



# HIV/AIDS & STI NEWS

From the DFID Knowledge Programme on HIV/AIDS & STI

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## From the editorial board



This is the **newsletter** of the DFID\* Knowledge Programme on HIV/AIDS and STIs. The Programme is funded by the Department for International Development, UK, and based at the London School of Hygiene and Tropical Medicine (LSHTM) and the Medical Research Council (MRC), Social and Public Health Sciences Unit (SPHSU), University of Glasgow. It has five Knowledge Areas: 1) Determinants of sexual behaviour; 2) Biological risk factors for HIV and STI transmission; 3) Factors affecting use and effectiveness of care and prevention services for HIV/AIDS and STIs; 4) Impact and cost-effectiveness of interventions against HIV and STIs; and 5) HIV/AIDS and STI prevention and care priorities and policies.

These newsletters provide a forum for the exchange of research within the Programme and introduce other relevant research from Programme members. They form a useful means to exchange information such as updates on projects underway, conferences, new grants, etc. Initially, the selected articles reflect the contents of our bi-annual scientific meetings in London (or Glasgow). Contributions from

Programme members are invited. Please email comments and suggestions to: [Tamsin.Kelk@lshtm.ac.uk](mailto:Tamsin.Kelk@lshtm.ac.uk). Also see the Programme's website at: <http://www.lshtm.ac.uk/dfid/aids/>

*Philippe Mayaud, David Mabey, Graham Hart and Tamsin Kelk*

## In this issue

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Newsletter editor: Tamsin Kelk, Health Policy Unit, London School of Hygiene and Tropical Medicine, Keppel Street, London, WC1E 7HT, UK. Email: [Tamsin.Kelk@lshtm.ac.uk](mailto:Tamsin.Kelk@lshtm.ac.uk)

## High-Risk Populations: sex workers and their clients

### Introduction

Sex workers, their clients and their partners form an important target group for HIV/STI prevention for three main reasons: the high incidence of STI and HIV among them; their role as 'core groups' and 'bridging' populations in the STI and HIV epidemics; and because targeted programmes have been shown to be feasible and (cost) effective in various settings.

Strategies successful in curbing the high incidence of HIV/STI in female sex workers (FSWs) have included:

- Use of key informants, 'gate keepers' (e.g. brothel owners) and leaders to access these hard-to-reach populations
- Peer health promotion and education
- Outreach activities, including mobile clinics
- Condom social marketing and distribution
- Provision of accessible and acceptable sexual health services.

An important issue regarding STI care among FSWs lies in finding the appropriate mix of STI case detection and management strategies: management of symptomatic STI; screening of asymptomatic STI; and targeted regular presumptive STI treatment.

Future challenges for targeted interventions are:

- Access to the most difficult-to-reach groups
- Female-controlled prevention methods
- Designing prevention projects for partners of FSW
- Effect of income-generating projects
- Care and support for FSW with HIV/AIDS.

### High-risk populations in a mining community in Tanzania

Mining communities are recognised as core high transmission areas for HIV/STI. In Tanzania, HIV prevalence is 8% overall, but higher in urban areas and mining communities. The AMREF Mine Health Project was established in 2 large-scale gold mines in the Lake Victoria goldfields. It has involved peer health education targeting miners, general community members and female food and recreational facility workers (FRFW); sexual and reproductive health services; condom social marketing; and voluntary counselling and testing (VCT) in the mine and surrounding communities.

Qualitative research was conducted in a small town 3km from a large commercial gold mine in North West Tanzania, which started production in 2000. Objectives were to identify populations at high risk of HIV and suggest suitable behavioural interventions by gaining an understanding of sexual behaviour patterns in the town. Methods comprised participant observation, informal questioning guided by checklists and in-depth interviews.

### Results

Some miners lived in the town; others lived on the mine compound and visited the town for recreation. Many other people had moved to the town or visited it regularly to benefit from the economic opportunities brought by the mine. Many commercial outlets focused on provision of food, recreation and temporary lodging. These outlets were a focus for high-risk commercial sexual activity.

**Women** who worked in bars, guesthouses, restaurants and video and disco halls are defined as FRFW. These women often provided sex for money to men visiting their places of work. They

also played a major role as intermediaries, organising encounters between people seeking sexual partnerships.

However, commercial sex work was not confined to FRFW. Women were said generally to expect and actively seek money for sex and to seek new partners if their material desires were not fulfilled. This even applied to regular partners, known as *mahawara* (partners/mistresses), *vimada* (kept women/concubines) and *wake* (wives). Some women relied on selling sex for subsistence. The term *machangudoa* was applied to women who were unemployed, had no regular male partner, shared sleeping accommodation with other unemployed women and sold sex. *Malaya* were unemployed women who visited the town to sell sex, particularly around miners' pay days. *Machangudoa* and *malaya* were said to have very high numbers of partners. But, regular female partners were also at risk because they were willing to take new partners for material reasons, and because their partners were believed to be unfaithful to them.

**Men** were aware that their sex appeal depended on money and an important reason they had multiple partners was to demonstrate their affluence and enhance their attractiveness. *Wamgodini* (miners) and *wafanyabiashara* (formal and informal businessmen) were highly desirable partners as they had steady, highly paid employment. Some women were willing to gamble on the earning potential of *wasoteaji* (lit. "struggling ones") who were looking for work. *Mamami* (petty traders from rural areas) were seen as less desirable, but provided a steady clientele to *machangudoa*. *Machekbob* (fashion-conscious male youths) were able to attract young women in particular by showing they had access to resources by having fashionable clothes and haircuts. Payment for sex conferred men with a sense of ownership over women. Violence against women was common, and was often explained as resulting from women having betrayed men who had given them money or goods for sex. Organised gangs of men, known as *wahuni*, carried out gang rapes that were sometimes explained as reprisals against unfaithful women.

### Conclusions

Commercial sex workers are often regarded as 'core' groups, yet in this context it is difficult to distinguish sex workers, since sex is exchanged for money or goods by a broad range of women, irrespective of employment or union status. So many men report paying for sex and having multiple partners that it is difficult to say whether most male types are 'core', 'bridging' or 'general' populations. The town may be regarded as a high-risk environment as a result of the economic opportunities available there, which contrast with the poverty of surrounding areas and which are often accessed by offering sex in exchange for money or goods. In this environment the potential for spread of infection of HIV/STI between sub-populations is extremely high.

The study enabled the development of a typology of groups at risk of HIV based on local cultural categories. As a result of this understanding further interventions are being initiated by the AMREF MHP in the town. For instance, given that miners are held in high esteem, several are being trained as "opinion leaders" to promote safer sex. Peer training and education is ongoing among FRFW. Outreach interactive education is provided to types who may be less suitable as peer educators, such as *machangudoa* and *malaya*, given the competition among them, their mobility and the fact that a woman may move out of the category if she gets a job or a steady relationship with a man. Condoms are promoted among all groups, with plans to use marketing techniques such as videos, thought likely to appeal to local tastes for modern goods. The situation should be kept under review to ensure interventions develop in line with local needs.

Caroline Allen (MRC SPHSU, Glasgow)

(with N Desmond, S Clift, M Plummer, G Bugeke, B Justine, L Medard, J Mzugu, D Watson-Jones, D Wight, DA Ross, J Changalucha)

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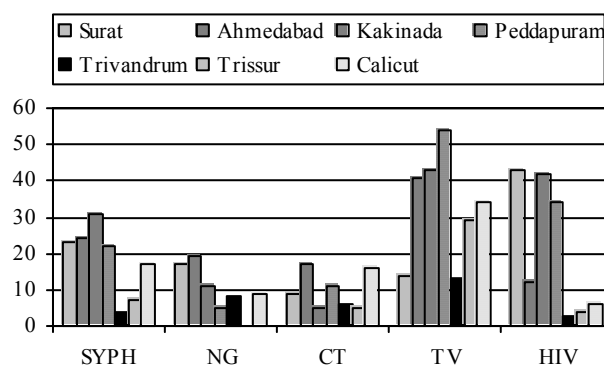
### DFID-India Impact Assessment Project: STI and HIV prevalence studies among female sex workers

This project, designed to assess the impact of ongoing HIV prevention activities among high-risk groups in India, consisted of: HIV/STI prevalence studies among FSWs; behavioural surveillance surveys; and a health-care provider survey. HIV/STI prevalence studies were implemented by different NGOs working with FSWs, in collaboration with local government agencies, laboratories and academic departments. Overall coordination and technical assistance was provided by Family Health International (FHI).

#### Methods

The study was carried out in Ahmedabad and Surat in Gujarat, Kakinada and Peddapuram in Andhra Pradesh, and Trivandrum, Calicut and Trissur in Kerala. Sample size was 400 FSWs per state. FSWs reached by the intervention were mobilised through 'health camps' to be enrolled in the survey. Laboratory tests were performed for *Neisseria gonorrhoeae* (NG), *Chlamydia trachomatis* (CT), *Trichomonas vaginalis*, syphilis and HIV.

#### Key findings: STI & HIV prevalence



#### Key findings: Behaviour

Site	No. of sex partners/day	Consistent condom use
Surat	90% more than 3	94%
Ahmedabad	70% more than 2	32%
Kakinada	Mean: 6	26%
Peddapuram	Mean: 5	9%
Trivandrum	Mean: 2	48%
Trissur	Mean: 2	33%
Calicut	Mean: 3	52%

#### Discussion

Wide variations in STI and HIV prevalences, and in reported sexual behaviours, were found between states. But HIV prevalence rates observed in each state corresponded well to those of other high-risk groups in the same states.

Performance of syndromic case management (SCM) was poor for vaginal discharge syndrome (VDS). In Ahmedabad, for example, most women with VDS suffered from vaginal infections (40%), whilst 30% had NG/CT infections, but SCM would miss about 90% of cases of NG/CT infections (asymptomatic cases).

The high levels of STIs imply that more effective control

methods are needed, e.g. regular screening of STIs by organizing 'health camps' for FSWs, which has already started in Gujarat state. Trials to evaluate different strategies for STI control for high-risk women are needed, e.g. periodic screening vs. periodic presumptive therapy vs. SCM. The LSHTM, Population Council and local government authorities will be partners for such a study with funding from the European Union.

*Khanindra Kumar Bhuyan  
[Recipient of scholarship from DFID KP on  
HIV/AIDS & STIs (MSc. Epidemiology)]*

### The impact of periodic presumptive treatment (PPT) for STI among FSWs in Benin and Ghana

In Benin and Ghana, as in much of West Africa, core and bridge groups play important roles in HIV/STI epidemics. Despite a range of interventions for FSWs and their potential clients, there is a high residual prevalence/incidence of STI (and HIV).

The **main objective** of this study was to evaluate the impact of PPT on NG/CT prevalence among FSWs in Benin and Ghana over a nine-month period. **Secondary objectives** concerned the impact on: prevalence of NG/CT among male clients recruited at prostitution sites; incidence of HIV among the FSW cohort; and monitoring of gonococcal antimicrobial resistance to study drugs (ciprofloxacin and azithromycin). Study design was a multicentre randomised double-blind placebo-controlled trial, with cluster (women operating in small communities known as 'seaters') and individual (women known as 'roamers') randomisation.

#### Methods

##### FSW study

Cluster randomisation was used in Accra-Tema and in the peripheral sites of Cotonou and Porto Novo. Communities were paired according to size, demographic characteristics of the FSW population, and characteristics of male clientele. Within each pair, one was randomly allocated to the intervention and the other to the placebo group. Standard 1:1 randomisation was used for the rest of the eligible population in Cotonou and Porto Novo ('roamers' working in downtown areas).

The intervention consisted of supervised intake of single-dose azithromycin (1g) on month 1, followed by single-dose ciprofloxacin (500mg) on months 2 and 3 (or corresponding placebos), with this 3-month cycle repeated over 9 months.

Study procedures included interview, genital exam and collection of genital samples (NG/CT by PCR) at quarterly intervals as well as NG culture and a fingerprick blood sample for HIV testing at enrolment and final visit (months 0 and 9). These procedures were conducted at a dedicated clinic, whilst drug delivery was ensured monthly at the prostitution sites.

##### Clients studies

Two separate cross-sectional surveys were carried out: one immediately before the admission month for FSW, to verify characteristics and NG/CT prevalence in men, and balance between randomised clusters; and one at the study end, to measure intervention impact on NG/CT in the clients.

Procedures included: evening fieldwork at prostitution sites; direct approach by male fieldworker; collection of urine specimen before visiting the FSW, and LED testing to detect pus cells in urine (possible indicator of urethritis); interview after coming out of FSW room and free treatment based on symptom/LED test. Urine samples were later tested for NG/CT by PCR and for HIV.

##### Sample size considerations and data analysis

Nine clusters and about 600 women (across the two countries) were estimated to be necessary to detect a 50% reduction in NG/CT, assuming 25% prevalence in the control group, 80%

power and 5% alpha error. To detect a 50% reduction in NG/CT, assuming 13% prevalence in men, 80% power and 5% alpha error, 9 cluster pairs of 60 men each are needed (600 hundred men across the two countries). Analysis will be done in an intention to treat analysis (ITT); separate for cluster outcomes and 1:1 randomisation; if no interaction for study design, stratified pooled analysis to obtain single measure of impact for FSW.

##### Summary of preliminary results

Enrolment was satisfactory (433 women in Benin and 384 in Ghana, although we enrolled fewer FSWs in the Cotonou clusters than expected), with 95% initial acceptance; 7% transfers between clusters occurred in Benin, 0.4% in Ghana; 72% of the 5260 eligible monthly doses were effectively administered. Non-compliance was linked to mobility in Benin and absence/refusal in Ghana. HIV rates were high at baseline (62% among FSW clusters in Benin; 15.8% among clients in Accra), whilst STI rates were comparable to 1998/9 or falling. There was no increase in NG resistance during the study period. The study shows the feasibility and high acceptability of PPT and of client studies in these hard-to-reach populations.

*Philippe Mayaud (Clinical Research Unit, LSHTM)*

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## Conference Report

### "Knowledge and Commitment for Action": the XIV International AIDS Conference, Barcelona, 7-12 July, 2002

#### Presentations on 'HIV and mobile populations'

Mobile populations are people who move from one place to another temporarily, seasonally or permanently for a host of voluntary and/or involuntary reasons. They are acknowledged to be at high risk of HIV as a result of their isolation and insecurity and limited access to sexual and reproductive health services. The conference featured research and workshops highlighting risk and discussing interventions with mobile populations.

#### Associations between mobility and HIV

Studies from Tanzania (Isingo et al; Wambura et al), Uganda (Nakiyingi et al) and Zimbabwe (Voeten et al) demonstrated significant statistical associations between mobility and HIV status, controlling for other characteristics and behaviours. In a cross-sectional survey of 1320 randomly sampled adults aged 15-54 in rural communities of Mwanza, Tanzania, Wambura et al found HIV prevalence of 7.4% among in-migrants and 3.8% among residents (adjusted OR for age and sex = 2.26,  $p < 0.01$ ), but no significant difference between residents who travelled outside the community and those who did not.

Isingo et al used a longitudinal community-based study in Kisesa, Mwanza to measure the contribution of mobility to HIV incidence. Socio-demographic characteristics, sexual partnership information and HIV status collected for 11,340 people in 1994/5, 1996/7 and 1999/0 were linked to migration histories from 13 rounds of demographic surveillance between 1994 and 2000. Incidence estimates were based on 5,647 individuals aged 15-49 tested at least twice. Incidence was significantly higher in mobile individuals. Restricting mobility to movement occurring before sero-conversion, and allowing for time variant effects of risk factors, suggests that mobility per se significantly increases the risk of HIV infection, with hazard ratios of 5.1 (3.5-7.5) for males

and 4.9 (3.5-7.5) for females. This was independent of the excess risk associated with non-marital partnerships.

### Interventions with mobile populations

A skills-building workshop titled *Empowering Migrant Workers Against HIV/AIDS* emphasised the importance of integrated strategies and cooperation between migrants' countries of origin and their countries of destination. CARAM Asia promoted their generic manual on pre-departure, post-arrival and reintegration programmes: at each stage programmes should address vulnerability, personal risk, human rights and gender issues. National AIDS Programmes in countries of origin and destination should work together; network with labour unions, religious organisations, NGOs and security and immigration authorities to establish an integrated support system; and facilitate the development of organisations for migrants themselves.

A project based at truck stops in India (Singh et al) mobilized key secondary stakeholders (shop owners, transport companies, petrol pump owners and workers, police and health authorities) to create an enabling environment. In an intervention for trafficked girls and women in Bosnia-Herzegovina (Belda et al), provision of a pamphlet of reproductive health information specifically addressed to this group resulted in an immediate increase in requests for medical consultations and STI testing. Follow-up focus groups demonstrated a greater awareness of rights and health risks.

Sesay described the African HIV Policy Network in the UK, which acts to ensure the effective input and participation of African communities in UK national policy development on HIV and sexual health. Lyons et al reported on the development of guidelines for 'involuntary' counseling and testing. Many countries require potential immigrants to be tested for HIV prior to entry, yet supportive counseling is rare for those testing positive and refused entry.

### Travel and tourism

Following a presentation on *Addressing Mobile and Migrant Populations*, it was noted that tourists have received little attention in mobile population research. Only 30 of 8824 conference abstracts contained the words "tourist" or "tourism", 22 of which were on interventions or biomedical studies in tourist areas with no data on behaviour or HIV prevalence specifically among tourists or their partners. Six studies gave data on sexual behaviour of partners of tourists in destination countries (mostly sex workers). Only two gave data on the behaviour of tourists themselves. In Coussey's study of boys who have sex with male tourists in Ghana, 57% of tourist respondents said they "made provision for possible sexual contact", though it is not clear if this translated into condom use. Takenaka's study of foreign male travelers in Thanon Khaosan, Bangkok showed that during their travel 15% had sex with a local person, another tourist or with prostitutes.

With the growth in tourism and particularly sex tourism, the lack of rigorous research in this area is troubling. Highlighting the epidemiological importance of travel, McGarrigle et al showed

that in the UK, 88% of HIV infections attributed to heterosexual activity were acquired outside the UK; but they did not distinguish between cases associated with overseas leisure and business travel and those of migrants to the UK.

### Conclusion

The vulnerability of mobile populations to HIV was demonstrated in studies in sub-Saharan Africa. The apparent profusion of interventions with migrant populations worldwide is encouraging, but, unfortunately, little evidence of the effectiveness of interventions was presented. Important areas for future research are process and outcome evaluations of interventions with mobile populations, and studies of sexual behaviour and HIV prevalence among tourists and their partners.

Caroline Allen (SPHSU, MRC Glasgow)

**Disclaimer:** \*The UK Department for International Development (DFID) supports policies, programmes and projects to promote international development. DFID provided funds for the Programme as part of that objective, but the views and opinions expressed are those of the authors alone.

## Selected New Publications

- Allen C, Da Costa Martinez D, Wagner U, McLetchie K, De Gazon Washington AM et al. (2002) The sexual behaviour of youth in Tobago: a report on the development of a health promotion project. *West Indian Medical Journal* 51 (3): 197-99. *Research Output 4*.
- Cooper J, Mayaud P (2002) ONG et chercheurs: exemple de collaboration sur une mission SIDA en Tanzanie. *Humanitaire* (automne/hiver); 6: 49-61. *Research Output 3*.
- Crampin AC, Floyd S, Glynn JR, Madise N, Nyondo A et al. (2003) The long-term impact of HIV and orphanhood on the mortality and well-being of children in rural Malawi. *AIDS* 17: 389-97. *Research Output 5*.
- Ginwalla SK, Grant AD, Day JH, Dlova TW, Macintyre S, Baggaley R, Churchyard GJ (2002) Use of UNAIDS tools to evaluate HIV voluntary counselling and testing services for mineworkers in South Africa. *AIDS Care* 14: 707-26. *Research Output 4*.
- Jansen HAFM, Morison L, Mosha F, Changalucha J, Todd J et al. (2003) Geographical variations in the prevalence of HIV and other sexually transmitted infections in rural Tanzania. *International Journal of STD & AIDS* 14: 274-80. *Research Output 2*.
- Lush L, Walt G, Ogden J (2003) Transferring policies for treating sexually transmitted infections: what's wrong with global guidelines? *Health Policy and Planning* 18(1): 18-30. *Research Output 5*.
- Vickerman P, Watts C (2003) Injecting drug use and the sexual transmission of HIV: simple model insights. *International Journal of Drug Policy* 14: 89-93. *Research Output 5*.

Details of Programme research output areas are given on page 1. A more extensive list of publications is available on our website: <http://www.lshtm.ac.uk/dfid/aids/>

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Name \_\_\_\_\_

Mailing address \_\_\_\_\_

Email: \_\_\_\_\_