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Sex workers and the control of sexually transmitted disease

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Objectives: To describe and assess measures to control sexually transmitted diseases (STDs) among sex workers and their partners.

Methods: A review of medical, historical and social literature, focusing on selected cases.

Results: Measures to control disease in sex workers today are often prompted by concerns about HIV transmission. However, the literature shows that prostitution varies from one place and time to another, together with the risk of sexually transmitted disease. A broad social definition of prostitution rather than a narrow reference to levels of sexual activity is important for effective disease control, as an understanding of the relation between social disadvantage and sexual activity enables the provision of occupational services that sex workers actually want and use. Social prejudice and legal sanctions cause some sex workers and their partners to avoid even the most appropriate and accessible specialist services. Therefore targeted programmes can only complement, and not replace, general measures to control STDs, which are developed for other social groups or the local population as a whole.

Conclusions: Sex workers and sex work differ from one place to another and so a single model for STD control is inappropriate. None the less, occupational health risks suggest a general need for specialist services. Where these do not compound the disadvantages that sex workers already suffer, medical services are likely to offer significant benefits in prevention, early diagnosis, and treatment of STDs. As the stigma of prostitution leads many people to remain invisible to services, a general health infrastructure and anti-discriminatory measures will be equally important to effective disease control.

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Introduction

In medicine, prostitutes or sex workers are generally defined in terms of their high levels of sexual activity: sexual services are exchanged for money or items of monetary value, such as drugs. While reliable figures are hard to obtain, it is clear that the majority of sex workers are poor, urban women. In Europe, it has been reported that nine in 10 sex workers in Belgium and 39 of every 40 in the Netherlands are women.¹

Sex workers are often the focus of sexually transmitted disease (STD) control measures because they are traditionally seen as a source of disease. A relatively high rate of partner change suggests that sex workers will be more vulnerable to infection and, if infected, they may be more likely to transmit disease than individuals with fewer partners. In some parts of the world, sex workers have very high levels of STD. Epidemiological research has focused on transmission from prostitutes to their partners and a notional general population. Models with respect to the population as a whole have been formulated for gonococcal transmission in particular.² It is suggested that a small number of people having high numbers of sexual partners could be seen as a core group, who will play a disproportionate role in transmission. The degree to which those with a high rate of partner change, such as prostitutes, mix with those with a relatively low rate of partner change will have an important impact on the pattern of spread. Concepts of

core groups are important to the design of disease control strategies today.

However, views of prostitutes are also informed by conventional prejudice and state policies. Historians have suggested that stereotypes guided 19th century state policies and public health programmes which, in fact, created modern prostitution.³ In Britain, for example, the Contagious Diseases Acts of the last century introduced screening for prostitutes in garrison towns and detention for those who were thought to be infected, in order to reduce venereal diseases in their customers, notably, members of the armed forces. Historical records show that prostitutes subsequently began to work full time for a longer period and away from their local communities.^{3,4} As they were singled out for specific forms of social control, so they became a more distinct section of the population. They saw more clients and were thus placed potentially at a higher risk of infection than when prostitution was a more widespread and transient activity for poor women. These policies, therefore, must have contributed to the situation that they were intended to resolve; increasing sex workers' vulnerability to sexually transmitted disease and their ability to transmit infection.

This example suggests that social exclusion determines risks of infection as much as multi-partner sexual activity. Lack of civil and workers' rights deny sex workers minimum standards of occupational health and safety,

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including the ability to enforce risk reduction measures. Poverty too is a defining feature of prostitution. Growing inequalities of wealth within and between countries, rapid urbanisation, and economic restructuring have shaped the contemporary sex industry. The traditionally disadvantaged have been disproportionately recruited into prostitution. Other poor people, who do not work as prostitutes, also rely increasingly upon financial help from a number of sexual partners.^{5,6} In the context of pervasive sex inequalities, prostitution cannot always be distinguished easily from marriage and/or other female careers; sex workers are also disadvantaged on the grounds of sexual identity, social class, age, and race.⁷

Sexually transmitted disease control

The basic reproductive rate of a sexually transmitted disease—that is, the number of infections generated on average by an infected person, depends on a number of factors: the rate of sexual partner change, the probability of transmission per partnership, and the duration of infectiousness.

Currently, control programmes are based on two central strategies, elaborated particularly to reduce levels of HIV infection. The first consists of a range of risk reduction measures involving behaviour change. These include a reduction in the number, and change in type, of sexual partners, and the use of barriers to reduce the probability of transmission. The second consists of improved diagnosis and treatment for classic STDs, which facilitate HIV transmission. Epidemiological studies indicate that the risk of acquiring HIV in the presence of ulcerative or non-ulcerative sexually transmitted diseases is increased by a factor of 2 to 6.^{8,9} HIV infection also has an impact on the clinical spectrum and management of other infections.

Political approaches to prostitution have an impact on, and are frequently inseparable from, STD control programmes. In the past, female prostitutes were commonly subject to compulsory registration, for the purposes of screening and treatment. A number of states continue to make compulsory health checks a work requirement, and many sex workers find that they are working illegally without access to health care. Over the last century, this form of regulation has been replaced largely by abolitionism; prostitution is criminalised in a variety of ways, with the aim of eradicating what is variously regarded as a form of slavery or immorality. This leads to a formal separation between the criminal justice system, which punishes sex workers, and health and social services, which seek to minimise harm and provide appropriate care. However, many assume that health services are part of the criminal justice system and they fear that they will be reported to the police, as in Sweden, for example, if HIV infected sex workers practice unsafe sex.¹ Sometimes, a formal separation between state agencies works to the advantage of the sex worker. Pressures for harm minimisation have led to less stringent

criminal procedures—for example, condoms are no longer used as evidence of prostitution in some countries.¹ The general criminalisation of prostitution together with widespread prejudice create acute difficulties for disease prevention and treatment as many sex workers will remain invisible and inaccessible to these programmes.

These differing political approaches to prostitution combined with data on the prevalence of infections among sex workers influence control strategies. A brief review shows that, firstly, levels of infection associated with prostitution vary and, secondly, they are difficult to interpret.

Background: Sexually transmitted disease in sex workers

The reported risk of STDs among people working in the sex industry varies in relation to geographical location and prostitution sector.¹⁰ This variation also results from the problems of interpreting results from biased samples. Estimates of incidence and prevalence are difficult to establish since criminal and other sanctions make it impossible to enumerate the relevant population. Most studies report figures from captive groups, either the more accessible sex workers—for example, those who work visibly in poor neighbourhoods, or those in contact with state institutions such as police, prisons, and health services. These problems make it difficult to generalise or compare results. None the less, it is clear that STD rates in sex workers are often higher than in other groups. Three general examples are illustrative.

SUB-SAHARAN AFRICA

In urban populations of sub-Saharan Africa, the classic STDs—syphilis, gonorrhoea, and chancroid—account for approximately 7% of overall disease burden, ranking them below measles, malaria, and gastroenteritis but above severe malnutrition and tuberculosis.¹¹ These diseases are associated with microbial resistance, infertility, and maternal mortality subsequent to ectopic pregnancies caused by pelvic inflammatory disease.

Sex workers are at considerable risk in this situation. More than 75% of female prostitutes in Kenya had STDs¹²; and in Kinshasa, Zaire, 75% of 1233 female prostitutes presented with at least one sexually transmitted disease.¹³

During the past decade, research into HIV infection has been a priority. In the mid-1980s, high levels of HIV-1 infection were found among sex workers in some sub-Saharan African cities.¹³⁻¹⁵ A high incidence of HIV infection was demonstrated among sex workers in Nairobi by testing sera that had been stored in the course of other studies: in 1981, the prevalence of HIV-1 was 4%; by 1985, it had risen to 61%.¹⁶ Similar dramatic rises in HIV prevalence have been reported for other groups of urban prostitutes in Africa, where the virus is transmitted primarily through heterosexual contact.¹⁷⁻¹⁹

ASIA

A marked and rapid increase in the prevalence of HIV infection among sex workers in parts of Asia such as India²⁰ and Thailand²¹ occurred later. Extensive HIV-1 transmission began in Thailand in 1988 and, following an initial epidemic among Bangkok injecting drug users, came to be associated primarily with heterosexual transmission. The relation between the two epidemics is unclear as the virus subtypes differed among injecting drug users and prostitutes.²² Long term state policies to increase foreign earnings through tourism (including a sex industry)^{23 24} may help account for the rapid increase in prevalence among sex workers and their contacts, especially in the north. As in some African cities, sex workers have been seen as a core group, to whom interventions are targeted.

Sentinel surveillance shows a recent decrease in the rates of classic STDs in Thailand. The prevalence of HIV may be decreasing among some Thais, such as military conscripts,²⁵ but continues to increase among sex workers: rising from 1.4% to 20.1% in a 4 year period among male sex workers in the north of Thailand²⁶ and continuing to rise steeply among female sex workers in the same part of the country.²⁷ A prevalence of 65% has been reported for some commercial sex work groups in Chiang Mai.²⁸

EUROPE, AUSTRALIA, AND NORTH AMERICA

In much of the developed world, HIV transmission continues to be primarily associated with injecting drug use and sex between men, although heterosexual transmission has increased. Among sex workers who do not inject drugs, other factors have been associated with HIV infection, including a past history of STDs, and the use of crack cocaine (non-injected) in parts of the USA. Crack use has been associated with an increased incidence of syphilis, gonorrhoea, and other sexually transmitted infections in North American cities, especially among the young.²⁹

Low rates of HIV continue to be reported among many groups of non-injecting drug users. A European study from 11 centres reported an HIV prevalence of 1.5% in female sex workers who did not inject drugs compared with 31.8% of injecting drug users.³⁰ Low rates of HIV and other STDs have been reported among sex workers working in Australian brothels, where condoms are widely used.³¹

Rates of STDs among male, transvestite and transsexual sex workers tend to be higher than among female sex workers.³² In London; 27% of 57 male sex workers compared with less than 1% of 228 female sex workers were found to be infected with HIV.^{33 34} This may reflect the more stigmatised and hidden nature of male sex workers as well as the prevalence of infection in clients. Condoms may be used less.³⁵⁻³⁷

The morbidity from STDs for many sex workers can remain high in these lower prevalence areas over the course of a working life.^{33 38} In London, 14% of female sex workers

presented with an acute STD and 44% reported past infection with gonorrhoea.³³

The politics of prostitution, the prevalence of infection, and STD control

It can be seen that levels of infection among sex workers vary greatly, relating crudely to differences of wealth within countries, and between north and south. They relate to local population prevalences and dominant modes of transmission, and to local characteristics of the sex industry. Sex workers are themselves internally stratified by STD—for example, according to socioeconomic status,³⁹ injecting drug use, the use of non-injected drugs, and levels of condom use. Less is known about the risks posed by partners, although the few studies published suggest that distinct client behaviours may be relevant.^{40 41} In a British survey of sexual lifestyles, 6.8% of men reported having ever paid a woman for sex. Such men were more likely to be unmarried, to work away from home, and to have had sexual contact with a man at some time in their lives.⁴² In a London study of clients, over a third of men reported past sex with men as well as women.³⁹

Currently, explosive epidemics of HIV among sex workers in some countries, together with epidemics of poverty and drug use in the West, have led to a renewed interest in concepts of core groups, reservoirs, and pools of infection,^{43 44} which suggest that targeted programmes for sex workers will be crucial. These differ from programmes in the pre-AIDS era, when sex workers in many countries were seen to be less central to the transmission of infection and general programmes addressed “professionals” and “amateurs” alike (the term amateur is used to describe apparently promiscuous women who were not paid for sex).

Political approaches to prostitution together with concerns about HIV transmission and/or high levels of other sexually transmitted infections have led to three strategies for control. The first works through laws that mandate screening, within the regulated sector. The second attempts to promote access to sex workers through providing services that are wanted. The third builds upon prostitutes' position in the sex industry to reach a wider population including clients, managers, and others outside the sex industry, who may be at risk. These three approaches are not necessarily counterposed, and programmes frequently combine elements of regulation with improved accessibility and the mobilisation of sex workers themselves. Regulation tends to highlight the disproportionate role that sex workers may play in the transmission of disease. Improved accessibility tends to emphasise also the vulnerability of sex workers to infection. The mobilisation of workers recognises equally that prostitutes are well placed to act as health workers.

PROGRAMMES FOR REGISTERED PROSTITUTES

Mandatory screening and treatment provide access to the regulated sector of the sex indus-

try in countries such as Greece, parts of Germany, and the USA. Compulsory HIV screening and the detention of those found to be infected have been introduced in many states, including parts of India, the USA, and Sweden. There is no evidence that such strategies have prevented transmission; the regulated sector tends to be a minor part of the industry precisely because prostitutes avoid the control associated with registration. Indeed, it has been argued that repression exacerbates the problem since sex workers are further marginalised from health services in the attempt to evade state restrictions on their work.

There has been much political debate about this approach, which is regarded by many on the right as tolerating, and thereby legitimising, prostitution. In contrast, sex workers and human rights activists recognise this regulation as an unacceptable form of social control based on unsubstantiated arguments about the promotion of "public health". In addition, effective prevention, which is particularly important for viral diseases, is thought to require a relationship of trust between health-care workers and prostitutes. This is not compatible with legal repression. A general discomfort with measures intended to control disease through controlling categories of people, together with suggestions that oppressive legal and public health codes are ineffectual, has promoted the development of services that sex workers want.

PROVIDING ACCESSIBLE AND APPROPRIATE SERVICES FOR SEX WORKERS

Many services combine health education with the provision of materials such as free condoms and, in some countries, equipment for safer injecting as well as clinical and other services. These have been taken into communities so as to establish contacts with the "hard to reach" or "out of reach". Thus, the specialist clinics for sex workers which have been established^{1 45 46} often employ outreach models so that services are taken to the areas in which prostitutes work, and open at suitable hours. Attempts to maximise service coverage and facilitate risk reduction necessarily involve the provision of services that sex workers want, either integrated with wider sexually transmitted disease services, or provided specifically for them. In addition, attempts to encourage attendance imply non-judgmental attitudes towards sex workers.

Reports suggest that disease is rarely the first priority of sex workers and so services of this kind have adopted an increasingly holistic approach in which STD control is part of a broader health and economic programme. In consequence, these services may reach a greater proportion of sex workers than those within a regulated sector. Even so, they are likely to reach only a small proportion of sex workers.

Many poor women and some men combine prostitution with other trades and move in and out of the industry over a period of years. Many are also geographically mobile and few

work in a legal or formal economic sector. In these circumstances, targeted programmes cannot reach the majority of workers. Moreover, sex workers frequently suffer high morbidity before they come into contact with specialist clinical services.³³ These problems have led to a range of innovative interventions over the past decade akin to "pyramid selling", where prostitutes and, sometimes, others in the sex industry work as peers and educators.

EMPLOYING SEX WORKERS IN HEALTH PROMOTION AND CHANGING THE SEX INDUSTRY

Interventions have addressed conditions in the sex industry. Programmes have been developed for managers, customers, and state officials who may be able to introduce health and safety measures or to encourage the use of condoms, as they occupy a stronger position in the industry.⁴⁷ In Sydney, the Australian Prostitutes' Collective developed a "safe house scheme" where symbols were awarded to parlours in which all clients were required to use condoms and in which working conditions were adequate. The Collective also encouraged the distribution of introductory letters to clients of escort services which explained that condoms were required for all sexual contact. Prior notification by the management means that responsibility for negotiating safer sex does not lie solely with each individual prostitute.⁴⁸ In Amsterdam, a group of clients was set up to discuss safer sex and to hand out condoms to other clients in the red light district.⁴⁹ Initiatives have lobbied for decriminalisation so as to decrease the stigma affecting individuals who choose to sell (or buy) sexual services and to establish basic rights at work, including occupational health and safety.^{50 51} As noted above, law enforcement agencies have been lobbied successfully to stop using condoms in court as evidence of prostitution. Other programmes have focused upon economic rather than legal inequalities and introduced alternative ways of making a living both to sex workers and to other individuals who are financially reliant upon several partners. Elsewhere, collectives have managed to raise fees for services, thus reducing the numbers of clients a prostitute needs to see.⁵²

With the partial emancipation of some sex workers as well as a growing interest in community programmes, some sex workers have been recognised as professional educators and hired in STD prevention for a range of "at risk" categories.

Content of the programmes—prevention, diagnosis, and treatment

Sexually transmitted disease control measures for prostitutes are standard in many respects, comprising behavioural risk reduction on the one hand and early clinical diagnosis and treatment on the other. In recent years, alternative protective devices for women such as microbicides and the "female condom" have been distributed in an attempt to introduce technologies that can be controlled by women.

The use of nonoxynol-9 is contested; evidence that it increased the risk of HIV acquisition by causing disruption of the genital epithelium has been reported⁵³ but it appears that this may be dose related.⁵⁴ A wide range of alternative products are being explored, primarily in the context of vaginal intercourse, including those that are already licensed.⁵⁵ Previous research on contraceptive use should inform the development of appropriate forms of delivery, in situations where a range of methods may already be used for protection and/or contraception.^{56 57}

Risk reduction messages have distributed information on the assumption that appropriate knowledge about STD prevention will lead to safer behaviours. This approach appears to apply relatively well to many sexual contacts in the AIDS and pre-AIDS era because of a professional interest in occupational health and safety, including condom use.^{58 59} None the less, prostitutes are often relatively powerless to insist on safer sex; they may be unable to negotiate terms and to insist upon condom use; women may also be unwilling to prevent pregnancy. Few sex workers will be in a position to respond to risk reduction messages advocating fewer partners.

These factors entail specific approaches in clinical and other services. Regular screening of women working in prostitution may be important because much infection is asymptomatic and because infected partners will not always notify prostitutes of the need for screening. At the same time, partner notification is likely to be of limited use once a prostitute is found to have an infection, since he/she is unable to notify many partners.⁶⁰ Risks of violence from potentially infected partners are also a concern.⁶¹ Since the sex industry is characterised by relations of inequality, sex workers may be particularly unwilling and unable to inform known partners for fear of violence or dismissal.

It has also been shown that the numbers of sexual partners may be less relevant to the transmission of infection than the type of relationship.^{33 62} In a London cohort study, gonococcal infection was not associated with overall numbers of partners but with the number of non-paying partners during the past month.³³ Reports also suggest that condoms are used less extensively with regular clients⁶³ and by those who do not identify as professional sex workers.⁶ Sex workers may be able to insist upon condom use in relationships while finding it particularly difficult to use condoms in their private lives, not just because of problems comparable with other study groups⁶⁴ but also because condom use is equated with sex.⁶⁵

These studies confirm that knowledge and attitudes bear, at most, an indirect relation to behaviour change. In consequence, traditional risk reduction programmes, where it is thought that appropriate knowledge and attitudes will lead to safer practices, have been replaced to some extent by participatory health programmes in which sex workers play a central role as community organisers and

peer leaders. Social relationships are considered a more effective basis for change than ideas about individual rationality which structure the more traditional programmes. Role play, focus groups, collective bargaining and negotiation with managers, clients, and state officials provide situations in which inequalities are addressed and attempts made to change the organisation of prostitution, which is seen to increase if not wholly determine workers' risks.

This approach explicitly rejects programmes that could reinforce the social exclusion of sex workers through blaming them for sexually transmitted disease and holding them responsible for prevention. Interventions to core groups associated with high rates of infection are supported only if these encompass all the relevant sexual partnerships and if they avoid "victim blaming." In general, community programmes advocate the provision of specialist occupational health services rather than programmes which target sex workers in order to control sexually transmitted diseases in the population as a whole.

Do the interventions work?

Targeted control programmes have led to successful risk reduction and decreased levels of infection. Many studies report increased condom use among sex workers. Particularly dramatic changes have been related to broad governmental support or to marketing through the private sector. For example, the Thai government implemented a national condom programme in sex establishments in 1991, accompanied by police sanction. This campaign is reported to have been associated with an increase in use among sex workers from 15 000 to more than 50 000 condoms a month in one Thai province.⁶⁶ It has been suggested that declining rates of the classic sexually transmitted disease are due to increased condom use as well as other changes in behaviour, such as widespread antibiotic use, and better STD management.^{25 64} Even small increases in condom use can decrease the transmission of HIV and other STDs.⁶⁷

In Zaire, it was shown that STD treatment had an independent effect on HIV-1 incidence after controlling for levels of condom use and numbers of partners.⁹ A clinic based intervention of STD care and condom promotion for female sex workers was also associated with a declining incidence of HIV-1.⁴⁴

Outcome measures are hard to interpret, even with good baseline information. It is difficult to assess the contribution of an intervention in isolation from other factors. Further complications include the extensive mobility of sex workers, difficulties in interpreting reported practices and the lack of adequate comparison groups. Two studies illustrate the problems. Although there were marked increases in reported condom use among prostitutes attending the Praed Street Project in London between 1986 and 1988, it was found that women new to the project in 1988 also reported high levels of condom use. In Ghana,

a study undertaken 3 years after a community intervention showed that levels of condom use were higher than they had been at enrolment but similar to those among sex workers in a control cohort, who had never participated. In both cases, risk reduction is attributed tentatively to peer networks and the diffusion of new occupational norms. Other programmes may also have had an effect, for example, in modifying the behaviour of clients.^{1 68}

There has been some indirect evaluation of the benefits for the "non-core" or "general population" of targeted interventions to sex workers. Moses *et al* suggest that condom promotion among sex workers has been cost effective in reducing STDs in women and their clients.⁶⁹ In 1981–2, an epidemic of chancroid was described in California where 86% of the 271 patients with culture positive *Haemophilus ducreyi* reported recent sexual contact with prostitutes. Only five of the 271 patients were known sex workers, but it was thought that undiagnosed infection in sex workers was playing an important role in the continuing epidemic. The use of a prophylactic mass treatment programme, reaching 287 sex workers in the local jail and more than 700 men reporting recent contact with sex workers, was followed by a steady decline in the numbers of new cases.⁷⁰

Programmes that target sex workers as a core group, irrespective of the very different dynamics of transmission in particular places, may be less effective than those focusing on wider communities. One of the few randomised interventions to assess the effects of STD control on HIV infection reported a 42% decline in HIV incidence among entire communities receiving improved STD care.⁷¹ While this dramatic decline was not associated with statistically significant differences in prevalence for a range of sexually transmitted infections, the reduction was attributed to a shortened duration of symptomatic disease. This may have decreased both infectiousness among HIV positive individuals and the risk of acquisition among their partners.

More generally, decriminalisation of prostitution and anti-discriminatory measures have been associated with low levels of infection and almost universal condom use. In New South Wales, Australia, and in the Netherlands, legal and social changes appear to have paved the way for more effective health interventions within the sex industry.^{48 72}

The success of specific programmes depends in large measure upon broader health and prostitution policy. Laws against the provision of sterile injecting equipment make distribution impossible. Condom use cannot be widely promoted if laws forbid advertising. Structural adjustment programmes distributing wealth from the poor to the rich make it difficult to provide accessible or appropriate services.⁷³ For example, a mandate from the World Bank led to charges for STD clinic services in Kenya and attendance fell between 35–60%.⁷⁴ Similarly, criminal sanctions and social stigma hamper STD control programmes for sex workers since many individu-

als avoid contact with state agencies and unrealistic programmes are designed which place responsibility for disease prevention on those who have little ability to guarantee safer sex. Accordingly, antidiscriminatory measures are as important to programmes of disease control as more narrowly defined health services.

Conclusion

Disease control measures specifically developed for, or targeted to, sex workers have been informed by reported levels of infection and prostitution policy. Models of core groups are particularly influential in the design of current strategies. Three distinct approaches have been outlined. The first is regulation. It is widely acknowledged that punitive legislative reforms are impracticable and/or ineffective. It is unrealistic to consider that all sex workers can be identified through legal measures and likely that the majority will be further excluded from health care. Historically, repression has joined prostitutes with other "outcasts" through processes of social exclusion that have created a synergy between different STD risks such as sexual and drug using behaviours.

The second approach attempts to improve access to appropriate services. The positive results of educational and clinical programmes for sex workers are clear. In some study groups, condom use has increased dramatically, STD rates have decreased and transmission dynamics have altered. Some services appear to provide hitherto lacking health care for poor and often young people. Others appear to have been avoided because sex workers are held responsible for disease and disease prevention.

The third approach considers sex workers a central component to community control programmes. In general, this approach tackles problems of social exclusion directly by attempting to enhance the ability of sex workers to safeguard their health and improve their position within the sex industry. Sex workers are enabled to insist upon reasonable work conditions; they also provide channels of communication and models for risk reduction within the industry more generally and for other groups "at risk" such as poor women, drug users, and men who have sex with men.

Efforts to control STDs may be compromised by the apparent ease with which the sex worker is defined in terms of multipartner sexual activity. This definition ignores relations of inequality, where sex workers may be unable to insist upon the risk reduction advocated by health workers. It ignores other defining features of prostitution, such as poverty and prejudice. Prostitution is common, hidden, and criminalised. In these circumstances, the majority of sex workers cannot be contacted through specialist services, and those who do attend may already have suffered serious morbidity. This severely limits the possible success of targeted programmes to control STDs. Since the boundaries between prostitution, sexuality, and work are often blurred and continually redefined, such programmes will also

fail to contact those who do not work or identify as sex workers but who are at significant risk of infection. Targeted programmes are important in the short term for those with higher prevalences of infection, including groups of prostitutes. Specialist health care is an important occupational service for sex workers, regardless of the relative prevalence of infection. However, targeted control programmes and specialist health services can only complement, not replace, more broadly based interventions to the sex industry as a whole and a general health infrastructure.

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