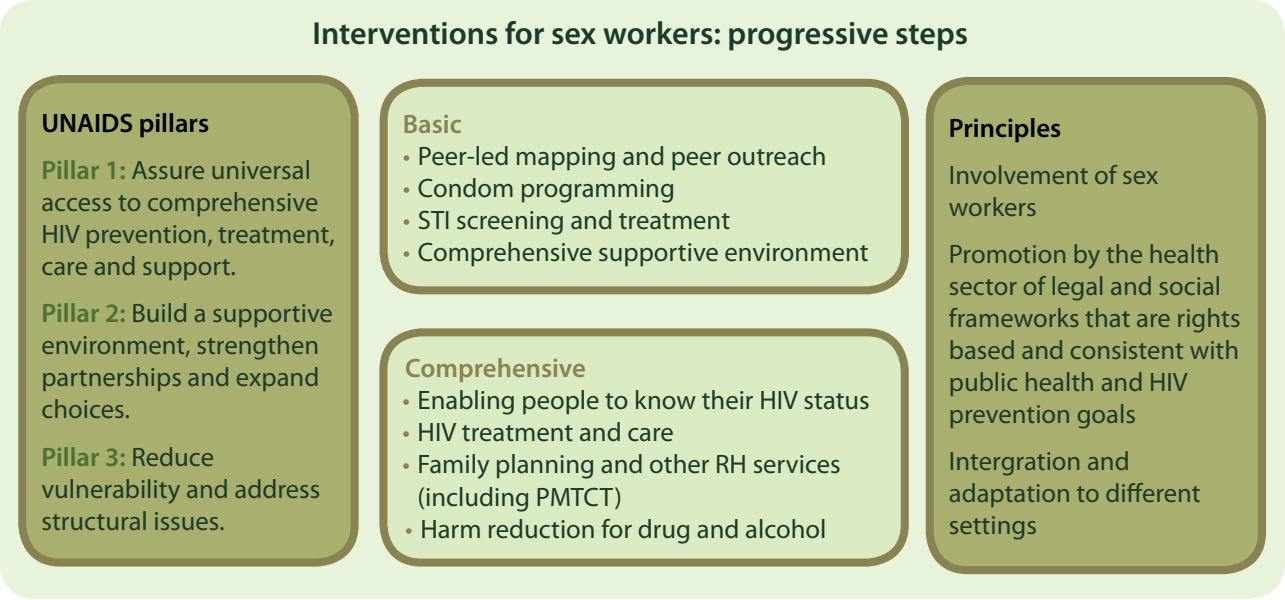
Experience shows that a number of programme activities, acted on at different levels, are important when starting or scaling up sex work interventions. Based on programme experience and the factors cited above, a general framework for implementing sex work interventions has been described.[103] These are summarized below with attention to different levels of implementation.

The WHO publication *Towards universal access: scaling up priority HIV/AIDS interventions in the health sector* summarizes the health sector interventions needed to target sex workers.[153] Based on these recommendations, a checklist of action for interventions with sex workers can help guide assessment, planning and action:

- Collection of strategic information on HIV and other STIs among sex workers and their clients
- Formative assessments to determine the needs and vulnerabilities of sex workers
- Involvement of sex workers in the design and delivery of programmes
- Promotion by the health sector of legal and social frameworks that are rights based and consistent with public health and HIV prevention goals
- Promotion of and support for condom use
- Detection and management of STIs
- Provision of behaviour change communication through peer outreach
- Provision of family planning, counselling and contraception
- Enabling people to know their HIV status
- Provision of HIV treatment and care
- Prevention of HIV in infants and young children
- Prevention and treatment of viral hepatitis
- Prevention of HIV transmission through injecting drug use.

These activities are typically delivered within health facilities, community-based settings and through peer outreach. Experience has shown that such services can be progressively scaled up and intensified, beginning with basic service packages that establish peer outreach and clinical services.

Figure 8: Interventions for sex workers: progressive steps



Different activities are appropriate for different levels. While direct interventions and service provision (most of the services above) take place at the local level where sex work takes place, other activities of coordination and support need to take place at the national and subnational levels (municipal, district, province, etc.). A brief review of operational experience with implementation helps to summarize the important steps common to many programmes. Many successful programmes have found ways to streamline implementation by doing several activities simultaneously. For example, early assessments can be combined with initial community work by identifying sex workers and other collaborators who may form the nucleus of a peer intervention. Such approaches are efficient and minimize delays. (There are unfortunate examples of interventions being delayed for years as donors awaited results from the situation analysis.)

The national programme, as discussed previously, has an important role in promoting, planning and supporting implementation of HIV programmes for sex workers. Common activities include national mapping, target setting, resource mobilization, capacity building, coordination, and monitoring and evaluation. The initial steps may be carried out by organizing a national consensus meeting to map needs and set priorities. Based on decisions made with key implementing partners at this meeting, the national programme can then proceed to organize support for implementation and begin monitoring progress towards implementation.

It is often helpful to commission a situation assessment to summarize issues for the national meeting. Based on the published and "grey" literature, including government and NGO reports, this should provide an overview of the epidemic, its context and the health system, including a review of national HIV/AIDS plans, proposals to the Global Fund and other donors, plans and projects of bilateral and multilateral partners, and information related to financial support for their implementation.

An additional step (performed simultaneously so as not to delay implementation) can be taken for a more structured review of the response to HIV and sex work. This can be done by a small team either as a separate exercise or as one component of a comprehensive programme review. By interviewing key informants, conducting group discussions and interviewing authorities, managers and implementers, and doing site visits, it is possible to corroborate the findings of the desk reviews and assess the level of political commitment.

The main managerial role at the subnational level mirrors that at the national level, with a focus on coordination and implementation support. District (or other intermediate-level) teams take national guidelines and targets, and apply them in their catchment areas. Key implementation steps at this level include mapping of sex work hotspots and existing interventions in the district, planning and coordination meetings with partners, capacity building and routine monitoring. Typically, the District Medical Officer or District AIDS Committee calls together actual and potential implementing partners to plan and coordinate the district response. A mapping and gap analysis at district level is conducted to identify locations of sex work and existing interventions. Planning for implementation with district implementing partners is based on the gap analysis and leverages national capacity-building support and related resources.

At the local level, a strong outreach component must link community-based prevention efforts to clinical services. Local mapping should be undertaken with sex workers in a manner that engages the sex worker community. Key informants and gatekeepers can provide information about sex work settings and facilitate implementation. Sex workers trained as peer educators and with the back-up support of outreach workers are well placed to implement interventions in the community. Peer involvement and community engagement form a foundation for the work on enabling environments.

Achieving high rates of condom use in sex work is the primary prevention objective. Other interventions work synergistically to reduce risk when condom use is interrupted or condoms fail. The basic clinical services for sex workers should thus be well integrated with outreach and condom programmes. Models, guidelines and standards for sex worker clinical services exist and can be adapted to different settings. STI services must be designed to address asymptomatic infections, which are common in sex workers. More comprehensive clinical services should include the offer of HIV testing and counselling, ART, family planning and other SRH services, and linkages to other needed health and social services.

Supportive supervision using standardized instruments should be conducted regularly at the district and local levels. At the national level, networks among countries and institutions should be developed. These networks will share information, ensure regular technical cooperation among countries and be involved in programme reviews when needed and requested by members.

4 Strategic information

In the plenary dedicated to sex work during the XVII International AIDS conference held in August 2008 in Mexico, sex workers and activists Reynaga and Crago pointed out that prevalence gives "not the most precise of images but is the best information we have on HIV among female sex workers". They asserted that "what is clear is the important relationship between sex workers' human rights, poverty and HIV prevalence". Among their achievements, they listed legislation change, participation in regional and global meetings, influencing UNAIDS, and their success in reducing HIV prevalence rates among sex workers.[154]

4.1 Surveillance

Updates on HIV/AIDS epidemiological surveillance of the WHO African Region were published in 2002,[155] 2005[156] and 2007[157] and, in every issue, the lack of availability of HIV data among sex workers was commented on. Only 19 of 47 countries conduct periodic surveys of sex workers.[11] Surveillance among sex workers is carried out infrequently in countries with generalized epidemics. In countries with low-level epidemics, where the measure of HIV prevalence in sex workers is the cornerstone of HIV surveillance, only a few countries had systems in place. Recent data are limited, not uniform, difficult to compare and mostly from urban areas. Some systems are part of the regular surveillance (Angola) while most are the results of special studies and research projects. Data from the 2008 WHO report entitled *Towards universal access: scaling up priority HIV/AIDS interventions in the health sector* suggest that 19 countries have some kind of system.[11] Senegal has a regular established system of surveillance among sex workers. Surveillance for HIV among sex workers conducted in Cotonou (2002) and in Accra (2004) reinforced the belief that paid sex is an important factor in HIV dissemination in countries with a low HIV prevalence. The 2005 AFRO HIV/AIDS Epidemiological Surveillance Update highlighted the fact that sex workers "may be playing an important role in countries with high HIV prevalence rates".[156] This question needs to be explored by surveillance, special studies and modelling. It has major programmatic implications in generalized epidemics.

Bastos et al. draw attention to the fact that deficient surveillance systems make it very difficult to assess the situation and trends in the epidemic, as well as the response to HIV, "while methodological limitations and absence of regular, up-to-date assessments compromise the ability to generalize findings".[158]

The gaps in knowledge regarding the type of sex workers, size of this population, mapping of location and mode of sex work, and prevalence of HIV in sex workers obstruct effective interventions. The availability of data is a necessary pre-condition for effectively planning necessary interventions and resource mobilization.[159]

The involvement of NGOs and vulnerable populations such as sex workers and MSM in planning, generating and analysing data, in partnership with public health departments and academia, has been recommended.[160]

Measuring the HIV epidemic and response to it in vulnerable populations require biological and epidemiological data to assess the burden of and trends in the HIV epidemic, social and anthropological data to understand the sociocultural context, and programme data to plan and monitor progress.

National programmes should develop their response to the HIV epidemic among sex workers and their sex partners based on specific evidence of risks and programme effectiveness. Effective data collection, management, analysis and dissemination systems should be in place to support programme decisions and identify gaps to inform research priorities. The basics of such a system include targeted surveillance of sex workers and their partners, monitoring and evaluation of prevention programmes, and information management.

Though periodic monitoring of HIV prevalence occurs among the general population through antenatal and household surveys, such monitoring modalities are not suitable for surveying high-risk groups, which are not readily identifiable in these surveys. Two basic strategies are recommended for monitoring HIV prevalence among FSWs. One is community sampling of sex workers and their clients using either time–location sampling, if sex work is largely visible, or respondent-driven sampling. The second is the use of sentinel sites, such as STI clinics frequented by sex workers, for monitoring HIV prevalence among FSWs and client groups, analogous to anonymous antenatal care monitoring. The latter is logistically simpler but suffers from numerous biases. In spite of biases, STI clinic surveys give the advantage of access to STI prevalence among sex workers. Repeated community-based surveys of nominally representative samples at regular intervals provide trends in HIV prevalence and variables such as the age of sex workers over time. One such report from Benin, for example, found that a worrying reduction in the age of FSWs had occurred with time.[49] These findings can be used to address issues that lead women/girls to engage in prostitution, and to prompt investigation and advocating for resources for further action.

Tracking sex workers and client populations over time to measure progress in HIV prevention programmes can be difficult due to the mobility and hard-to-reach nature of these populations. Thus, particular attention is needed to ensure the validity of sampling methods, and that information about the nature of the sample is reported in adequate detail to facilitate interpretation and analysis over time. Due to difficulties in accessing most-at-risk populations, biases in serosurveillance data are likely to be far more significant than those in data from the general population, such as women attending antenatal clinics. If there are concerns about the data, these concerns should be reflected in the interpretation. An understanding of how the sampled population(s) relates to any larger population(s) sharing similar risk behaviours is critical to the interpretation of survey results.

Surveys of clients of sex workers have been conducted in a few settings, employing a variety of methods. Clients of sex workers are typically more difficult to access for surveys in most settings and data analysis can be complicated, depending on the methods used. In West Africa, clients were interviewed while exiting brothels. In Thailand, FSWs surveyed using respondent-driven sampling were asked to refer their sex partners for a related survey. This pilot yielded a survey of >200 male sex partners of sex workers with little additional cost to the original survey.

4.2 Monitoring and evaluation

Monitoring and evaluation (M&E) provides information on what an intervention is doing, how well it is performing and whether it is achieving its aims and objectives; guidance on future intervention activities; and is an important part of accountability to funding agencies and stakeholders [163]. Monitoring is the regular collection of information about all project activities. It shows whether things are going according to plan and helps project managers to identify and solve problems quickly. It keeps track of project inputs and outputs such as activities; reporting and documentation; finances and budgets; supplies and equipment. Monitoring is an ongoing activity that should be incorporated into everyday project work.

Evaluation asks whether a project is achieving what it set out to do, and whether it is making a difference. If this is happening, the evaluation seeks to understand how and why the intervention has worked so well. If the project is unsuccessful, questions are raised as to what could have been done better or differently. Evaluation thus keeps track of key outcomes and impacts related to the different project components, and assesses whether the objectives, aims and goals are being achieved.

Evaluations take place at specific times during interventions. It is common to start with baseline research near the beginning of an intervention so as to obtain information with which subsequent changes can be compared. Further evaluations are usually made at intervals of between two and three years.

The foundation for understanding programmatic response is a strong M&E system. Service providers should be trained to use locally available systems and data collection tools so that their activities can be efficiently reported up to local, regional and national HIV control authorities. Services for sex workers and clients require vigorous M&E, including for potential harms of services. Many projects make use of monthly outreach reports, which state where staff conducted outreach, the number of sex workers contacted, the number of condoms distributed, and the content of their discussions with sex workers. Peer educators also document their work regularly, including the number of contacts, and condoms and information materials distributed and required. It is also important to involve sex worker associations and civil society representatives of sex workers in M&E as this helps to assess the degree to which services are meeting the actual needs of sex workers and their clients.

Standardizing indicators and measures of behaviour (such as condom use, partner type and patterns of alcohol use) across studies and in surveillance of sex worker programmes is critical. Commonly used indicators are shown in Table 3.[161] These aim to cover monitoring of programme inputs, process evaluation, and the M&E of programme outcomes and impact.[162]

The following indicators related to sex workers have been used to measure progress towards universal access to HIV/AIDS prevention and care:

Testing and counselling

- Percentage of most-at-risk populations who received an HIV test in the past 12 months and who know their results

Prevention of sexual transmission of HIV and prevention of transmission through injecting drug use

- Percentage of sex workers reached with HIV prevention programmes in the past 12 months
- Percentage of female and male sex workers reporting the use of a condom with their most recent client
- Percentage of sex workers who are HIV infected
- Percentage of sex workers who inject drugs

Sexually transmitted infections

- Number of targeted service delivery points for sex workers where STI services are provided per 1000 sex workers
- Prevalence of syphilis among sex workers

4.3 Target-setting

Target-setting must be linked to M&E. Without well defined targets it is impossible to define success of interventions. Targets should cover all indicators and measure the final and interim achievements. Interim targets are necessary to support managers to measure the progress of a programme and are used to modify activities.

As in all aspects mentioned in this document the involvement of local stakeholders, sex workers and implementers is of utmost importance. Their involvement will ensure realistic targets adapted to local reality.

Three key aspects of target-setting are mentioned in the *WHO/SEARO/WPRO Toolkit for Monitoring and Evaluation of interventions for sex workers*[162]:

- The most important target for TI programmes is the coverage of the programme. This can either be defined by outreach or active involvement of EEs in TI programmes.
- Setting a coverage target should be partly based on the proportion of FSWs who must be reached in order to make a substantial impact on the HIV epidemic. Saturated coverage is often described as reaching 80% of the total FSWs in the catchment area.
- Coverage targets must also be adjusted at the local level to take into consideration available resources, programme experience and the size of the total FSW population.

Table 3. Indicators for effective monitoring and evaluation of interventions for female sex workers[1613]

Indicator for individual sites	Indicator when looking across sites*	Useful break-down by †	Frequency	Data source	Indicator included in other guidelines	Notes for use
1a. % of FSWs contacted through outreach §	% of sites that cover >80% of estimated FSWs	Typology Time in sex work	Quarterly	Outreach register	UNGASS	Contact must be defined by national guidelines
1b. % of EEs with active involvement in TIs #	% of sites that cover >80% of EEs		Annually	EE register		
2. # of condoms distributed	% of sites meeting >50% of estimated condom need		Quarterly	Various		
3. % of FSWs who came for STI screening in the past 6 months	% of sites where >75% of FSWs come for regular screening	Typology Time in sex work	Every 6 months	Clinical records		Frequency of screening should reflect national guidelines
4. % of TI sites that offer on-site or referral linkages to care, support and treatment	% of TI sites that offer on-site or referral linkages to care, support and treatment		Annual	Site register		
5. % of FSWs who received an HIV test in the past 12 months and who know their results	% of sites where >80% of FSWs covered with HIV testing	Typology Time in sex work	Every 2 years	FSW surveys	UNGASS, UA	
6. % of FSWs who correctly identify ways of preventing the sexual transmission of HIV and who reject major misconceptions about HIV transmission	% of sites where >80% of respondents have correct knowledge of HIV		Every 2 years	FSW survey	UNGASS	

Indicator for individual sites	Indicator when looking across sites*	Useful break-down by †	Frequency	Data source	Indicator included in other guidelines	Notes for use
7. % of FSWs reporting the use of a condom with the most recent client	% of sites with >70% FSWs reporting condom use at last sex	Typology Time in sex work	Every 2 years	FSW survey	UNGASS, MDG	Additional condom use measures should be collected to help assess social desirability bias
8. % of FSWs who feel able to refuse a client if a condom is not used	% of sites where >75% of respondents can refuse a client	Typology Time in sex work	Every 2 years	FSW survey		
9a. Number of STI cases among FSWs	% of sites with STI prevalence among FSWs >20%	Typology First time to clinic	Quarterly	Clinical records		The relevant STI may vary by area. This indicator identifies poorly performing sites
9b. Number of new STI cases among males reported at STI clinics	% of sites showing declines in numbers of STI cases among males		Quarterly	Clinical records		Indicator should be measured at sentinel STI clinics in relevant areas
10. HIV prevalence among FSWs	% of sites with HIV prevalence among FSWs >5%	Typology Time in sex work	Every 2 years	FSW survey	UNGASS, UA	This indicator identifies poorly performing sites

UA universal access; UNGASS United Nations General Assembly Special Session; MDG Millennium Development Goals

* The numeric thresholds specified in the indicators in this column should be adjusted to reflect the national guidelines and end-line targets for FSW interventions in your country.

† The numeric thresholds specified in the indicators in this column should be adjusted to reflect the national guidelines and end-line targets for FSW interventions in your country.

§ The numeric thresholds specified in the indicators in this column should be adjusted to reflect the national guidelines and end-line targets for FSW interventions in your country.

This indicator measures coverage that is relevant for interventions working with EE-based FSWs or those at fixed sex venues (e.g. hotels and lodges).

Management information system (MIS)

A national system for reporting data from service provision programmes to regional and national authorities, and for providing feedback and national and regional data to service providers should be established and maintained. The UNAIDS' Country Response Information System (CRIS) is one effort to create a system that permits data flow in two directions.

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