

**Integrated Bio-behavioral Survey  
(IBBS) Among Female Sex Workers  
and Truckers Along the Terai  
Highway Routes Covering 22  
Districts of Nepal**

**July 2004**



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Female Sex Workers and Truckers  
Along the Terai Highway Routes  
Covering 22 Districts of Nepal**

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## ABBREVIATIONS

AIDS	-	Acquired Immuno-Deficiency Syndrome
AMDA	-	Association of Medical Doctors of Asia
BCI	-	Behavioral Change & Intervention
BSS	-	Behavioral Surveillance Survey
CT	-	Chlamydia Trachomatis
ELISA	-	Enzyme Linked Immunosorbant Assay
FHI	-	Family Health International
FSWs	-	Female Sex Workers
GWP	-	General Welfare Pratisthan
HIV	-	Human Immuno-Deficiency Virus
ICDDR, B	-	International Center for Diarrheal Disease Research, Bangladesh
ID	-	Identification Number
IDU	-	Injecting Drug User
IEC	-	Information, Education and Communication
NCASC	-	National Centre for AIDS and STD Control
NHRC	-	Nepal Health Research Council
NPHL	-	National Public Health Laboratory
NTEA	-	Narayani Transport Enterprise Association
PCR	-	Polymerase Chain Reaction
PHSC	-	Protection of Human Subjects Committee
RPR	-	Rapid Plasma Reagin
SACTS	-	STD/AIDS Counseling and Training Services
SLC	-	School Leaving Certificate
SPSS	-	Statistical Package for the Social Sciences
STD	-	Sexually Transmitted Disease
STI	-	Sexually Transmitted Infections
TPHA	-	Treponema pallidum Hemagglutination Assay
TUTH	-	Tribhuvan University Teaching Hospital
USA	-	United State of America
WATCH	-	Women Acting Together for Change



## EXECUTIVE SUMMARY

### Background of the Study

An HIV/STI and behavioral risk survey of female sex workers and truckers conducted in 1999 in the Central and Eastern Terai of Nepal near the Indian border provided baseline biological and behavioral risk prevalence for a set of HIV/STI prevention interventions, which followed. FHI and six NGO partners implement behavior change interventions with FSWs and their clients including: peer communication; outreach work; condom demonstrations & free distribution; community awareness raising through events and street dramas; IEC materials distribution; condom social marketing; drop-in centers; training; and mass media for condom promotion for sexual health. In addition, mobile STI diagnosis and treatment services are provided through BCI peer communicator referrals and at locations within BCI projects. These integrated activities promote risk reduction and have been implemented synergistically since 2001.

The survey conducted in 1999 found that HIV prevalence was relatively low in both groups (3.9% among FSW and 1.5% among truckers) but that other STIs, notably syphilis, were quite high (18.8% among FSW). Other highlights of the survey were that HIV and STI infection among FSW was highly related to previous sex work in Maharashtra, India, particularly Mumbai. The condom use in the last sex act reported by FSWs was about 42% and use of condom by truckers in the last sex with FSWs was about 69.3%.

Since that 1999 survey, interventions among both groups have been intensified. Furthermore, yearly behavioral surveillance surveys (BSS) have shown that condom use has steadily increased and that commercial sex partnerships among men have declined. Given these positive behavioral trends, it is appropriate to determine what biologic impact these interventions have had on the respective population groups.

### Objectives of the Study

The general objectives of the study are to determine the prevalence of sexually transmitted infections (STIs) like human immunodeficiency virus (HIV), *Neisseria gonorrhoeae*, *Chlamydia trachomatis* and syphilis among FSWs working in the highway areas of Nepal's Terai extending from the east to the far west; and to determine the prevalence of HIV and syphilis among the truckers operating on the eastern highway routes of Nepal.

The specific objectives of this study are to measure the prevalence of the following STIs, STI syndromes and behavioral correlates among FSWs and truckers:

- STI: HIV, syphilis, gonorrhea (FSWs only) and chlamydia (FSWs only)
- STI Syndromes: Genital ulcers, urethral discharge (truckers) and vaginal discharge and lower abdominal pain (FSWs)
- STI and Demographic and Behavioral Correlates: Demographic, behavioral and biological correlates of HIV and STI infection.

## Methodology

A cross-sectional study was conducted to determine the prevalence of selected sexually transmitted infections (STIs) including HIV among the female sex workers and truckers along the Mahendra Highway (East-West Highway). The study covered 22 districts in the Terai and lasted from August to November 2003.

All the study participants - FSWs and truckers - were tested for HIV and syphilis. The FSWs were also screened for *Neisseria gonorrhoeae* (NG) and *Chlamydia trachomatis* (CT).

Altogether 600 FSWs and 400 truckers participated in the study. Blood tests were performed on all the participants to detect the presence of antibodies to HIV using the ELISA method. They were further tested for syphilis with a rapid plasma reagin (RPR) test and a confirmatory *Treponema Pallidum* Haemagglutination (TPHA) test. Endocervical swab specimens were collected from the FSWs and tested for evidence of *Neisseria gonorrhoeae* (NG) and *Chlamydia trachomatis* (CT).

Ethical approval to conduct the study was obtained from the local research ethics committee, the National Health Research Council (NHRC) and the Protection of Human Subjects Committee (PHSC) of Family Health International (FHI). An oral informed consent was obtained from all the study participants before they were recruited. The participants were examined clinically and provided syndromic treatment for symptomatic STIs, blood samples were drawn and endocervical swab specimens taken from the female participants. All the candidates received pre-test counseling before the blood samples were taken. They were given IEC (Information, Education and Communication) materials on the prevention of STIs and asked to return for the HIV and STI results. When they came back to get their blood test results, they received post-test counseling. Additionally the participants

## Study Population

The study population of this survey consisted of female sex workers (FSWs) and truckers from the East West Highway route.

**Female Sex Workers:** Those who have been involved in the sex trade in exchange for money or equivalent (in the form of goods) for at least one year prior to the survey. The survey sites Itahari, Lahan, Narayanghat, Butawal, Nepalgunj, Dhanagadi and Mahendranagar were determined through mapping and through consultation with NGOs working in the area. From these seven locations 600 FSWs were sampled.

**Truckers:** Male truckers or helpers intercepted at the Hetaunda trucking stop along the East-West highway aged 16 and above. Individuals aged 16 and above are allowed to work as Truck helpers in Nepal. 400 truckers were sampled from Hetauda.

In this study two different samples were designed for FSWs in the Eastern and Western clusters. This was necessitated by the significant difference in the characteristics of FSWs in the Eastern and Western clusters (based on the data from BSS round 4 in Eastern cluster and BSS round 1 in Western cluster). The sample size for FSW is 400 in eastern cluster and 200 in the western cluster. The sample size was so designed as it allowed us the proper comparison of the results with the eastern cluster as well as with 1999 sero survey conducted in eastern cluster.



## Implementation of Study

The study was implemented by a team consisting of a study director, research assistants, interviewers, staff nurses, health assistants, lab technicians and motivators. Five field teams – four teams for the FSWs and one team for the truckers – conducted the field work simultaneously at five sites. The field work started on August 26, 2003 and ended on November 27, 2003.

Clinics were set up at each of the study sites. They were established at eight places – Hetauda, Itahari, Lahan, Narayanghat, Butwal Nepalgunj, Dhanagadi and Mahendranagar. All the clinics were set up at locations where they were conveniently accessible to the participants and were relatively safe.

For the clinical purpose the study was conducted in collaboration with two laboratories – SACTS, Kathmandu, Nepal and ICDDR,B, Dhaka, Bangladesh. SACTS was responsible for setting up the mobile labs at the field sites, provision of training for the lab technicians, supervision and collection of blood samples and testing for HIV and syphilis. The responsibility of ICDDR,B was to test for *N. gonorrhoeae* and *C. trachomatis* at their Dhaka testing facility.

The study participants were pre-test counseled for their HIV and syphilis test, and told how, when and where they can receive their HIV and STI results with post-test counseling. For follow-up services study participants were referred to AMDA STI clinics. These test results were distributed after one month in both Eastern and Western clusters by trained HIV/STI counselors.

Confidentiality and the anonymity of the participants was maintained all the time. For the purpose of identification, each participant was given a unique identification number (ID) so that the HIV and STI test results could be given to them upon presentation of the ID number.

## ***Key Findings***

### Female Sex Workers

The FSWs who were recruited represented all five development regions (Eastern, Central, Western, Mid-Western and Far Western Regions). Out of the 600 FSWs, nearly 8% (the least) of them were living in the Central Region and 31.7% (the highest) were living in the Eastern Region.

The median age of the FSWs was 26 years with the age range 13 – 50. One-tenth (10%) of FSWs were never married. More than a third (36%) of the FSWs were divorced, separated or widower. Among the married ones, nearly half of the FSWs were currently living their husbands. Illiteracy among the sex workers was 60%.

Half of the FSWs had their first sexual experience at the age of 15, with the youngest being nine years old. Nearly 50% of the sample population had been in the sex trade for less than two years, indicating that new FSWs were entering the sex trade. Their clients were truckers and khalasi (helper to drivers), migrant workers, Rickshawalla, policemen businessmen and industrial workers. In the sub-population of the six far western districts, the second most-

cited types of clients were policemen. Mean number of clients entertained in the past week was 3.9. The average amount of money charged per client by FSWs was Rs. 400.

The study also revealed that FSWs were mobile in nature, with half of the FSWs reporting that they carried out their trade at the location where the interview was conducted. Eight percent (48 FSWs) of the FSWs reported to have practiced sex trade in India and out of these FSWs 25% (12 FSWs) worked in Mumbai as a sex worker. One-third (33%) of those went India to work as sex worker said they were coerced to go there.

Reported ever use of condom among the sex workers was 72 %; however condom use with the last client was 53% only. Only 23% of the FSWs reported to use condom every time they have sex with clients. Consistent use of condom with known sex partners (or trustworthy!) such as husband or male friend is even lower (6%).

HIV prevalence among the FSWs is 2 percent (or 12 sex workers out of 600 FSWs). More than a quarter (28%) of FSWs was found to be infected with any of the measured STIs (HIV, syphilis, Gonorrhoea or Chlamydia). It is to be noted that not a single FSW among those examined from the group of 6 districts was detected with HIV. Nine percent (or 54/600) of the FSWs were found to be currently infected with syphilis. The prevalence of gonorrhoea and chlamydia is significantly higher among the FSWs in the 16 districts. The relatively low prevalence of gonorrhoea and chlamydia among the FSWs in the six districts may be one of the explanations for the zero prevalence of HIV there.

The FSWs who had worked in India is associated with HIV and STIs. Half (6 FSWs) of the FSWs who were infected with HIV had practiced sex work in India and 4 FSWs of these had worked as sex worker in Mumbai. The HIV risk factor for those women who worked in India was 13 times greater, and for those who had worked in Mumbai it was 8 times greater.

Syphilis was associated with the FSWs, who were 20 years old or more and the FSWs in the sex trade more than or equal two years. Further syphilis is associated with sex work in India. There is a poor correlation between STD symptoms and real disease. Nearly 80% (469/600) said that they were suffering from symptoms that they believed to be evidence of STIs. Only 32.7% of them were clinically diagnosed to have gonorrhoea, chlamydia or syphilis. The FSWs who self reported that they had some kind of STIs at the time examination found to be negative when tested for syphilis or GC or CT. Only about a third of the FSWs with complaints (out of 469 FSWs) such as vaginal discharge, vaginal itching, vaginal odor, vaginal bleeding or abdominal pain had sought treatment. This shows that the treatment seeking behavior is poor.

The factors – ever use of condoms, consistent use of condoms, number of clients entertained and demographic characteristics such as marital status and educational level - had no effect on STI prevalence

A sub-set of data from 16 districts was used to compare HIV and syphilis prevalence rate with the HIV and syphilis data of 1999 sero survey conducted in the same 16 districts. It revealed that there was no significant change in HIV prevalence in 2003 (3 % or 12/400) since the 1999 survey (3.9% or 16/410). However, the percentage of FSWs with active syphilis has decreased from 18.8% in 1999 to 9.2% in 2003. The prevalence rates of gonorrhoea (9% in 1999) and chlamydia (9.3% in 1999) have increased slightly to 18% and 12.3% respectively.

## Truckers

The median age of the truckers is 27 with their ages ranging from 17 to 59 years old. Three-quarters (73%) of the truckers were married. Most of them were literate. Almost of all the married truckers were currently living with their wives. Due to the truckers' mobile nature, they nearly 70% of the truckers participating in the study reported that they were away from their families for 15-30 days in a month in the course of their work. Consequently, their chances of contacting with FSWs and other women were more frequent.

Although all the truckers were interviewed at Hetauda, a central region of Nepal most the truckers had driven their trucks to the far western region of Nepal as far as Kanchanpur.

Almost all of the truckers had experienced sex with women. Forty four percent of truckers reported to have sex with a FSW in the past year and 26% truckers reported to have sex with a FSW in the past three months. Mean number of FSWs visited in the past year was 4. The average amount of money spent on an FSW by a trucker was about Rs. 138. The amounts ranged from less than Rs. 5 to Rs.

Reported condom use during the last encounter with a sex worker was 85% and consistent use of condom with FSW in the past year was 71%. The study showed that the truckers tended to neglect using condom when having sex with known (or trustworthy!) partners. For example, regular use of condoms with girl friend in the past year was 37% while with wives was only 2.7%.

HIV prevalence is 1.8% among the truckers (7 out of 400 truckers).

About five percent of truckers found to infected with syphilis and 6.5 % had past history of syphilis. A statistical analysis using the chi square test did not show any correlation between HIV and the other variables. Since there aren't enough numbers in each cell a chi square test could not be done effectively.

There is association of syphilis with married truckers. Neither there is relationship between HIV and last condom use, consistent condom use, marital status, sex with FSW, sex with FSW in India or level of education

A comparison with 1999 sero survey data showed that there is no significant change in prevalence rates of HIV and a syphilis among the truckers in the 1999 and 2003 surveys.

## Recommendation

Since new girls are entering the sex trade every year, messages of safe sex and HIV/AIDS awareness campaign should be focused to that vulnerable group.

Female sex workers and truckers should continue to be targeted for HIV and STI control programs.

The ongoing syphilis control program, including rapid diagnostics and treatment should be expanded to include the gonorrhoea and Chlamydia which should include periodic screening as well.

Ongoing outreach and education programs should emphasize:

- HIV/STI risk of sex work in India, especially in Mumbai
- Identification of women returning from India for additional support and services
- STI symptom recognition and improved care seeking behavior
- Condom use even among married men

# CHAPTER 1: INTRODUCTION

## 1.1 Background

The first case of HIV in Nepal was identified in 1988. At the end of February 2004, a cumulative total of 3,432 cases of HIV infection had been reported to the National Center for AIDS and STD Control (NCASC, 2004). Among them, 60% were clients of female sex workers (FSWs) or patients suffering from sexually transmitted diseases (STD), 15% were FSWs and 14% were injecting drug users (IDUs). Although the HIV/AIDS reporting system can not measure the prevalence rate of the infection because of underreporting and delays in reporting, it indicates which sub-populations are affected.

Nepal is presently at the stage known as “concentrated epidemic” in which HIV is limited to high-risk sub-population groups such as FSWs and IDUs. The country has surpassed the 5% “low epidemic stage”. Recent data collected from migrant populations in two far western districts showed an HIV prevalence rate of 4-10% (New ERA/FHI, 2002 and Poudel, KC, et al, 2003).

Until recently, Nepal possessed only scattered data regarding the prevalence of HIV. Almost all the available information are for “high-risk sub-populations” such as FSWs, IDUs and a handful of migrant laborers. The first ever HIV and STI prevalence survey, which covered 16 districts in the Terai along the East-West Highway route, was conducted in 1999. The survey showed that 3.9% of the FSWs and 1.5% of the truckers were HIV-positive (New ERA/FHI, 2000). The HIV among FSWs in Kathmandu was found to be 17.1% (SACTS, 2001). A recent study showed 68% HIV infection among male IDUs in Kathmandu. Similarly, 22% male IDUs in Pokhara and 35% in the urban areas of Jhapa, Morang and Sunsari districts in eastern Nepal were carrying the virus (New ERA/FHI 2002b; New ERA/FHI, 2003a; New ERA/FHI, 2003b). Behavioral sentinel surveillance surveys among FSWs and their clients on the Terai highway routes and in the Kathmandu Valley revealed that the sex trade was on an increasing trend and that a greater number of younger FSWs were entering into the business (New ERA, 2003c and New ERA, 2003d).

An expanding sex industry as indicated by these surveys also means that the number of clients of the FSWs is increasing. One of the important findings of the 1999 sero-study conducted by New ERA (New ERA, 2000) was that 50% of the FSWs returning from brothels in Mumbai, India were found to be infected with HIV; and that such Mumbai returnees were nearly 40 times more at risk of contracting the virus than other FSWs. Individuals who have unprotected sex with “Mumbai-returned” FSWs run a higher risk of infection. Studies have shown that a majority of the clients of FSWs have steady partners, and an increased HIV rate among them will ultimately lead to an increased incidence of HIV among their regular sex partners such as their wives and other female sex partners.

It has been nearly four years since the HIV and STI prevalence survey was conducted in 1999. Since then, interventions targeted to FSWs and their clients have been intensified. Furthermore, annual behavioral surveillance surveys (BSS) have shown that the use of condoms has been increasing steadily and that commercial partnerships

among men have declined. Given these positive behavioral changes, it is appropriate to determine what biological impact these interventions have had on the respective population groups. This survey was thus done to measure the changes in HIV and STI prevalence among them at the present time.

## **1.2 Objectives of the Study**

The general objectives of the study are to determine the prevalence of sexually transmitted infections (STIs) like human immunodeficiency virus (HIV), *Neisseria gonorrhoeae*, *Chlamydia trachomatis* and syphilis among FSWs working in the highway areas of Nepal's Terai extending from the east to the far west; and to determine the prevalence of HIV and syphilis among the truckers operating on the eastern highway routes of Nepal.

The specific objectives of this study are to measure the prevalence of the following STIs, STI syndromes and behavioral correlates among FSWs and truckers:

- STI: HIV, syphilis, gonorrhoea (FSWs only) and chlamydia (FSWs only)
- STI Syndromes: Genital ulcers, urethral discharge (truckers) and vaginal discharge and lower abdominal pain (FSWs)
- STI and Demographic and Behavioral Correlates: Demographic, behavioral and biological correlates of HIV and STI infection.

## **CHAPTER 2: METHODOLOGY**

### **2.1 Background and Rationale**

An HIV/STI and behavioral risk survey of female sex workers and truckers conducted in 1999 in the Central and Eastern Terai of Nepal near the Indian border provided baseline biological and behavioral risk prevalence for a set of HIV/STI prevention interventions, which followed. FHI and 6 NGO partners implement behavior change interventions with FSWs and their clients including: peer communication; outreach work; condom demonstrations & free distribution; community awareness raising through events and street dramas; IEC materials distribution; condom social marketing; drop-in centers; training; and mass media for condom promotion for sexual health. In addition, mobile STI diagnosis and treatment services are provided through BCI peer communicator referrals and at locations within BCI projects. These integrated activities promote risk reduction and have been implemented synergistically since 2001. Trucking and trade traffic between the two countries is heavy on the land transportation routes in the Terai, creating a demand for sex workers, many of whom also migrate to and from India for sex work. Many of the sex workers found in Mumbai and other areas of India where HIV prevalence is high are Nepali women.

The survey conducted in 1999 found that HIV prevalence was relatively low in both groups (3.9% among FSWs and 1.5% among truckers) but that other STIs, notably syphilis, were quite high (18.8% among FSWs). Other highlights of the survey were that HIV and STI infection among FSW was highly related to previous sex work in Maharashtra, India, particularly Mumbai. The condom use in the last sex act reported by FSWs was about 42% and use of condom by truckers in the last sex with FSWs was about 69.3%.

Since that 1999 survey, interventions among both groups have been intensified. Furthermore, yearly behavioral surveillance surveys (BSS) have shown that condom use has steadily increased and that commercial sex partnerships among men have declined. Given these positive behavioral trends, it is appropriate to determine what biologic impact these interventions have had on the respective population groups.

#### **Assessing Program Effectiveness and Adjusting Interventions**

The major need for this survey is to evaluate the package of interventions which have been in operation in the targeted geographic area for several years and to determine their combined effect in maintaining low HIV prevalence and reducing the prevalence of other STIs. Furthermore, results will be used to adjust interventions so that they are more effective. In most of the settings where FHI/IMPACT is working, the passive STI surveillance systems range from weak to non-existent. Where they exist, they often do not capture the information in the target groups important for HIV control. Because of the large amount of additional information that can be obtained through laboratory-based studies, STI cross-sectional surveys are an important component of STI/HIV program effectiveness evaluation.

Since 1999 BCI and STI programs have expanded to the Western and Far-western Terai districts of Nepal also. The prevalence of HIV and STDs among FSWs and Truckers in this western cluster has not been measured to date. Therefore, for assessing existing program effectiveness and adjusting interventions in this sector this study has included the western cluster as well in the sample.

## 2.2 Methodology

**Study Population:** The study populations for this cross-sectional HIV/STI prevalence and behavior survey will be the following:

**Female sex workers (FSW) – Eligibility criteria is:** women reporting having been paid in cash or kind for sex. Based on the last survey 10% of respondents were under the age of 18 years. While we did not explicitly recruit young FSWs we did not exclude them either since STI rates in this group could be substantial. The survey sites Itahari, Lahan, Narayanghat, Butawal, Nepalgunj, Dhanagadi and Mahendranagar were determined through mapping and through consultation with NGOs working in the area.

**Truckers - Eligibility criteria is:** male truckers or helpers intercepted at the Hetaunda trucking stop along the East-West highway aged 16 and above as individuals are allowed to work as Truck helpers in Nepal. BSS round V conducted in the Eastern cluster shows that about 9% truckers were under the age of 18 years. Moreover, adolescents are not denied access to health care and reproductive health services in Nepal.

In this study two different samples were designed for FSWs in the Eastern and Western clusters. This was necessitated by the significant difference in the characteristics of FSWs in the Eastern and Western clusters (based on the data from BSS round 4 in Eastern cluster and BSS round 1 in Western cluster). The sample size for FSW is 400 in eastern cluster and 200 in the western cluster. The sample size in western cluster is so designed that it will allow us the proper comparison of the results with the eastern cluster. Given 1999 measurements of HIV and other STIs, it is designed to detect whether HIV has risen at least 5% and whether syphilis prevalence has been reduced by one-third its 1999 level. The sample size for truckers is 400. As the characteristics of truckers was found to be similar in Eastern and Western sectors a single sample is designed. Given the 1999 measurement of 1.5% HIV prevalence, this sample size is designed to detect a change of prevalence to 5% or higher.

## 2.3 Recruitment of Study Participants

### Recruitment of Truckers

Because of a large and frequent turnover of truckers on the truck route, Hetauda is the site of recruitment in the Eastern cluster. Hetauda is a large truck stop on the East – West Highway and is the site where truckers congregated to get assignments for various trucking jobs. They arrive at the site, put their name on a list, and wait for an assignment. As in the 1999 baseline study team worked in collaboration with the truckers association. As in the last study the truck park office in Hetauda was chosen for the study site.



Truckers were approached consecutively by study personnel in order to inform them about the study and asked to participate in the study. When they agreed to participate they were escorted to the study room where a witnessed oral consent was administered.

After consent truckers were administered a structured questionnaire. After that they were given pre-test counselling and information on STIs and HIV. Study participants who had complaints of STI symptoms the physical examination was carried out. Then the participants who had symptoms/evidence of ulcer and or discharge were examined for a skin and genital problems. As an incentive for the participants simple health check up such as height and weight measurement, blood pressure check up also was done. Symptomatic STIs patients were given medicine on the basis of syndrome management guidelines. Further, blood groupings and measurement of the level of blood sugar also was examined. The decision to offer these tests as incentives was based on the demand of the study participants in the 1999 survey. The study participants with high blood pressure and sugar level were counseled and referred to local clinics or doctors. After the general examinations blood sample was obtained.

The blood samples were tested for syphilis and HIV. Study participants were issued an ID card with a unique number associated with the participant's blood samples. All participants were given a fixed date and venue where they can come back to collect their test results if they wish. As the study participants themselves must come to collect their test results with their proper ID card, they were explained that ID card should not be lost or exchanged with others. Participants were informed that if they lose their card research team will not be able to identify their test results as their name and other personnel details were not recorded in the survey to maintain the privacy of the test results. The HIV and syphilis test results were distributed by trained HIV/STI counselors. The truckers were referred to the Association of Medical Doctors' of Asia (AMDA) clinic for check up and follow up visits in future.

### **Recruitment of Female Sex Workers**

In order to reach the desired sample size and to facilitate participation, the study team was mobilised along the study sites along the major highway routes in the Terai. Through previous research and ongoing HIV prevention interventions, study collaborators (i.e., outreach NGOs) have established contacts with sex workers and pimps who are known as "*dalals*" in the local language in numerous places in the proposed study area. These contacts were used for recruitment of the sex workers. Furthermore, the study team worked closely with General Welfare Pratistan (GWP), AMDA, Women Acting Together for Change (WATCH), Trinetra Nepal and other NGOs which are funded under the current USAID STI/AIDS prevention projects to provide HIV/STI prevention services to FSWs in the Terai highway districts such as, Save the Children US and CARE Nepal. A study site was set up in one location for several days and female sex workers from the area were recruited for participation. Recruitment of study participants was made independent of NGOs to avoid bias. The recruitment at each study site was continued until the desired sample size was achieved. Three to five weeks was spent at each study sites.

Fieldwork started from the Eastern cluster and the study team moved to Western cluster for recruiting female sex workers.

After witnessed oral consent was obtained in the clinical site, sex workers were administered a structured questionnaire and received a physical and speculum examination with free treatment based on the “ National STI Case Management Guidelines 2001”. They received free HIV and syphilis testing and treatment, free pre- and post-test counseling and were referred for appropriate clinical and supportive services if HIV positive. Additionally, a one-month supply of vitamins and small amount of money to cover their local transportation costs was provided to FSWs who participated in the study. Female sex workers have to travel longer distance, as the lab was fixed in one central location of each cluster. Sex workers who were not using modern forms of contraception at the time of recruitment and had menstruated more than 2 months before received treatment for STI syndromes based on the Nepal treatment protocols for pregnant women.

The field work started on August 26, 2003 and completed on November 27, 2003 as per schedule given below:

<u>Study Sites</u>	<u>Field Work Started-Completed</u>	<u>Participants Recruited</u>
Hetauda	August 26 - September 30, 2003	Truckers (400)
Itahari	August 26 - September 30, 2003	FSWs (102)
Lahan	August 26 - September 30, 2003	FSWs (88)
Narayanghat	August 26 - September 30, 2003	FSWs (75)
Butawal	August 26 - September 30, 2003	FSWs (135)
Nepalgunj	November 04 - November 27, 2003	FSWs (80)
Dhangadhi	November 04 - November 27, 2003	FSWs (60)
Mahendranagar	November 04 - November 27, 2003	FSWs (60)

## **2.4 Respondent’s Consent**

While outreach workers and study personnel in the field initially recruited the potential male and female study subjects, informed consent was obtained in private at the study site by a same-sex study nurse/interviewer and witnessed by a second same-sex member of the study team. The purpose of the study and the activities of the study were explained in simple and understandable terms. The potential participants were informed that all information and discussions will remain confidential; their participation is voluntary; they may refuse to answer any questions; and that they may leave at any time. They were also informed that their participation or non-participation would in no way affect treatment they would normally receive from the study center. Because of the social marginalization of sex workers, the high level of stigma associated with STIs in this population and high level of illiteracy of the study populations (both truckers and sex workers), the consent was a witnessed oral consent. After prospective subject gave oral consent to participate, the study staff receiving this oral consent sign and witness a statement on the consent form that declaring:

*"I have read and explained this informed consent form to the study recruit in Nepali. They have explained the study activities back to me and I am convinced they understand the activities that will occur. They have not been coerced to participate and have given their oral consent to participate in all aspects of this study".*

Potential FSWs identified in the field were provided transportation to and from the study site. For the truckers, a male health care provider, a lab assistant, and a male interviewer/counselor consisted of staff team at the study site. For the sex workers, a female nurse provided the simple health check up and the team consisted of an additional female interviewer/counselor and a lab assistant.

Same sex interviewers administered a structured questionnaire in a private room. The questionnaire consisted of socio-demographic and sexual behavior questions, such as number and type of partners and condom use with those partners.

## **2.5 HIV/STI pre- and Post-test Counseling and Follow-up**

The study participants were pre-test counseled for their HIV and syphilis test, and told how, when and where they can receive their HIV and STI results with post-test counseling. For follow-up services study participants were referred to AMDA STI clinics. These test results were distributed after one month in both Eastern and Western clusters by trained HIV/STI counselors.

Study participants had a choice to get HIV result only or Syphilis result only or both results. They were well informed during the pretest counseling about this choice.

## **2.6 Study Personnel**

**Study team:** Study consisted of a project director, research officer and two research assistants and below described field teams. Project director was responsible for overall study. Research officer assisted project director in all stages of study including preparing report, check the data brought from field, help in coding during data process, help in preparation of tables. Two research assistants was responsible for the all field activities which included preliminary visits to field sites to arrange all the logistic arrangements and room rentals for lab set up, and hiring local motivators assist project director and research officer in training the field staff, supervise the field throughout the field period, arrange for test result provision.

**Field teams:** Four research teams were formed, each consisting of one male Research Assistant (RA), one male supervisor, three male/female interviewers, one Health Assistant/ Staff Nurse, one male/female Lab Assistant, one runner and two local motivators. Field recruiters, here referred to as "motivators", and local NGO personnel who were working with the target populations also were in the field team.

**Motivators:** Motivators are the local NGO members or the local peers from the research sites. They were responsible for explaining the study to sex workers and truckers, including the procedures involved (e.g., obtaining blood and endo-cervical swab). These motivators were mobilized in the community 3 to 4 weeks prior to the study teams' arrival to allow time for questions and concerns to be raised. Different methods were used to reach and recruit potential participants, including the use of *dalal* (middlemen). Since sex is not legal in Nepal, a trusted contact point/person

such as the *dalal* was needed to reach the sex workers. These motivators were mobilised in the community after the study also to motivate them for test result collection.

**Male and Female Interviewers:** Male and female interviewers were responsible for further clarification of the study objectives and procedures and administration of the oral consent form. They interviewed participants using a structured questionnaire. Moreover interviewers provided pre-test counseling. All the study team members were given pre-test counseling training before they depart to the field.

**Health Assistant/Staff Nurse:** A health assistant (male) was responsible for the examination of the truckers for STI, and give the medication if necessary. A staff nurse (female) followed a similar procedure for the sex workers. In addition they collected endo-cervical swab from the sex workers.

**Lab Assistants:** Lab assistants were responsible for the blood drawing and storing the endo-cervicle swab samples. They properly labelled blood, and swab samples before transporting to the SACTS lab.

**Field Supervisors:** Field supervisors were responsible for overall management of the mobile team and laboratory. Their responsibilities included ensuring that study procedures were properly followed, e.g. proper administrations of the consent, appropriate handling of the specimens (labeled, stored and shipped to Kathmandu), adequate addressing of participants concerns and problems.

## **2.7 Training to the Study Personnel**

New ERA organized training to all field staff including laboratory people. New ERA designed a training schedule covering introduction to the study, administration of the questionnaire including field practice, concept of informed consent and how to get consent from study participant using the standard form developed for the study, pre-test counseling to the study participants and basic knowledge on HIV and STI.

Besides this SACTS and ICDDR'B provided a training to laboratory personnel, which included how to draw blood and endo cervical swab sample, store them properly, maintain the cold chain and send the samples to the SACTS lab in Kathmandu and ICDDR'B lab in Dhaka for testing.

## **2.8 Clinical and Laboratory Procedures**

### **Clinical Procedures**

Once the study participant was recruited he/she was thoroughly briefed about the study. Then trained enumerators took informed consent in presence of a witness. After that he/she was administered a behavioral questionnaire. He/she was given unique ID number, which number was written on the questionnaire. Study participant was given an ID card, which had the participant's ID number.

A trucker was examined by a health assistant (HA) for syndromic examination and if necessary he was examined physically for genital ulcer or urethral discharge. After

the examination he was sent to the laboratory room. In the laboratory room blood serum (7 cc) was taken from the vein of arm. Then he was sent back to HA if he required medicine as per syndromic treatment. The blood serum was separated by centrifuge. Then ID number of the study participant was written in the serum test tube. The serum was stored in the freezer and cold condition (below 0 degree centigrade) was maintained. Once a week collected samples were sent to SACTS laboratory at Kathmandu.

For the female sex worker also all above activities were done, but it was a staff nurse who examined the study participant. In addition the staff nurse collected a cervical swab specimen using a speculum from female sex workers. Endo- Cervical swab sample also was given ID number, stored in cold condition and cold-chain was maintained until it is sent to Bangladesh lab for the test of GT and CT.

### **Laboratory Methods**

The diagnosis of syphilis was made by Rapid Plasma Reagin (RPR-Omega Diagnostic, U.K.) analysis with quantification and confirmed by *Treponema Pallidum* Hemagglutination Assay (TPHA-New Market Laboratories Suffolk, U.K.). TPHA was performed on RPR non-reactive specimens to indicate past infection with syphilis. However, treatment was given to those individuals who are RPR and TPHA reactive.

HIV was detected by repeat positives of two separate enzyme linked immunoassays (ELISAs) so up to three separate tests were performed on each sample. First ELISA test (Bio Kit, S.A., Spain & Green Cross Life Science Corp., S. Korea) was performed. If the result was negative no more tests were done. If the first test result was positive second ELISA test was performed. If the second result was positive no more test was done and the test result was confirmed positive. If second test result was negative a third test was done. Final test results in this situation was: Positive if (+ve, -ve, +ve); Negative if (+ve, -ve, -ve). The proposed testing protocol is based WHO guidelines (strategy 3) and the National VCT Guidelines of Nepal developed by NCASC.

PCR was performed for the detection of *Neisseria gonorrhoeae* and *Chlamydia trachomatis* among female study participants. The specimen for this purpose was collected by endo-cervical swab placed in PCR transport media. This test was conducted in the laboratory of ICDDR'B in Dhaka. ICDDR'B laboratory was responsible for training the SACTS staff for collecting endo-cervical swab sample, storing them in proper conditions maintaining the cool chain and collecting the samples from Kathmandu and transport them to Dhaka.

### **2.9 Quality Control of Laboratory Tests**

Quality control was implemented through out the specimen collection, handling and testing. All tests were done using internal controls. These controls was recorded with all the laboratory data. A 10 percent sample of the total serum collected was submitted for quality control assurance at an independent laboratory for HIV and syphilis. The samples was selected randomly and a quality control test was performed at two- week interval by a different technician in the laboratory. The quality control

samples were given a separate code number. This assured that the person who performed quality control had no access to test results.

## **2.10 Data Processing and Analysis**

All the completed questionnaires were checked by the field supervisors for completeness, and were brought to the New ERA Kathmandu office, where they were coded and entered into computer. Errors in data entry were minimized by double entering the data. The FoxPro database program was used for data entry and data was analyzed using the SPSS package. Results from the lab tests were sent to the New ERA office and matched to the questionnaires using the unique ID numbers developed for this purpose.

## **2.11 Coordination and Monitoring**

Overall coordination of the study was carried out by New ERA. For the lab portion New ERA sub-contracted with SACTS, which was responsible for the setting up a lab in the field, the clinical part including collection and storing of the samples and their testing.

### **Field Monitoring**

There was periodic monitoring to ensure that the study was being properly conducted which included all the procedure described above. One field researcher and two senior field supervisors were responsible on a day-to-day basis to ensure that the study was implemented according to the protocol. The field supervisor and lab technician reports to the senior supervisors or the project coordinator/Senior lab researcher at Kathmandu by telephone whenever necessary. As needed New ERA coordinated with SACTS, ICDDR'B and FHI to send an appropriate person to the field to correct the problem reported. In addition, the principal investigators visited sites periodically throughout the field work. The principle investigators in conjunction other designated personnel were responsible for the overall monitoring.

## **2.12 Ethical Issues**

Nepal Health Research Council (NHRC) approved the protocol, consent forms and draft questionnaires additionally the Protection of Human Subjects Committee (PHSC) of Family Health International also provided approved for conducting the study.

Participation in the study was voluntary and subjects were free to withdraw at any time. Mid-term Withdrawal did not affect services they would normally receive from the study.

## CHAPTER 3: FEMALE SEX WORKERS

A total of 600 female sex workers (FSWs) participated in the study. Among them, 400 were recruited from four sites representing 16 districts between Jhapa in the East and Rupandehi in the Mid-West regions along the highway in the Terai, and 200 were recruited from three sites representing six districts between Kapilvastu in the West to Kanchanpur in the Far Western region. This chapter describes the characteristics and sexual behavior of the FSWs and the prevalence of condom use among them. When describing the characteristics, the two groups (FSWs in the 16 districts and 6 districts) are not compared because the characteristics of the two sub-populations are similar or not significantly different.

### 3.1 Socio-Demographic Characteristics

The FSWs who were recruited represented Terai belt of the five development regions of Nepal (Eastern, Central, Western, Mid-Western and Far-Western). Out of the 600 FSWs, in the sample nearly 8% were from Central Region and 31.7% were living in the Eastern Region (Table 1).

**Table 1: Distribution of Female Sex Workers by Development Regions**

Currently Places of Residence of Female Sex Workers	Percentage of FSWs in the sample (N=600)
Eastern Region of Nepal	31.7
Central Region of Nepal	8.5
Western Region of Nepal	26.7
Mid-Western Region of Nepal	13.2
Far Western Region of Nepal	20.0
<b>Total</b>	<b>100.0</b>

The median age of the FSWs was 26 years within a range of 13 to 50 years. Sixty percent of the FSWs were illiterate, and only one among the 600 had passed School Leaving Certificate (SLC). More than half (53%) of the FSWs were married and 36% were separated, divorced or widowed. The high rate of separation from the spouse in the context of Nepal indicates family disharmony among the FSWs. One in 10 of the FSWs were never married. Among the married ones, 47.5% were currently living with their husbands (Table 2).

Half of the FSWs had their first sexual experience at the age of 15, with the youngest being nine years old. Nearly 50% of the sample population had been in the sex trade for less than two years, indicating that new FSWs were entering the sex trade. On average, each FSW entertained 1-2 clients per day (mean = 1.5). The weekly average number of clients entertained was 3-4 persons (mean = 3.9). More than half of the FSWs reported that most of their clients were transport workers. Other most-cited types of clients were migrant workers, businessmen, rickshawallahs, policemen and industrial workers. In the sub-population of the six far western districts, the second most-cited types of clients were policemen (reported by 41% of the FSWs in the six districts). The average amount of money charged by the FSWs per client was Rs. 394.

**Table 2: Socio-Demographic Characteristics of Female Sex Workers**

<i>Demographic Characteristics</i>	<b>16 Districts N=400</b>	<b>6 Districts N=200</b>	<b>Total (22 Districts) N=600</b>
	<b>%</b>	<b>%</b>	<b>%</b>
<b>Age of Sex Workers</b>			
13-14	1.8	0.5	1.3
15-19	20.3	19.5	20.0
20-24	22.0	23.5	22.5
25-29	20.0	21.0	20.3
30-34	18.0	19.5	18.5
35-39	11.3	11.5	11.3
40-50	6.8	4.5	6.0
<b>Mean/Median Age</b>	<b>26.7/26.0</b>	<b>26.2/26.0</b>	<b>26.6/26.0</b>
<b>Education</b>			
Illiterate	60.8	59.5	60.3
Literate	14.8	7.5	12.3
Grades 1-5	15.8	19.5	17.0
Grades 6-10	8.8	13.0	10.2
SLC and above	0.0	0.5	0.2
<b>Marital Status</b>			
Married	52.3	54.5	53.0
Divorced/Separated	32.8	26.0	30.5
Widowed	4.5	8.0	5.7
Never married	10.5	11.5	10.8
<b>Sex Worker Currently Living with Husband/Male Friend</b>			
Husband	45.8	51.0	47.5
Male friend	2.0	4.0	2.7
None	52.3	45.0	49.8
<b>Age at First Sex</b>			
9-14	45.3	43.0	44.5
15-19	50.0	52.0	50.7
20-24	4.0	5.0	4.3
25-28	0.8	0.0	0.5
<b>Mean/Median Age at First Sex</b>	<b>15.1/15.0</b>	<b>15.2/15.0</b>	<b>15.1/15.0</b>
<b>Duration of Sex Work</b>			
<1 year	10.8	4.0	8.5
1-2 years	35.8	43.5	38.3
2-3 years	15.0	16.5	15.5
>3 years	38.5	36.0	37.7
<b>Mean Months</b>	<b>46.6</b>	<b>37.5</b>	<b>43.6</b>
<b>Number of Clients per Day (on the day of sexual encounter)</b>			
1	60.8	72.5	64.7
2	28.0	20.0	25.3
3 or 4	11.3	7.0	9.8
>4	0.0	0.5	0.2
<b>Mean Number of Clients</b>	<b>1.5</b>	<b>1.4</b>	<b>1.5</b>
<b>Amount Charged from Clients</b>			
<50 Rs.	8.3	3.5	6.7
50-100 Rs.	22.8	19.5	21.7
100-500 Rs.	44.3	61.5	50.0
>500 Rs.	24.8	15.5	21.7
<b>Mean Rs. Charged from Last Client</b>	<b>424.0</b>	<b>335.0</b>	<b>394.3</b>
<b>Number of Clients in the Past Week</b>			
0 client	21.0	15.5	19.2
1-2 clients	20.0	18.0	19.3
3-4 clients	22.5	25.5	23.5
5-6 clients	19.5	19.0	19.3
7-8 clients	8.3	10.0	8.8
>8 clients	8.8	12.0	9.8
<b>Mean Number of Clients in the Past Week</b>	<b>3.7</b>	<b>4.4</b>	<b>3.9</b>
	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>Types of Clients</b>			
Transport workers	58.1	46.7	54.4
Migrant workers	31.3	32.4	31.6
Rickshawallahs	27.3	22.5	25.8
Businessmen	36.2	29.7	34.1
Policemen	15.4	41.2	23.7
Industrial workers	30.7	6.6	23.0



### 3.2 Places of Sex Work

The study revealed that the FSWs moved from one place to another in the course of their work. They moved for different reasons, such as to hide their identities as sex workers and to avoid being apprehended by police during raids. Nearly half of the FSWs reported that they carried out their trade at the location where the interview was conducted. Only about a fifth (20%) said that they had been living there for four or more years. And more than a third revealed that they had carried out the trade in other places too, including India, in the past.

To determine the association between HIV/STI and the FSWs who had worked as sex workers in India, they were asked about the nature of their work there. About eight percent FSWs (or 48 out of 600) reported having worked as sex workers in Indian towns. Among them, 25% (or 12/48) had been based in Mumbai. A third of FSWs (or 16/48) of those who had worked in India reported having been coerced into going there. Nearly half of the FSWs (44%) going to India worked there for less than three months (Table 3). The median age of the FSWs to India when they went for the first time for sex was 21.5 years, with the youngest being nine years old.

**Table 3: Places of Sex Work Other Than Current Place of Residence as Reported by FSWs**

Places of Sex Work	16 Districts		6 Districts		Total (22 Districts)	
	N	%	N	%	N	%
<b>Working as a SW from the Location of Interview</b>						
Up to 12 months	118	29.5	36	18.0	154	25.7
13-24 months	102	25.5	69	34.5	171	28.5
25-36 months	62	15.5	35	17.5	97	16.2
37-48 months	33	8.3	23	11.5	56	9.3
>48 months	85	21.3	37	18.5	122	20.3
<b>Total</b>	<b>400</b>	<b>100.0</b>	<b>200</b>	<b>100.0</b>	<b>600</b>	<b>100.0</b>
<i>Mean Months</i>		<b>38.2</b>		<b>32.7</b>		<b>36.3</b>
<b>Working as an SW in Other Places in the Past Year</b>						
Yes	168	42.0	48	24.0	216	36.0
No	232	58.0	152	76.0	384	64.0
<b>Total</b>	<b>400</b>	<b>100.0</b>	<b>200</b>	<b>100.0</b>	<b>600</b>	<b>100.0</b>
<b>Sex Work in India</b>						
<b>Practiced Sex Work in India</b>						
Yes	35	8.8	13	6.5	48	8.0
No	365	91.2	187	93.5	552	92.0
<b>Total</b>	<b>400</b>	<b>100.0</b>	<b>200</b>	<b>100.0</b>	<b>600</b>	<b>100.0</b>
<b>Sex Work in Mumbai</b>						
Yes	8	22.9	4	30.8	12	25.0
No	27	77.1	9	69.2	36	75.0
<b>Total</b>	<b>35</b>	<b>100.0</b>	<b>13</b>	<b>100.0</b>	<b>48</b>	<b>100.0</b>
<b>Coerced into Going to India</b>						
Yes	11	31.4	5	38.5	16	33.3
No	24	68.6	8	61.5	32	66.7
<b>Total</b>	<b>35</b>	<b>100.0</b>	<b>13</b>	<b>100.0</b>	<b>48</b>	<b>100.0</b>
<b>Respondent's Age (First Time FSW Went to India)</b>						
9-14	3	8.6	2	15.4	5	10.4
15-19	13	37.1	2	15.4	15	31.3
20-24	7	20.0	2	15.4	9	18.8
25-29	7	20.0	4	30.8	11	22.9
30-38	5	14.3	3	23.1	8	16.7
<b>Total</b>	<b>35</b>	<b>100.0</b>	<b>13</b>	<b>100.0</b>	<b>48</b>	<b>100.0</b>
<b>Working as an SW in India</b>						
Up to 3 months	15	42.9	6	46.2	21	43.8
4-6 months	4	11.4	2	15.4	6	12.5
7-12 months	5	14.3	2	15.4	7	14.6
13-24 months	3	8.6	2	15.4	5	10.4
>24 months	8	22.9	1	7.7	9	18.8
<b>Total</b>	<b>35</b>	<b>100.0</b>	<b>13</b>	<b>100.0</b>	<b>48</b>	<b>100.0</b>

### 3.3 Condom Use Among Female Sex Workers

Reported ever use of condom with the clients among the female sex workers was 72.3%. However, about a half of FSWs (53.3%) reported the condom use in the last episode of sexual act with the client. The consistent use of condoms with the clients was only 22.7% in the past year. Nearly 70% of the FSWs admitted that they had clients who visited them on a regular basis. The pattern of condom use with them was the same as that with other clients – condom use with the last regular client was 56.5% and the consistent use of condoms with them was 27.3%.

**Table 4: Condom Use with Different Types of Clients**

Condom Use by Female Sex Workers	16 Districts		6 Districts		Total (22 Districts)	
	N	%	N	%	N	%
<b>Ever Use of Condom</b>						
Yes	291	72.8	143	71.5	434	72.3
No	109	27.2	57	28.5	166	27.7
<b>Total</b>	<b>400</b>	<b>100.0</b>	<b>200</b>	<b>100.0</b>	<b>600</b>	<b>100.0</b>
<b>Use of Condom with Last Client</b>						
Yes	220	55.0	100	50.0	320	53.3
No	180	45.0	100	50.0	280	46.7
<b>Total</b>	<b>400</b>	<b>100.0</b>	<b>200</b>	<b>100.0</b>	<b>600</b>	<b>100.0</b>
<b>Consistent Use of Condom with Client in the Past Year</b>						
Always	93	23.3	43	21.5	136	22.7
Sometimes	194	48.5	98	49.0	292	48.7
Never	113	28.3	59	29.5	172	28.7
<b>Total</b>	<b>400</b>	<b>100.0</b>	<b>200</b>	<b>100.0</b>	<b>600</b>	<b>100.0</b>
<b>Have Regular Client</b>						
Yes	271	67.8	143	71.5	414	69.0
No	129	32.2	57	28.5	186	31.0
<b>Total</b>	<b>400</b>	<b>100.0</b>	<b>200</b>	<b>100.0</b>	<b>600</b>	<b>100.0</b>
<b>Use of Condom with Regular Client During Last Sex</b>						
Yes	154	56.8	80	55.9	234	56.5
No	117	43.2	63	44.1	180	43.5
<b>Total</b>	<b>271</b>	<b>100.0</b>	<b>143</b>	<b>100.0</b>	<b>414</b>	<b>100.0</b>
<b>Consistent Use of Condom with Regular Clients in the Past Year</b>						
Always	80	29.5	33	23.1	113	27.3
Sometimes	100	36.9	64	44.8	164	39.6
Never	91	33.6	46	32.2	137	33.1
<b>Total</b>	<b>271</b>	<b>100.0</b>	<b>143</b>	<b>100.0</b>	<b>414</b>	<b>100.0</b>
<b>Sex with Husband/Male Friend in the Past 6 months</b>						
Yes	180	94.2	94	85.5	274	91.0
No	11	5.8	16	14.5	27	9.0
<b>Total</b>	<b>191</b>	<b>100.0</b>	<b>110</b>	<b>100.0</b>	<b>301</b>	<b>100.0</b>
<b>Consistent Use of Condom with Husband/Male Friend in the Past 6 months</b>						
Always	10	5.6	6	6.4	16	5.8
Sometimes	54	30.0	19	20.2	73	26.6
Never	116	64.4	69	73.4	185	67.5
<b>Total</b>	<b>180</b>	<b>100.0</b>	<b>94</b>	<b>100.0</b>	<b>274</b>	<b>100.0</b>
<b>Sex with a Person Other Than Client, Husband/Male Friend in Past Year</b>						
Yes	107	26.8	28	14.0	135	22.5
No	293	73.3	172	86.0	465	77.5
<b>Total</b>	<b>400</b>	<b>100.0</b>	<b>200</b>	<b>100.0</b>	<b>600</b>	<b>100.0</b>
<b>Consistent Use of Condom with Person Other Than Client, H/MF in Past Yr</b>						
Always	15	14.0	1	3.6	16	11.9
Sometimes	51	47.7	12	42.9	63	46.7
Never	41	38.3	15	53.6	56	41.5
<b>Total</b>	<b>107</b>	<b>100.0</b>	<b>28</b>	<b>100.0</b>	<b>135</b>	<b>100.0</b>

The percentage of FSWs who reported using condoms consistently with their husbands or cohabiting male friends is even lower. Only 5.8% (16/274) of those who had sex with their husbands/cohabiting male friends used condoms on a regular basis during the past six months. But the consistent use of condoms with occasional male friends (other than their clients, husbands/cohabiting male friends) in the past year was 11.9% (16/135). The FSWs were more likely to use condom with unknown partners than with known partners.

### 3.4 HIV/STI Prevalence Among Female Sex Workers

Among the 600 FSWs who participated in the study by providing blood and endocervical swab samples, two percent (12/600) were found to be HIV positive. It is to be noted that not a single FSW among those examined from the group of 6 districts was detected with HIV. Nine percent (54/600) of the FSWs were found to be currently infected with syphilis. There is no statistical difference in the prevalence of active syphilis between the FSWs in the group of 16 districts and the group of six districts. Altogether, 4.8% of the FSWs (29/600) had a history of syphilis. Nearly 14% of them were infected with gonorrhea and 10.2% were suffering from chlamydia. The prevalence of gonorrhea and chlamydia is significantly higher among the FSWs in the 16 districts. Similarly, the number of FSWs with any one of the STIs (syphilis, gonorrhea, chlamydia and HIV) is greater in this group. The relatively low prevalence of gonorrhea and chlamydia among the FSWs in the six districts may be one of the explanations for the zero prevalence of HIV there. Table 5 provides a detailed picture of the prevalence of HIV and the STIs for which tests were done among the FSWs taking part in the study.

**Table 5: HIV and STI Prevalence Among FSWs**

STD Infection	16 Districts	6 Districts	Total (22 Districts)
	(N=400) %	(N=200) %	(N=600) %
HIV	(12) 3.0	0.0	(12) 2.0
Active Syphilis	(37) 9.2	(17) 8.5	(54) 9.0
Syphilis History	(24) 6.0	(5) 2.5	(29) 4.8
Gonorrhea*	(72) 18.0	(9) 4.5	(81) 13.5
Chlamydia*	(49) 12.3	(12) 6.0	(61) 10.2
Any of the above STI*	(139) 34.8	(31) 15.5	(170) 28.3

Note: Figures in the parenthesis are the # of cases.

\* denotes the significant difference ( $p < .05$ ) between the values of the 16 districts and the six districts.

### 3.5 Association of HIV with Socio-Demographic, Behavioral and STI Variables

There is little association between HIV and socio-demographic or risk behavior variables such as condom use and the number of clients served per day. As can be seen in Table 6, HIV infection by the categories age, educational level and marital status differ slightly but that is not statistically significant at least at 5 percent level of significance.

**Sex Work in India and HIV:** The FSWs who have been to India for the purpose of commercial sex work had a significantly higher prevalence of HIV (12.5% or 6/48, OR=13.0, CI=4.0 to 42.0,  $p < .05$ ) than those who have not been to India. Similarly, the FSWs who have worked as sex workers in Mumbai are strongly associated with HIV (33.3% or 4/12, OR=8.5, CI = 1.3 to 54.4,  $p < .05$ ). But, no association was seen between HIV infection and variables such as condom use and the number of clients entertained in the past year (data not shown). The prevalence of HIV is significantly

higher (4.4% or 6/135) at Butwal site, which is one of the total seven sites included in the study. Although Table 6 shows that HIV is more common among the FSWs who reported having been coerced into working in India than among those who reported going voluntarily, it is not statistically significant.

**Correlation Between HIV and STI:** Nearly one-third of the FSWs (28.3%) were infected with at least one of the measured STIs. With regard to the relationship between STI and HIV, none of the STIs were associated with HIV with a significant difference at 95% confidence level. Out of the 12 HIV-positive FSWs, six had none of the measured STIs, and eight did not have a history of syphilis. Less than 2% (1.2% or 1/81) of the FSWs infected with gonorrhea and 3.3% (or 2/61) of the FSWs infected with chlamydia were found to have HIV (Table 6). The results also show that HIV is more prevalent among the FSWs suffering from active syphilis (5.5%) than those who did not have the disease (1.6%) ( $p = .05061$  at 95% significant level).

**Table 6: Relationship Between HIV and Demographic, Behavioral Variables and STIs**

Variables	Total (22 Districts)		
	N=600	HIV+	%
<b>Age</b>			
<20 years old	128	3	2.3
>= 20 years old	472	9	1.9
<b>Educational Level</b>			
Illiterate and literate with no schooling	436	10	2.3
Schooling (Grades 1 to 10 and above SLC)	164	2	1.2
<b>Marital Status</b>			
Married	535	9	1.7
Never married	65	3	4.6
<b>Years of Sex Work</b>			
<2 Years	225	4	1.8
>2 Years	375	8	2.1
<b>Sex Work in India*</b>			
Yes	48	6	12.5
No	552	6	1.1
<b>Sex Work in Mumbai (n=48)**</b>			
Worked in Mumbai	12	4	33.3
Worked in India, but not in Mumbai	36	2	5.6
<b>Coerced into Working in India (n=48)</b>			
Yes	16	3	18.8
No, went to India on one's own	32	3	9.4
<b>Study Sites</b>			
Itahari	102	3	2.9
Lahan	88	1	1.1
Narayanghat	75	2	2.7
Butwal	135	6	4.4
Nepalgunj	80	0	0
Dhangadhi	60	0	0
Mahendranagar	60	0	0
<b>Active Syphilis</b>			
Yes	54	3	5.5
No	546	9	1.6
<b>Syphilis History</b>			
Yes	29	1	3.4
No	571	11	1.9
<b>Gonorrhea</b>			
Yes	81	1	1.2
No	519	11	2.1
<b>Chlamydia</b>			
Yes	61	2	3.3
No	539	10	1.8
<b>Any of the Above STIs</b>			
Yes	164	6	3.7
No	436	6	1.4

Note: \*  $p < .05$  OR 13.0 (4.0, 42.0); \*\*  $p < .05$  OR 8.5 (1.3, 54.8)

### 3.6 Association of STIs with Socio-Demographic and Behavioral Variables

Table 7 shows that one of the measured STIs – active (or untreated) syphilis – was highly associated with the older FSWs. The prevalence of untreated syphilis among 20 years and above years old FSWs was 10.8% compared to 2.3% among the FSWs who were less than 20 years of age. This difference is significant at 95% confidence level. The prevalence of gonorrhea and chlamydia was not associated significantly with any of the demographic variables – age, marital status, education or years of sex work. Similarly, it is not related to sex work in India or Mumbai. Syphilis history is found to be associated with FSWs >20 years old (6.1%), FSWs who have been involved in the sex trade for more than two years (7.5 %) and FSWs who have worked as sex workers in Mumbai (25%).

**Table 7: Association Between STIs and Demographic and Behavioral Variables**

Variables	N	Active Syphilis		Gonorrhea		Chlamydia		Syphilis History	
		n	%	n	%	n	%	n	%
<b>Age</b>									
<20 years old	128	3	2.3	18	14.1	18	14.1	0	0
>= 20 years old	472	51	10.8*	63	13.3	43	9.1	29	6.1†
<b>Educational Level</b>									
Illiterate and literate with no schooling	436	44	10.1	54	12.4	42	9.6	19	4.4
Schooling (Grades 1 to 10 and above SLC)	164	10	6.1	27	16.5	19	11.6	10	6.1
<b>Marital Status</b>									
Ever married	535	50	9.3	71	13.3	53	9.9	29	5.4
Never married	65	4	6.2	10	15.4	8	12.3	0	0
<b>Years of Sex Work</b>									
<2 years	225	18	8.0	41	18.2	30	13.3	5	2.2
>2 years	375	36	9.6**	40	10.7	31	8.3	24	6.4‡
<b>Sex Work in India</b>									
Yes	48	9	18.8***	5	10.4	3	6.3	4	8.3
No	552	45	8.2	76	13.8	58	10.5	25	4.5
<b>Sex Work in Mumbai (n= 48)</b>									
Worked in Mumbai	12	3	25.0	1	8.3	0	0	3	25.0§
Worked in India, but not in Mumbai	36	6	16.7	4	11.1	3	8.3	1	2.8
<b>Coerced into Working in India (n= 48)</b>									
Yes	16	3	18.8	0	0	0	0	1	6.3
No, went to India on one's own	32	6	18.8	5	15.6	3	9.4	3	9.4
<b>Study Sites</b>									
Itahari	102	12	11.8	21	20.6	13	12.7	2	2.0
Lahan	88	10	11.4	6	6.8	10	11.4	5	5.7
Narayanghat	75	7	9.3	12	16.0	6	8.0	7	9.3
Butwal	135	8	5.9	33	24.4	20	14.8	10	7.4
Nepalgunj	80	10	12.5	7	8.8	7	8.8	1	1.3
Dhangadhi	60	2	3.3	2	3.3	2	3.3	3	5.0
Mahendranagar	60	5	8.3	0	0	3	5.0	1	1.7

Note: \*p < .05 OR 5.0 (1.5, 16.4); \*\*p < .05 OR 1.8 (1.0, 3.3); \*\*\*p < .05 OR 2.6 (1.1, 5.7); † p < .05, ‡ p < .05, OR 4.5 (1.6,11.9) § p < .05 OR 11.6 (1.1, 125.9)

The following factors had no significant association/correlation on HIV or other STIs.

- Ever use of condoms
- Consistent use of condoms
- Number of clients entertained
- Demographic characteristics such as marital status and educational level

### 3.7 Prevalence of STI Syndromes

There was weak association between the reported STI symptoms and the clinical diagnosis/examination. During the survey, all the FSWs were asked whether they had

any currently perceived STI symptoms. Nearly 80% (469/600) said that they were suffering from symptoms that they believed to be evidence of STIs. Seven percent of the FSWs who reported what they thought to be genital ulcers were found to be actually suffering from syphilis. Among the 469 FSWs who reported having one of the STIs, only 32.7% were clinically diagnosed to have gonorrhea, chlamydia or syphilis (Table 8). And 26% of the FSWs who were clinically diagnosed with any one of the STIs had not reported that they had it during the interview.

**Table 8: Reported STI Symptoms and Measured Clinical Diagnosis**

Reported STI Symptoms	22 Districts				
	N=600	As Shown by Physical Diagnosis During Syndromic Examination	Clinical Diagnosis		
			Gonorrhea	Chlamydia	Active Syphilis
			%	%	%
Abdominal pain	244	-	13.9	8.6	9.4
Vaginal discharge	305	-	13.1	9.5	8.2
Painful sex	254	-	11.0	9.1	9.1
Dysuria	135	-	13.3	5.2	8.9
Vaginal itching	173	-	13.3	9.2	12.1
Vaginal odor	154	-	16.2	10.4	7.8
Polyuria	117	-	14.5	9.4	7.0
Genital ulcers	43	-	7.0	14.0	6.0
Genital warts	20	-	20.0	20.0	10.0
Unusual vaginal bleeding (discharge)	26	-	19.2	15.4	3.8
Any one of the vaginal discharges	310	80 (25.8%)	8.4	13.5	9.4
No vaginal discharge	290	35 (12.1%)	9.7	13.4	11.0
Any of the above symptoms	469	-	13.4	10.0	9.8
None of the above symptoms	131	-	13.7	10.7	6.1

Note: The percentages add up to more than 100 because of multiple responses.

Among the 310 FSWs who complained of vaginal discharge, only 25.8% (80/310) were found to actually have symptoms of vaginal discharge when examined physically by a staff nurse. Moreover, vaginal discharge was detected in 12.1% (or 35/290) of the FSWs who had not reported any such symptom. Nearly half of the FSWs (21/43) who reported that they had ulcer had sought treatment. Only about a third of the FSWs with complaints such as vaginal discharge, vaginal itching, vaginal odor, vaginal bleeding or abdominal pain had sought treatment (Table 9). Almost half of the sex workers who reported symptoms of genital ulcer were treated in the past year. This is the reported symptom for which highest percentage of FSWs had sought treatment compared to other symptoms.

**Table 9: STD Symptoms and Care Seeking Behavior of Sex Workers**

Reported STI Symptoms and Care Seeking Behavior	22 Districts			
	N=600	STD Symptoms Currently	STD Symptoms in Past	Treated in Past Year
		%	%	%
Abdominal pain	244	40.7	46.3	31.7
Vaginal discharge	305	50.8	49.2	32.5
Painful sex	254	42.3	36.7	17.3
Dysuria	135	22.5	22.7	30.1
Vaginal itching	173	28.8	32.8	31.0
Vaginal odor	154	25.7	27.2	35.6
Polyuria	117	19.5	16.7	23.0
Genital ulcers	43	7.2	13.5	48.1
Genital warts	20	3.3	4.3	30.8
Unusual vaginal bleeding	26	4.3	5.7	35.3

Note: The percentages add up to more than 100 because of multiple responses.

### 3.8 Comparison of HIV and STI Prevalence with the 1999 Survey Results

This section compares the prevalence rates of HIV and STI in the 1999 and 2003 surveys. As 1999 survey had covered only 16 districts comparison was made between the 16 districts data only. It should be noted that to make such comparison possible exactly same sampling design and procedures for study participant recruitment were replicated in 2003 survey. There was no significant change in HIV prevalence in 2003 (3% or 12/400) since the 1999 survey (3.9% or 16/410) (Table 10). However, the percentage of FSWs with active syphilis has decreased from 18.8% in 1999 to 9.2% in 2003. The prevalence rates of gonorrhoea (9% in 1999) and chlamydia (9.3% in 1999) have increased slightly to 18% and 12.3% respectively.

**Table 10: HIV and STI Prevalence Rates in 1999 and 2003**

HIV/STI	16 Districts (1999) N=410	16 Districts (2003) N=400
	%	%
HIV	3.9	3.0
Active Syphilis	18.8	9.2
Gonorrhoea	9.0	18.0
Chlamydia	9.3	12.3

Table 11 below shows the comparison of the prevalence rates of HIV between 1999 and 2003 by the selected variables. There was no significant difference in the prevalence of HIV by most of the variables (Table 11). However, the HIV prevalence among unmarried FSWs in 2003 (7.1%) is slightly higher than in 1999. It is interesting to note that the prevalence rate among the FSWs who had been to India and Mumbai to work as sex workers remains 50% which is as high as in 1999.

**Table 11: Comparison of HIV Prevalence Among Selected Variables**

Variables	16 Districts (1999)			16 Districts (2003)		
	N	HIV+	%	N	HIV+	%
<b>Age</b>						
<20 years old	103	4	3.9	88	3	3.4
>20 years old	307	12	3.9	312	9	2.9
<b>Total</b>	<b>410</b>	<b>16</b>	<b>3.9</b>	<b>400</b>	<b>12</b>	<b>3.0</b>
<b>Educational Level</b>						
Illiterate and literate with no schooling	318	13	4.1	302	10	3.3
Schooling (Grades 1 to 10 and above SLC)	92	3	3.3	98	2	2.0
<b>Total</b>	<b>410</b>	<b>16</b>	<b>3.9</b>	<b>400</b>	<b>12</b>	<b>3.0</b>
<b>Marital Status</b>						
Ever married	357	15	4.2	358	9	2.5
Never married	53	1	1.9	42	3	7.1
<b>Total</b>	<b>410</b>	<b>16</b>	<b>3.9</b>	<b>400</b>	<b>12</b>	<b>3.0</b>
<b>Years of Sex Work</b>						
<2 years	189	2	1.1	148	4	2.7
>2 years	221	14	6.3	252	8	3.2
<b>Total</b>	<b>410</b>	<b>16</b>	<b>3.9</b>	<b>400</b>	<b>12</b>	<b>3.0</b>
<b>Sex Work in India</b>						
Yes	70	12	17.1	35	6	17.1
No	340	4	1.2	365	6	1.6
<b>Total</b>	<b>410</b>	<b>16</b>	<b>3.9</b>	<b>400</b>	<b>12</b>	<b>3.0</b>
<b>Sex Work in Mumbai</b>						
Worked in Mumbai	16	8	50.0	8	4	50.0
Worked in India but not in Mumbai	54	4	7.4	27	2	7.4
<b>Total</b>	<b>70</b>	<b>12</b>	<b>17.1</b>	<b>35</b>	<b>6</b>	<b>17.1</b>

## CHAPTER 4: TRUCKERS

A total of 400 truckers including *khalasis* (truck driver's helper) participated in the study. All of them were recruited from Hetauda, where a mobile lab was established to collect blood specimens and administer the questionnaire.

### 4.1 Socio-Demographic Characteristics

The median age of the truckers was 27, with their ages ranging from 17 to 59 years. The educational level of truckers was higher than those of the female sex workers (FSWs). Only about 7% were illiterate, and there were five who possessed an SLC certificate. Nearly three-quarters of the truckers were ever married and the rest were unmarried. Almost all of them were currently living with their wives (Table 12). Due to the truckers' mobile nature, they are away from their families for several days in a month. Nearly 70% of the truckers participating in the study reported that they were away from their families for 15-30 days in a month in the course of their work. Consequently, their contact with FSWs and other women was more frequent.

**Table 12: Demographic Characteristics of Truckers**

Demographic Characteristics	2003	
	N	%
<b>Age</b>		
17-19	11	2.8
20-29	234	58.5
30-39	116	29.0
40 and above	39	9.8
<b>Mean/Median Age</b>		<b>28.9/27</b>
<b>Total</b>	<b>400</b>	<b>100.0</b>
<b>Educational Level</b>		
Illiterate	26	6.5
Literate	18	4.5
1-5 class	136	34.0
6-10 class	215	53.8
SLC and above	5	1.3
<b>Total</b>	<b>400</b>	<b>100.0</b>
<b>Marital Status</b>		
Married	292	73.0
Divorced/Separated	3	0.8
Widower	1	0.3
Never married	104	26.0
<b>Total</b>	<b>400</b>	<b>100.0</b>
<b>Presently Living with Wife</b>		
Yes	288	98.6
No	4	1.4
<b>Total</b>	<b>292</b>	<b>100.0</b>
<b>Married Truckers: Days per Month Away from Family</b>		
0-7 Days	19	6.5
8-14 Days	69	23.6
15-30 Days	204	69.9
<b>Mean Days Away from Family in a Month</b>	-	16.2
<b>Total</b>	<b>292</b>	<b>100.0</b>
<b>Trucks Driven to India (N = 400)</b>	<b>30</b>	<b>7.5</b>
<b>Ever Driven Truck from Butwal to Mahendranagar</b>		
Yes	360	90.0
No	40	10.0
<b>Total</b>	<b>400</b>	<b>100.0</b>
<b>Driven Truck from Butwal to Mahendranagar in the Past Year</b>		
Yes	232	58.0
No	168	42.0
<b>Total</b>	<b>400</b>	<b>100.0</b>



**Destination of the Truckers:** Hetauda is located in the central region of Nepal and lies somewhat midway of the East to West highway. All the trucks originating from the east of Hetauda, including the neighboring parts of India across the eastern border, have to pass through Hetauda to go to Kathmandu or western Nepal. In this survey, all the truckers were asked "Have you ever driven a truck from Butwal further west to Mahendranagar?".

Butwal is the next town to the west after Narayanghat, which is the intersection from where the highway to Kathmandu branches off. Mahendranagar is situated in the far Western Terai close to the border with India. In answer to the above question, 90% of the truckers said that they had driven trucks from Butwal to Mahendranagar. Almost 58% had driven trucks to Mahendranagar in the past year (Table 12 above).

#### 4.2 Behavioral Characteristics of Truckers

Almost all the truckers (98.5%) admitted that they had had sexual intercourse with women. Moreover, 85% of them said that they had been with an FSW. Nearly half of the truckers (44%) reported having sex with FSWs in the past year. When asked about visiting sex workers in the past three months, 26% said they had sex with FSWs in the past three months. More than 10% reported having sex with their girlfriends in the past year (Table 13). Half of the truckers said that they met the FSWs outdoors (street, forest, truck, bus park, etc.), and nearly half said that they met them at indoor venues such as restaurants, *bhatti pasals* (local taverns), the homes of the FSWs, etc. The average amount of money spent on an FSW by a trucker was about Rs. 138 (about US\$ 1.85). The amounts ranged from less than Rs. 5 to Rs. 1,200. Nine truckers (5%) admitted that they had sex with the FSWs for free.

The median number of FSWs visited till date by a trucker (those who have visited FSWs) was seven. According to the truckers, the number of FSWs visited ranged from one to 200. The number of FSWs visited during nearly a third of their lifetimes (that is, up to the time of the interview from when they started doing so), was three to six. However, only about half of the truckers who had visited FSWs during the past year said they visited one to two (median = 3). Among all the truckers, 7.5% (or 30/400) had visited FSWs in India, with 26.7% (or 8/30) of them saying they had done so during the past year (Table 13).

**Table 13: Behavioral Characteristics of Truckers**

Behavioral Characteristics	2003	
	n	%
<b>Ever Had Sex with a Woman</b> (N = 400)	394	98.5
<b>Had Sex with Girlfriend in the Past Year</b> (N = 400)	51	12.8
<b>Ever Had Sex with a Female Sex Worker (FSW)</b> (N = 400)	340	85.0
<b>Had Sex with FSW in the Past Year</b> (N = 400)	176	44.0
<b>Had Sex with FSW in the Past Three Months</b> (N = 400)	104	26.0
<b>Where FSWs Encountered During the Last Sex</b>		
Indoors (hotel, diner, <i>bhatti</i> , SW's home)	82	46.6
Outdoors (street, forest, truck, bus park, etc.)	91	51.7
Others	3	1.7
<b>Total</b>	<b>176</b>	<b>100.0</b>
<b>Amount of Money Given to FSW for the Last Sex</b>		
Not paid	9	5.1
Up to Rs. 50	54	30.7
Rs. 51 to Rs. 100	54	30.7
Rs. 101 to 500	55	31.3
Rs. 501 and above	4	2.3
<b>Mean Rs. Given to FSW</b>	-	<b>138.2</b>
<b>Total</b>	<b>176</b>	<b>100.0</b>

Cont'd... Table 13

Behavioral Characteristics	2003	
	n	%
<b>Total Number of Female Sex Workers Visited in Lifetime</b>		
1-2	52	15.0
3-6	105	30.9
7-12	74	21.8
13-20	43	12.6
21-30	29	8.5
>30	37	10.9
<i>Mean/Median</i>		<b>16.0/7.0</b>
<b>Total</b>	<b>340</b>	<b>100.0</b>
<b>Number of FSWs Visited in the Past Year</b>		
1-2	86	48.9
3-6	66	37.5
7-12	17	9.7
>12	7	4.0
<i>Mean/Median</i>		<b>4.0/3.0</b>
<b>Total</b>	<b>176</b>	<b>100.0</b>
<b>Ever Had Sex with FSWs in India (N = 400)</b>	<b>30</b>	<b>7.5</b>
<b>Total Number of FSWs Visited in India in Lifetime</b>		
1	14	46.7
2-3	8	26.7
4-5	5	16.7
>5	3	10.0
<i>Mean</i>		<b>2.7</b>
<b>Total</b>	<b>30</b>	<b>100.0</b>
<b>Sex with FSWs in India in the Past Year</b>		
Yes	8	26.7
No	22	73.3
<b>Total</b>	<b>30</b>	<b>100.0</b>

### 4.3 Condom Use Among the Truckers

Table 14 shows the pattern of condom use among the truckers according to the type of their sex partners including FSWs. Nearly 60% of the truckers who admitted they ever had sex with a woman said they ever used the condom. Among those who had sex with an FSW in the past year, 84.7% reported having used a condom during the last sexual encounter. More than 70% of the truckers said they used condoms each time they visited FSWs in the past year. However, the consistent use of condoms with girlfriends was 37.3% (19/51) and with wives only 2.7%. The use of condoms by truckers who had visited FSWs in India in the past year was high, that is, 87.5% (or 7/8) during the last sex act and 75% (or 6/8) during every sex act. This indicates that the truckers tended to neglect using a condom when having sex with known (or so called trustworthy!) partners.

Table 14: Condom Use by Truckers

Condom Use		2003	
		n	%
<b>Ever Use of Condom</b>	(N = 394)	231	58.6
<b>Use of Condom with FSW During the Last Sex</b>	(N = 176)	149	84.7
<b>Consistent Condom Use with FSW in the Past Year</b>	(N = 176)	125	71.0
<b>Consistent Condom Use with Girlfriend in the Past Year</b>	(N = 51)	19	37.3
<b>Consistent Condom Use with Wife</b>	(N = 292)	8	2.7
<b>Use of Condom with FSW During the Last Sex Act in India</b>	(N = 8)	7	87.5
<b>Consistent Use of Condom with FSW in India in the Past Year</b>	(N = 8)	6	75.0

### 4.4 HIV/STI Prevalence Among Truckers

Seven truckers (1.8%) out of the 400 who participated in the study were found to be HIV positive, and 18 truckers (4.5%) had active syphilis. That is, altogether 25 truckers were found to be infected with either syphilis or HIV. The study also discovered that 26 truckers had a history of syphilis (Table 15).

**Table 15: HIV and Syphilis Prevalence Among the Truckers**

HIV/Syphilis Infection	2003	
	N=400	%
HIV	7	1.8
Active syphilis	18	4.5
Either HIV or active syphilis	25	6.3
Syphilis history	26	6.5

#### 4.5 Association of HIV with Socio-Demographic, Behavioral and STI Variables

A statistical analysis using the chi square test did not show any correlation between HIV and the other variables (Table 16). There aren't enough numbers in each cell to allow a chi square test to be done effectively. However, some inferences can be drawn by studying the table below.

**Table 16: Relationship Between HIV and Demographic, Behavioral Variables and STIs**

Variables	N	HIV+	%
<b>Age (N=400)</b>			
17-19	11	0	0
20-29	234	5	2.1
30-39	116	2	1.7
40-57	39	0	0
<b>Educational Level (N=400)</b>			
Illiterate and literate with no schooling	26	0	0
Schooling (Grade 1 to 10 and above SLC)	374	7	1.9
<b>Marital Status (N=400)</b>			
Married	296	5	1.7
Never married	104	2	1.9
<b>Ever Had Sex with a Woman (N=400)</b>			
Yes	394	7	1.8
No	6	0	0
<b>Ever Had Sex with an FSW (N=394)</b>			
Yes	340	6	1.8
No	54	1	1.9
<b>Use of Condom During Last Sex in the Past Year (N=176)</b>			
Yes	149	3	2.0
No	27	0	0
<b>Consistent Use of Condom with FSWs in the Past Year (N=176)</b>			
Yes	125	3	2.4
No	51	0	0
<b>Had Sex with FSW in India (N=340)</b>			
Yes	30	0	0
No	310	6	1.9
<b>Ever Driven Truck to Mahendranagar (N=400)</b>			
Yes	360	7	1.9
No	40	0	0
<b>Driven Truck to Mahendranagar in the Past Year (N=360)</b>			
Yes	232	4	1.7
No	128	3	2.3
<b>Ever Married Truckers: Days per Month Away from Wife (N=292)</b>			
1-14 days	88	1	1.1
15-30 days	204	4	2.0
<b>Active Syphilis (N=400)</b>			
Yes	18	0	0
No	382	7	1.8
<b>Syphilis History (N=400)</b>			
Yes	26	0	0
No	374	7	1.9

For example, all the seven HIV positive truckers were among those who had at any time driven to the far western section of the highway; married truckers who were separated from their wives for more than 15 days in a month have a higher prevalence

of HIV (2.0%) than those who were away from home for less than 15 days (1.1%) (no statistical significance). But and all the seven HIV+ truckers did not have active syphilis or a history of syphilis. There is no relationship between HIV and last condom use, consistent condom use, marital status, sex with FSW, sex with FSW in India or level of education. One trucker who did not report having sex with FSWs was found to be HIV+ while none of the *khalasis* (truck driver's helper) was detected with HIV.

#### 4.6 Association of Syphilis with Socio-Demographic and Behavioral Variables

As with HIV, there is no correlation (according to the chi square test) between syphilis and the other variables except for the "away from wife for than 15 days in a month". However, there is a connection between active syphilis and married truckers, truckers ever having sex with an FSW and truckers ever driving to the far western section of the highway. But there is no association between active syphilis and a high level of education, condom use during the last sexual encounter with an FSW, consistent use of condoms with FSWs in the past year and ever had sex with an FSW in India. The association between syphilis history and the other variables is similar to that between active syphilis and the other variables except that more married truckers had a history of syphilis (statistically significant at  $p < .5$ ) (Table 17).

**Table 17: Relationship Between Syphilis and Demographic and Behavioral Variables**

	N	Active Syphilis		Syphilis History	
		n	%	n	%
<b>Age (N=400)</b>					
17-19	11	0	0	0	0
20-29	234	10	4.3	8	3.4
30-39	116	8	6.9	11	9.5
40-57	39	0	0	0	0
<b>Educational Level (N=400)</b>					
Illiterate and literate with no schooling	26	1	3.8	2	7.7
Schooling (Grades 1 to 10 and above SLC)	274	17	6.2	24	8.8
<b>Marital Status (N=400)</b>					
Married	296	16	5.4	24	8.1*
Never married	104	2	1.9	2	1.9
<b>Ever Had Sex with a Woman (N=400)</b>					
Yes	394	18	4.6	26	6.6
No	6	0	0	0	0
<b>Ever Had Sex with an FSW (N=394)</b>					
Yes	340	18	5.3	26	7.6
No	54	0	0	0	0
<b>Use of Condom During Last Sex in the Past Year (N=176)</b>					
Yes	149	7	4.7	8	5.4
No	27	2	7.4	1	3.7
<b>Consistent Use of Condom with FSW in the Past Year (N=176)</b>					
Yes	125	7	5.6	7	5.6
No	51	2	3.9	2	3.9
<b>Had Sex with FSW in India (N=340)</b>					
Yes	30	1	3.3	1	3.3
No	310	17	5.5	25	8.1
<b>Ever Driven Truck to Mahendranagar (N=400)</b>					
Yes	360	17	4.7	26	7.2
No	40	1	2.5	0	0
<b>Driven Truck to Mahendranagar in the Past Year (N=360)</b>					
Yes	232	11	4.7	14	6.0
No	128	6	4.7	12	9.4
<b>Ever Married Truckers: Days per Month Away from Wife (N=292)</b>					
1-14 days	88	0	0	11	12.5
15-30 days	204	16	7.8	13	6.4

Note \* indicates p value < .5

#### 4.7 Prevalence of STI Syndromes

All the truckers taking part in the survey were asked if they had any currently perceived STI symptoms. Nearly 2.5% (10/400) reported that they suffered from urethral discharge, and 7% of those who complained of this thought they had genital ulcers. Ten percent of those who said that they had genital ulcers or urethral discharge were found to be suffering from active syphilis (Table 18).

**Table 18: Reported STI Symptoms and Active Syphilis**

Reported STI Syndromes	Untreated Syphilis	
	N	%
Urethral discharge	10	10.0
Genital ulcers	28	10.7

#### 4.8 Comparison of HIV and Syphilis Prevalence with the Survey of 1999

There is no significant change in the prevalence rates of HIV and syphilis among the truckers in the 1999 and 2003 surveys (Table 19).

**Table 19: HIV and Syphilis Prevalence Rate in 1999 and 2003**

HIV/STI	16 Districts (1999)	16 Districts (2003)
	N=400	N=400
	%	%
HIV	(6) 1.5	(7) 1.8
Active Syphilis	(21) 5.3	(18) 4.5

Note: Figures in the parenthesis are number of cases

## CHAPTER 5: CONCLUSIONS AND RECOMMENDATION

### 5.1 Conclusions

The findings of this study updates the HIV and syphilis prevalence among the female sex workers, who carry out the sex trades via venues such as street, restaurants, message parlour, house settlement, etc. along the 22 Terai districts of East West High Way and HIV prevalence among the truckers on East West Highway. The study found out that HIV prevalence among 600 female sex workers sampled across the 22 terai districts of the East West Highway was 2% (12 FSWs) and HIV prevalence among 400 truckers sampled in Hetauda, a crossing point for all truckers moving across the East West Highway was found to be 1.8 % (7 truckers).

#### 5.1.1 Female Sex Workers

The median age of the FSWs was 26 years with the age range 13 – 50. One-tenth (10%) of FSWs were never married. More than a third (36%) of the FSWs were divorced, separated or widowed. Nearly half of the FSWs were currently living their husbands. Illiteracy among the sex workers was 60%.

Most of the sex workers (80%) had experienced sex by the age of 16. Some had their first sex at the age of 9. Half of FSWs were in sex business for less than two years, indicating girls are entering the sex trade every year. Their clients were truckers and khalasi (helper to drivers), migrant workers, Rickshawalla, policemen businessmen and industrial workers. Mean number of clients entertained in the past week was 3.9. The average amount of money charged per client by FSWs was Rs. 400

Ever use of condom among the sex workers was 72 %; however condom use with the last client was 53% only. Only 23% of the FSWs reported to use condom every time they have sex with clients. Consistent use of condom with known sex partners (or trustworthy!) such as husband or male friend is even lower (6%).

Eight percent (48 FSWs) of the FSWs reported to have practiced sex trade in India and out of these FSWs 25% (12 FSWs) worked in Mumbai as a sex worker. One-third (33%) of those went India to work as sex worker said they were coerced to go there.

HIV prevalence among the FSWs is 2 percent (or 12 sex workers out of 600 FSWs). More than a quarter (28%) of FSWs was found to be infected with any of the measured STIs (HIV, syphilis, Gonorrhoea or Chlamydia)

The FSWs who had worked in India is associated with HIV and STIs. Half (6 FSWs) of the FSWs who were infected with HIV had practiced sex work in India and 4 FSWs of these had worked as sex worker in Mumbai. The HIV risk factor for those women who worked in India was 13 times greater, and for those who had worked in Mumbai it was 8 times greater.

Syphilis was associated with the FSWs old than 19 years old and the FSWs in the sex trade more than or equal two years. Further syphilis is associated with sex work in India.

There is a poor correlation between STD symptoms and real disease. The FSWs who self reported that they had some kind of STIs at the time examination found to be negative when tested for syphilis or GC or CT.

The factors – ever use of condoms, consistent use of condoms, number of clients entertained and demographic characteristics such as marital status and educational level - had no effect on STI prevalence

A sub-set of data from 16 districts was used to compare HIV and syphilis prevalence rate with the HIV and syphilis data of 1999 sero survey conducted in the same 16 districts. It revealed that there was no significant change in HIV prevalence in 2003 (3 % or 12/400) since the 1999 survey (3.9% or 16/410). However, the percentage of FSWs with active syphilis has decreased from 18.8% in 1999 to 9.2% in 2003. The prevalence rates of gonorrhea (9% in 1999) and chlamydia (9.3% in 1999) have increased slightly to 18% and 12.3% respectively

One significant finding of this survey is there is not a single HIV positive FSW was detected among 200 sampled FSWs in Far Western Terai section of East West Highway.

#### 5.1.2 Truckers

The median age of the truckers is 27 with their ages ranging from 17 to 59 years old. Three-quarters (73%) of the truckers were married. Most of them were literate. Almost of all the married truckers were currently living with their wives.

Almost all of the truckers had experienced sex with women. Fourty four percent of truckers reported to have sex with a FSW in the past year and 26% truckers reported to have sex with a FSW in the past three months. Mean number of FSWs visited in the past year was 4.

Reported condom use during the last encounter with a sex worker was 85% and consistent use of condom with FSW in the past year was 71%. The study showed that the truckers tended to neglect using condom when having sex with known (or trustworthy!) partners. For example, regular use of condoms with girl friend in the past year was 37% while with wives was only 2.7%

HIV prevalence is 1.8% among the truckers (7 out of 400 truckers).

About five percent of truckers found to infected with syphilis and 6.5% had past history of syphilis. A statistical analysis using the chi square test did not show any correlation between HIV and the other variables. Since there aren't enough numbers in each cell a chi square test could not be done effectively.

There is association of syphilis with married truckers. Neither there is relationship between HIV and last condom use, consistent condom use, marital status, sex with FSW, sex with FSW in India or level of education.

A comparison with 1999 sero survey data showed that there is no significant change in prevalence rates of HIV and a syphilis among the truckers in the 1999 and 2003 surveys.

## **5.2 Recommendation**

Since new girls are entering the sex trade every year, messages of safe sex and HIV/AIDS awareness campaign should be focused to that vulnerable group.

Female sex workers and truckers should continue to be targeted for HIV and STI control programs.

The ongoing syphilis control program, including rapid diagnostics and treatment should be expanded to include the gonorrhea and Chlamydia which should include periodic screening as well.

Ongoing outreach and education programs should emphasize:

- HIV/STI risk of sex work in India, especially in Mumbai
- Identification of women returning from India for additional support and services
- STI symptom recognition and improved care seeking behavior
- Condom use even among married men



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# **Annexes**

**Annex 1**  
**Female Questionnaire**



203. What is your present Marital Status?  
 1. Married  
 2. Divorced/Permanently Separated  
 3. Widow  
 4. Never Married  
 5. Others (specify) \_\_\_\_\_
204. How long have you been exchanging sexual intercourse for money or other things?  
**(If answer is less than '6 months' STOP INTERVIEW)**  
 For \_\_\_\_\_ Years \_\_\_\_\_ Months      998. Don't know      999. No answer
- 204.1 Have you exchanged sex for money or other things in the past year?  
 1. Yes      2. No **(Stop Interview)**
205. For how long have you been working as a sex worker in the current place of residence location?  
 (If less than one month code '00' if more than one month write completed month)  
 \_\_\_\_\_ months ago      998. Don't know/can't say
206. In the past one year have you worked in this profession in other locations also?  
 1. Yes      2. No **(Go to Q 206.2)**  
 ↓
- 206.1 Where did you work? *(List all the places)*
- | <u>Name of the VDC/Municipality</u> | <u>District</u> |
|-------------------------------------|-----------------|
| _____                               | _____           |
| _____                               | _____           |
- 206.2 Have you ever worked as a sex worker in India?  
 1. Yes      2. No **(Go to Q 301)**  
 ↓
- 206.2.1 Where did you work in India? *(List all the locations worked in India).*
- | <u>Name of Places</u> | <u>Name of Nearby Cities</u> |
|-----------------------|------------------------------|
| _____                 | _____                        |
- 206.2.2 How long did you exchange sex for money in India? **(Count the total number of days/months/years worked as sex worker in India)**  
 \_\_\_\_\_ Years \_\_\_\_\_ Months \_\_\_\_\_ Days
- 206.3 Were you coerced to go there or you went there on your own?  
 1. Coerced      2. On my own
- 206.3.1 How old were you when you first went to do sex work in India? \_\_\_\_ Years (completed years)
- 206.3.2 How old were you when you came back last time from India?\_\_ Years (completed years)
- 3.0 Information on Sexual Behavior**
301. How old were you when you had first sexual intercourse?  
 \_\_\_\_\_ Years old (completed years) 98. Don't know/can't recall
302. When did you have the last sexual intercourse with a client? \_\_\_\_\_ Days before **(write '0' if today)**
303. With how many people did you have sexual intercourse on that day? \_\_\_\_\_ (Number)
304. How much money (including cash equivalent of gift) was given to you by your last client?  
 1. \_\_\_\_ \_ Rs. (Cash)+ \_\_\_\_\_ Rs (Gift equivalent to Rupees). = Total Rs. \_\_\_\_\_  
 2. Others (Specify) \_\_\_\_\_
- 304.1 How many people did you have sex in the past week? \_\_\_\_\_(Number)
305. What is the occupation of the clients who frequently visit you? **(Multiple answers possible. Do not read the possible answers given below)**
- |                      |                 |                           |
|----------------------|-----------------|---------------------------|
| 1. Transport worker  | 4. Police       | 7. Rickshawala            |
| 2. Migrant worker    | 5. Solider/Army | 8. Others (specify) _____ |
| 3. Industrial worker | 6. Student      | 98. Don't know            |

306. Have you ever used a condom?  
1. Yes                      2. No (**Go to Q. 309**)
- ↓
307. Did your last client use a condom?  
1. Yes                      2. No
308. In the past year, how often did you use condoms with clients?  
All the times              (**Go to Q. 309**)  
Most of the times        (**Go to Q. 309**)  
Some times                (**Go to Q. 309**)  
Rarely                      (**Go to Q. 309**)  
Never                      (**Go to Q. 308.1**)
- 308.1 If never why? \_\_\_\_\_
309. Do you have any client who returns regularly to you?  
1. Yes                      2. No (**Go to Q. 311**)
- ↓
- 309.1 Did you use condom in the last sex with him?  
1. Yes                      2. No
310. In the past year how often did you use condoms with them (regular partners)?  
1. All the times                      4. Rarely  
2. Most of the times                5. Never  
3. Some times
311. Do you have a husband or male friend currently living with you?  
1. Yes, with husband              2. Yes, with male Friend              3. No (**Go to Q. 312**)
- 311.1 Did you have sexual intercourse with him in past six months?  
1. Yes                      2. No (**Go to Q. 312**)
- ↓
- 311.1.1 If yes, how often does he use condom while having sex with you?  
1. All the times                      4. Rarely  
2. Most of the times                5. Never  
3. Some times
312. During the past one year, have you had sexual intercourse with a person other than client, male friend/husband?  
1. Yes                      2. No (**Go to Q. 401**)
- 312.1 If yes, how often he used condom with you?  
1. All of the times                      4. Rarely  
2. Most of the times                5. Never  
3. Sometimes

**4.0 STI (Sexually Transmitted Infection)**

401. Do you currently have any of the following symptoms?

Symptoms	Yes	No
1. Pain in the lower abdomen	1	2
2. Pain during urination	1	2
3. Frequent urination	1	2
4. Pain during sex	1	2
5. Ulcer or sore in the genital area	1	2
6. Itching in or around the vagina	1	2
7. Vaginal odor or smell	1	2
8. Vaginal bleeding (unusual)	1	2
9. Discharge from the vagina	1	2
10. Genital Warts	1	2
11. Others (Specify) _____	1	2

(If answer is "No" to all in the Q. No. 401 Go to Q. 405)

402. Have you been treated for any of these symptoms?  
1. Yes                      2. No (**Go to Q. 405**)

403. Where did you go for the treatment?  
(Multiple Answers, **Do not read the possible answers given below**)
- |                   |                  |                                   |
|-------------------|------------------|-----------------------------------|
| 1. Private Clinic | 4. Health Post   | 7. Pharmacy                       |
| 2. AMDA Clinic    | 5. Health Center | 8. Self Treatment (Specify) _____ |
| 3. FPAN Clinic    | 6. Hospital      | 9. Others (Specify) _____         |

404. For which symptoms did you get treatment? Specify the treatment.

Symptoms	Treatment
1. Pain in the lower abdomen	
2. Pain during urination	
3. Frequent urination	
4. Pain during sex	
5. Ulcer or sore in the genital area	
6. Itching in or around the vagina	
7. Vaginal odor or smell	
8. Vaginal bleeding (unusual)	
9. Discharge from the vagina	
10. Genital Warts	
11. Others (Specify) _____	

405. Do you have any of the following symptoms in the past year?

Symptoms	Yes	No
1. Pain in the lower abdomen	1	2
2. Pain during urination	1	2
3. Frequent urination	1	2
4. Pain during sex	1	2
5. Ulcer or sore in the genital area	1	2
6. Itching in or around the vagina	1	2
7. Vaginal odor or smell	1	2
8. Vaginal bleeding (unusual)	1	2
9. Discharge from the vagina	1	2
10. Genital Warts	1	2
11. Others (Specify) _____	1	2

(If answer is "No" to all in Q. No. 405, Go to Q. No. 501)

406. Have you been treated for any of these symptoms in the past year?

Symptoms	Yes	No
1. Pain in the lower abdomen	1	2
2. Pain during urination	1	2
3. Frequent urination	1	2
4. Pain during sex	1	2
5. Ulcer or sore in the genital area	1	2
6. Itching in or around the vagina	1	2
7. Vaginal odor or smell	1	2
8. Vaginal bleeding (unusual)	1	2
9. Discharge from the vagina	1	2
10. Genital Warts	1	2
11. Others (Specify) _____	1	2

(If answer is "No" to all in Q. No. 406, Go to Q. No. 501)

407. Where did you go for the treatment? (**Multiple answers. Do not read the possible answers given below**).

- |                   |                  |                                   |
|-------------------|------------------|-----------------------------------|
| 1. Private Clinic | 4. Health Post   | 7. Pharmacy                       |
| 2. AMDA Clinic    | 5. Health Center | 8. Self Treatment (Specify) _____ |
| 3. FPAN Clinic    | 6. Hospital      | 9. Others (Specify) _____         |

### 5.0 Use of Injecting Drugs

501. Some people have tried injecting drugs using a syringe. Have you ever injected drugs? (**Do not count drugs injected for medical purpose or treatment of an illness**)

- |                 |  |                    |
|-----------------|--|--------------------|
| 1. Yes          |  | → (STOP INTERVIEW) |
| 2. No           |  |                    |
| 98. Don't Know  |  |                    |
| 99. No Response |  |                    |





**Annex 2**  
**Male Questionnaire**



108. What class have you passed?  
 \_\_\_\_\_ (write '0' for illiterate, '19' for the literate without attending the school, and exact number for the passed grade)
109. What is your present marital status?  
 1. Married  
 2. Divorced/Permanently Separated (**Go to Q 112**)  
 3. Widower (**Go to Q 112**)  
 4. Never Married (**Go to Q 112**)
110. Are you presently living with your wife? 1. Yes 2. No
111. What is the approximate number of days in a month that you stay away from your wife?  
 \_\_\_\_\_ days 999. I always stay with my family
112. Have you ever driven truck in Butwal-Mahendranagar section of the Mahendra highway?  
 1. Yes 2. No (**Go to Q. 114**)
113. During the past year, have you ever driven truck in Butwal-Mahendranagar section of the Mahendra highway?  
 1. Yes 2. No (**Go to Q. 114**)
- 113.1 Where and how many times did you drive truck within past one year?
- | To | Times |
|----|-------|
|    |       |
114. Have you ever driven truck to India? 1. Yes 2. No (**Go to Q 201**)
- 114.1 If Yes, which place have you driven to?  
**Name of Place** \_\_\_\_\_ **City/near by city** \_\_\_\_\_
- 114.2 When was the last time you had driven truck to India?  
 \_\_\_\_\_ Days ago \_\_\_\_\_ Months ago 96. Other (specify) \_\_\_\_\_

**2.0 Information on Sexual Behavior**

201. Have you ever had sexual intercourse with a woman before?  
 1. Yes 2. No (**Go to Q. 501**) **If answer is 'No' Probe**
202. Have you ever had sex with a sex worker?  
 1. Yes 2. No (**Go to Q 301**) **If answer is 'No' Probe**
- 202.1 Have you had sex with a sex worker in the past year?  
 1. Yes No (**Go to Q 207**)
- 202.2 During the past year, how many different FSWs did you have sexual intercourse with?  
 \_\_\_\_\_ (Number)
- 202.3 About how many sex workers have you had sex with in your life time in Nepal?  
 \_\_\_\_\_ (Number)
- 202.4 In which places in Nepal have you had sex with sex workers in the past years?  
**Name of Place** \_\_\_\_\_ **City/near by city** \_\_\_\_\_
203. How many times did you visit sex workers in the past three months? \_\_\_\_\_ Times
204. Did you use a condom when you had last sexual intercourse with a sex worker?  
 1. Yes 2. No
- 204.1 In the past year, how often did you use condom with sex worker?  
 1. Always (**Go to Q 205**)  
 2. Most of the time (**Go to Q 205**)  
 3. Sometimes (**Go to Q 205**)  
 4. Rarely (**Go to Q 205**)  
 5. Never (**Go to Q 204.1.1**)
- 204.1.1 Why did you never use condom? \_\_\_\_\_

205. Where did you find that last sex worker for sexual intercourse?  
 1. Lodge/Hotel  
 2. Eating-place (Restaurant)  
 3. *Bhatti* (Liquor shop)  
 4. On the street  
 5. In Forest  
 9. Others (specify) \_\_\_\_\_
206. How many rupees and/or other items did you pay the sex worker that time? (Ask the money spend for sexual intercourse only)  
 1. \_\_\_\_\_ Rs. (Cash)+ (Gift equivalent to Rupees) \_\_\_\_\_ Rs. = Total Rs. \_\_\_\_\_  
 2. Other (specify) \_\_\_\_\_
207. Have you ever had sex with sex workers in India?  
 1. Yes No (**Go to Q 301**)
- 207.1 Did you have sexual intercourse with sex workers in India in the past year?  
 1. Yes 2. No (**Go to Q. 301**)  
 ↓  
 207.1.1 Where?  
Name of Place City/near by city  
 \_\_\_\_\_  
 \_\_\_\_\_
- 207.1.2 When did you had the last sexual Intercourse with sex workers in India?  
 \_\_\_\_\_ Weeks ago (write '0' if the answer is less than 7 days)
- 207.1.3 About how many sex workers have you had sex with in India in your life time?  
 \_\_\_\_\_ (Numbers)
- 207.2 Did you use a condom when you had last sexual intercourse with a sex worker in India ?  
 1. Yes 2. No
- 207.2.1 In the past year, how often did you use condom with sex worker in India ?  
 1. Always 4. Rarely  
 2. Most of the time 5. Never  
 3. Sometimes

**3.0 Sexual Behavior with Others than Sex Workers**  
*(Note: Ask Q 301 to the married trucker only)*

301. When is the last time you had sex with your wife? \_\_\_\_\_ Days ago
- 301.1 How often in the past year did you use condom with wife?  
 1. Always 4. Rarely  
 2. Most of the time 5. Never  
 3. Sometimes
302. When is the last time you had sex with your girl friend?  
 \_\_\_\_\_ Days ago 96. No girl friend (**Go to Q. 401**)
- 302.1 How often in the past year did you use condom with girl friend?  
 1. Always 4. Rarely  
 2. Most of the time 5. Never  
 3. Sometimes

**4.0 STI (Sexually Transmitted Infection)**

401. Do you currently have any of the following symptoms?

Symptoms	Yes	No
1. Urethral Discharge	1	2
2. Pain During Urination	1	2
3. Burn When Urinating	1	2
4. Ulcer or Sore in the Genital Area	1	2
5. Others (Specify) _____	1	2

(If answer is "No" to all in the Q. No. 401 **Go to Q. 405**)

402. Have you been treated for any of these symptoms? 1. Yes 2. No (**Go to Q. 405**)

403. Where did you go for the treatment?  
(Multiple Answers, **Do not read the possible answers given below**)
1. Private Clinic
  2. AMDA Clinic
  3. FPAN Clinic
  4. Health Post
  5. Health Center
  6. Hospital
  7. Pharmacy
  8. Self Treatment (Specify)\_\_\_\_\_
  9. Others (Specify)\_\_\_\_\_

404. For which symptoms did you get treatment? Specify the treatment.

Symptoms	Treatment
1. Urethral Discharge	
2. Pain during urination	
3. Burn when Urinating	
4. Ulcer/sore in the genital area	
5. Others (Specify)_____	

405. Do you have any of the following symptoms in the past year?

Symptoms	Yes	No
1. Urethral Discharge	1	2
2. Pain during urination	1	2
3. Burn when Urinating	1	2
4. Ulcer/sore in the genital area	1	2
5. Others (Specify)_____	1	2

(If answer is 'No' to all in Q. No. 405 **Go to Q. 501**)

406. Did you get treatment for the symptoms cited in the past year?

Symptoms	Yes	No
1. Urethral Discharge	1	2
2. Pain during urination	1	2
3. Burn when Urinating	1	2
4. Ulcer/sore in the genital area	1	2
5. Others (Specify)_____	1	2

(If not treated in all in Q. 406 **Go to Q. 501**)

407. Where did you go for the treatment? (**Multiple answers. Do not read the possible answers given below**).

1. Private Clinic
2. AMDA Clinic
3. FPAN Clinic
4. Health Post
5. Health Center
6. Hospital
7. Pharmacy
8. Self Treatment (Specify)\_\_\_\_\_
9. Others (Specify)\_\_\_\_\_

## 5.0 Use of Injecting Drugs

501. Some people have tried injecting drugs using a syringe. Have you ever-injected drugs? (**Do not count drugs injected for medical purpose or treatment of an illness**)

1. Yes
  2. No
  98. Don't Know
  99. No Response
- (STOP INTERVIEW)

502. Are you currently injecting drugs?

1. Yes
- 2 No (STOP INTERVIEW)

503. Think about the last time you injected drugs. Did you use a needle or syringe that had previously been used by someone else?

1. Yes
2. No
98. Don't Know
99. No Response

504. Think about the time you injected drugs during the past one month. How often was it with a needle or syringe that had previously been used by someone else?

1. Every Time
2. Almost Every Time
3. Sometimes
4. Never
98. Don't Know
99. No Response

**Thank the respondent and send him to the clinician**

**Annex 3**  
**Female Clinical/Lab Checklist**

**CONFIDENTIAL**

**HIV/STI PREVALENCE STUDY In 22 Terai Highway Districts  
FHI/SACTS/New ERA - 2003**

**Clinical/Lab Checklist for (Female)**

Respondent ID Number: 

--	--	--	--	--	--

Date: 2060/\_\_\_/\_\_\_

Name of Clinician : \_\_\_\_\_

Name of Lab Technician : \_\_\_\_\_

<b>(A) Clinical Information</b>	<b>(B) Specimen collection</b>
	Yes      No
Age of respondent : _____	Pre test counseled                      1      2
Weight : _____	Cervical Swab collected                1      2
B.P. : _____	Blood Collected for HIV & Syphilis    1      2
Pulse : _____	Date & place for post-test results given 1      2
Temperature : _____	Condom given                                1      2
	Vitamins given                                1      2
	Gift given                                        1      2
	IEC materials given                        1      2

**1.0 Syndromic Treatment Information**

101. Has any of your sexual partner had urethral discharge in the past 3 months ?  
1. Yes                      2. No                      98. Don't know

102. Do you now have or have you had in the past month any of the following symptoms?

	<u>Now</u>		<u>In the Past Month</u>	
1. Pain in the lower abdomen	1. Yes	2. No	1. Yes	2. No
2. Pain during urination	1. Yes	2. No	1. Yes	2. No
3. Frequent urination	1. Yes	2. No	1. Yes	2. No
4. Pain during sex	1. Yes	2. No	1. Yes	2. No
5. Ulcer or sore in the genital area	1. Yes	2. No	1. Yes	2. No
6. Itching in or around the vagina	1. Yes	2. No	1. Yes	2. No
7. Vaginal odor or smell	1. Yes	2. No	1. Yes	2. No
8. Vaginal bleeding (unusual)	1. Yes	2. No	1. Yes	2. No
9. Discharge from the vagina	1. Yes	2. No	1. Yes	2. No
10. Genital Warts	1. Yes	2. No	1. Yes	2. No
11. Others (Specify) _____	1. Yes	2. No	1. Yes	2. No

**[If yes to any of above, give vaginal discharge syndrome treatment]**

103. Do you now have or have you had in the past month any sores or ulcer on or near your genitals ?  
1. Yes [**If yes, Refer**]                      2. No

104. Has any of your sexual partner had sore around genital areas in the past 3 months?  
1. Yes [**If yes, Refer**]                      2. No                      98. Don't know



**Annex 4**  
**Male Clinical/Lab Checklist**

**CONFIDENTIAL**

**HIV/STI PREVALENCE STUDY  
In 22 Terai Highway Districts  
FHI/SACTS/New ERA - 2003**

**Clinical/Lab Checklist for (Truckers)**

Respondent ID Number :

Date:2060/\_\_\_\_/\_\_\_\_

--	--	--	--	--	--

**Name of Clinician :** \_\_\_\_\_

Name of Lab Technician : \_\_\_\_\_

	(A) Clinical Information	(B) Specimen collection		Yes	No
	Age of respondent : _____				
	Weight : _____	Pre test counseled		1	2
	B.P. : _____	Blood Collected for HIV and syphilis		1	2
	Pulse : _____	Date & place for post- test result given			1
	2				
	Temperature : _____	Condom Given		1	2
	Blood Group : _____	Vitamins Given		1	2
	Albumin : _____	Gift Given		1	2
	Sugar : _____	IEC materials given			1
	2				

**1.0 Syndromic Treatment Information**

101. Did you have discharge from your penis or burning sensation when you urinate in the past one month?

1. Yes                      2. No

[If yes, give treatment for gonorrhoea and chlamydia]

102. Did you have sore or ulcer around your genitals in the past one month?

1. Yes                      2. No

[If yes, give time for follow-up visit]

**Annex 5**  
**Female Oral Informed Consent**

**FAMILY HEALTH INTERNATIONAL (FHI), NEPAL**  
**Oral Informed Consent to Participate in the Research (For Female Participants)**

**Research Topic:** Prevalence of HIV, other sexually transmitted infections (STI), and related risk behaviors among female sex workers and truckers in Terai highway districts of Nepal – an evaluation survey

**Principal Investigators:** Jim Ross, Ph.D.,  
Country Director  
Family Health International/Nepal  
GPO BOX 8803, Gairidhara, Kathmandu, Nepal  
Email: [ross@fhi.org.np](mailto:ross@fhi.org.np)

**Co -Principal Investigators:** Siddhartha Man Tuladhar,  
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Email: [siddhartha@newera.wlink.com.np](mailto:siddhartha@newera.wlink.com.np)

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STD/AIDS Counseling and Training Services  
New Road, Kathmandu  
Email: [lab@medan.wlink.com.np](mailto:lab@medan.wlink.com.np)

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Stephen Mills  
Associate Director, Technical  
Family Health International  
Asia Regional Office  
Bangkok, Thailand  
Email: [smills@fhibkk.org](mailto:smills@fhibkk.org)

### **Introduction**

This Consent Form provides you the information on the above mentioned research. In order to ensure that you are informed about the study and your participation in the study, you will be asked to read it or it will be read for you. You will be asked to show your agreement on whether you are willing to participate in the study or not by saying it loudly in presence of other two witnesses. The whole research work has been designed as per the norms set by Family Health International (FHI) and Nepal Health Research Council (NHRC). The ethics review committee(s) of Family Health International and the Nepal Health Research Council have approved this research. We will provide you a copy of this, if you want. This consent form might contain some words that are unfamiliar to you. Please do not hesitate to ask us if you do not understand or you have any query.

### **Rational for the Research**

You are being asked to participate in the research which aims to find out the rate of STI/HIV among the people who live and travel in the Terai districts, and what are the risk behaviors among the people that have these infections. The Ministry of Health and local groups will use the findings of this research in planning and formulating strategies to prevent such infections.

### **General Information on Research Methodology**

If you agree to participate in this research we would like to convince you that your name will not be taken in any parts of the research. We will ask you some questions and then ask you to provide blood sample and cervical swab. This will require taking a swab sample from you placing a cotton swab in the vagina. We will draw 5-6 ml blood by 10 ml disposable syringe from you. If it is determined that you have any symptoms that are consistent with an STI, we will provide treatment free of charge. The

diagnosis and treatment of this type of disease will be done on the basis of National STI Case Management Guidelines.

### **Your Role in the Research**

Your participation in the research will take about one hour. About 600 females and 400 male truckers who live or travel in the Terai districts will participate in the research.

You will be asked some questions regarding your age and education if you agree to participate in the research. We will also ask you some questions about your travel, the history of your sexual behavior and symptoms of sexually transmitted diseases and provide you counseling on HIV that causes AIDS and other sexually transmitted diseases as well. We will explain you what the laboratory (Lab.) test is and what treatment and care is available to you. We will then take your blood and cervical fluid samples.

Your name will neither be recorded on blood and cervical fluid sample nor in the questionnaire. All the questionnaire and samples will be labeled with a code number. Gonorrhoea and chlamydia trachomatis test will be done from your cervical swab sample and syphilis and HIV will be examined from blood samples. Syphilis and HIV test will be done in Kathmandu by SACTS but Gonorrhoea and chlamydia trachomatis test will be performed in ICDDR,B lab at Bangladesh. If you wish we could provide you syphilis and HIV test results about a month after the completion of the fieldwork. The research team will inform you about the right place and date for you to collect your report. You can collect these reports only by showing the card bearing the study number given to you by the study team. We will not be able to provide you the results if you do not bring your card with you. This is done to keep the test results anonymous.

### **Possible Risk and Benefits**

The risk of participating in this study is the minor discomfort due to bleeding bruising during blood drawing. Providing cervical swab sample do not put you at any risk. Since your name has not been recorded anywhere, no one will be able to know that this laboratory test report belongs to you. Some of the questions we ask might put you in trouble or make you feel uncomfortable to answer them. You are free not to answer such questions and also to withdraw yourself from participating the research process at any time you like to do so. You might feel some mental stress after getting your test results. But you will get proper counseling on HIV and STI through a qualified counselor at that time.

To talk about the benefits of this research, you will be provided with free treatment, if currently you have any STI symptoms. You will be given lab test results of syphilis and HIV and made aware of how STI/HIV is transmitted and how it can be prevented and controlled. You will also be provided with information on safe sex. The information we obtain from this research will help us plan and formulate strategies to control and prevent further spread of AIDS and other sexually transmitted diseases.

### **If You do not Give Your Consent to Participate in the Research**

You are free to decide whether to participate or not. Whatever be your decision, this will not affect in any way in the health services you have been seeking now.

### **Confidentiality**

We will do our best to deal with the information regarding you and your participation in the research as a highly confidential matter. We are not interested to know your name so it will not be recorded anywhere. A code number will be assigned to each questionnaire and sample of your blood. You will be given a card with the code number. If you want to get the results of HIV only or syphilis only or both, you can do so by showing the card to us. You are free to decide which test result do you want to collect later. We will not be able to identify you and give the report to you without the card given to you at the time of blood sample collection.

We will not record your name anywhere so your name will not be mentioned in the report of this research, if published. However, the officials of International Health Center, in rare cases, might show interest to have a look at the record of the participants of the research and court sometimes might ask to show the record of the research to others. Whatever be the case, these records will not have your name.

### **Compensation**

You will be given vitamin for one month, small gift, condom and some reading materials about HIV/AIDS and STI as compensation for your participation in the research.

### **Withdraw from Participating the Research**

You are free to withdraw yourself from participating the research process at any time you like or not to respond the questions you do not prefer to answer.

#### **Contact**

If you have any questions or queries regarding this **research** please contact the following persons/agencies:

Siddhartha Man Tuladhar  
New ERA, Kalopool, Kathmandu, Nepal  
Phone Number: 01-4413603

Jim Ross  
Family Health International (FHI),  
Gairidhara, Kathmandu,  
Phone Number: 01-4427540

Laxmi Bilas Acharya  
Family Health International (FHI),  
Gairidhara, Kathmandu,  
Phone Number: 01-4427540

If you have some problems or queries regarding **your rights** as a participant of this research please contact:

Jim Ross  
Family Health International (FHI)  
Gairidhara, Kathmandu, Nepal  
Phone Number: 01-4427540

OR

David Borasky  
Institutional Representative, Human Rights Protection Committee,  
P.O. Box. 13950,  
Research Triangle Park, North Carolina, USA  
Phone Number: 00-1-919-405-1445,  
E-mail: [dborasky@fhi.org](mailto:dborasky@fhi.org)  
OR Cable: FAME.HEALTH

If you encounter any problem just because of **your participation** in this research please contact:

Siddhartha Man Tuladhar  
New ERA  
Kalopool, Kathmandu, Nepal  
Phone No. 4413603, 4430060

OR

Asha Basnyat  
Family Health International (FHI)  
Gairidhara, Kathmandu  
Phone No. 4427540

If you need more help, we can provide you a referral where you may have to pay for the services.

## Volunteer Agreement

If you have fully understood what is being asked to you in the process of research, the person who is explaining these things to you will read the following words for you and sign on the form.

"I have read and explained the contents of this consent paper to the respondent. She explained the research activities back to me and from her understanding I am convinced that she is fully aware of the research activities. She has given her oral consent, on her own willingness, to participate in this study. No pressure was given to her to participate in the research work".

Date: \_\_\_\_\_

\_\_\_\_\_  
Signature of the person who obtained consent

I was present while reading out the benefits, risk and methods of the study for the respondent. All the questions were answered and the respondent has agreed to participate in the study.

Date: \_\_\_\_\_

\_\_\_\_\_  
Signature of the witness

**Annex 6**  
**Male Oral Informed Consent**



**FAMILY HEALTH INTERNATIONAL (FHI), NEPAL**  
**Oral Informed Consent to Participate in the Research (For Male Participants)**

**Research Topic:** Prevalence of HIV, other sexually transmitted infections (STI), and related risk behaviors among female sex workers and truckers in Terai highway districts of Nepal – an evaluation survey

**Principal Investigators:** Jim Ross, Ph.D.  
Country Director  
Family Health International/Nepal  
GPO BOX 8803, Gairidhara, Kathmandu, Nepal  
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**Co -Principal Investigators:** Siddhartha Man Tuladhar,  
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STD/AIDS Counseling and Training Services  
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Stephen Mills  
Associate Director, Technical  
Family Health International  
Asia Regional Office  
Bangkok, Thailand  
Email: [smills@fhibkk.org](mailto:smills@fhibkk.org)

### **Introduction**

This Consent Form provides you the information on the above mentioned research. In order to ensure that you are informed about the study and your participation in the study, you will be asked to read it or it will be read for you. You will be asked to show your agreement on whether you are willing to participate in the study or not by saying it loudly in presence of other two witnesses. The whole research work has been designed as per the norms set by Family Health International (FHI) and Nepal Health Research Council (NHRC). The ethics review committee(s) of Family Health International and the Nepal Health Research Council have approved this research. We will provide you a copy of this, if you want. This consent form might contain some words that are unfamiliar to you. Please do not hesitate to ask us if you do not understand or you have any query.

### **Rational for the Research**

You are being asked to participate in the research which aims to find out the rate of STI/HIV among the people who live and travel in the Terai districts, and what are the risk behaviors among the people that have these infections. The Ministry of Health and local groups will use the findings of this research in planning and formulating strategies to prevent such infections.

### **General Information on Research Methodology**

If you agree to participate in this research we would like to convince you that your name will not be taken in any parts of the research. We will ask you some questions and then ask you to provide blood sample. We will draw 5-6 ml blood by 10 ml disposable syringe from you. If it is determined that you have any symptoms that are consistent with an STI, we will provide treatment free of charge. The diagnosis and treatment of this type of disease will be done on the basis of National STI Case Management Guidelines.

## **Your Role in the Research**

Your participation in the research will take about one hour. About 600 females and 400 male truckers who live or travel in the Terai districts will participate in the research.

You will be asked some questions regarding your age and education if you agree to participate in the research. We will also ask you some questions about your travel, the history of your sexual behavior and symptoms of sexually transmitted diseases and provide you counseling on HIV that causes AIDS and other sexually transmitted diseases as well. We will explain you what the laboratory (Lab.) test is and what treatment and care is available to you. We will then take your blood sample.

Your name will neither be recorded on blood sample nor in the questionnaire. All the questionnaire and samples will be labeled with a code number. Syphilis and HIV will be examined from blood samples. Syphilis and HIV test will be done in Kathmandu by SACTS. If you wish we could provide you syphilis and HIV test results about a month after the completion of the fieldwork. The research team will inform you about the right place and date for you to collect your report. You can collect these reports only by showing the card bearing the study number given to you by the study team. We will not be able to provide you the results if you do not bring your card with you. This is done to keep the test results anonymous.

## **Possible Risk and Benefits**

The risk of participating in this study is the minor discomfort due to bleeding bruising during blood drawing. Since your name has not been recorded anywhere, no one will be able to know that this laboratory test report belongs to you. Some of the questions we ask might put you in trouble or make you feel uncomfortable to answer them. You are free not to answer such questions and also to withdraw yourself from participating the research process at any time you like to do so. You might feel some mental stress after getting your test results. But you will get proper counseling on HIV and STI through a qualified counselor at that time.

To talk about the benefits of this research, you will be provided with free treatment, if currently you have any STI symptoms. You will be given lab test results of syphilis and HIV and made aware of how STI/HIV is transmitted and how it can be prevented and controlled. You will also be provided with information on safe sex. The information we obtain from this research will help us plan and formulate strategies to control and prevent further spread of AIDS and other sexually transmitted diseases.

## **If You do not Give Your Consent to Participate in the Research**

You are free to decide whether to participate or not. Whatever be your decision, this will not affect in any way in the health services you have been seeking now.

## **Confidentiality**

We will do our best to deal with the information regarding you and your participation in the research as a highly confidential matter. We are not interested to know your name so it will not be recorded anywhere. A code number will be assigned to each questionnaire and sample of your blood. You will be given a card with the code number. If you want to get the results of HIV only or syphilis only or both, you can do so by showing the card to us. You are free to decide which test result do you want to collect later. We will not be able to identify you and give the report to you without the card given to you at the time of blood sample collection.

We will not record your name anywhere so your name will not be mentioned in the report of this research, if published. However, the officials of International Health Center, in rare cases, might show interest to have a look at the record of the participants of the research and court sometimes might ask to show the record of the research to others. Whatever be the case, these records will not have your name.

## **Compensation**

You will be given vitamin for one month, small gift, condom and some reading materials about HIV/AIDS and STI as compensation for your participation in the research.

## **Withdraw from Participating the Research**

You are free to withdraw yourself from participating the research process at any time you like or not to respond the questions you do not prefer to answer.

## Contact

If you have any questions or queries regarding this **research** please contact the following persons/agencies:

Siddhartha Man Tuladhar  
New ERA, Kalopool, Kathmandu, Nepal  
Phone Number: 01-4413603

Jim Ross  
Family Health International (FHI),  
Gairidhara, Kathmandu,  
Phone Number: 01-4427540

Laxmi Bilas Acharya  
Family Health International (FHI),  
Gairidhara, Kathmandu,  
Phone Number: 01-4427540

If you have some problems or queries regarding **your rights** as a participant of this research please contact:

Jim Ross  
Family Health International (FHI)  
Gairidhara, Kathmandu, Nepal  
Phone Number: 01-4427540

OR

David Borasky  
Institutional Representative, Human Rights Protection Committee,  
P.O. Box. 13950,  
Research Triangle Park, North Carolina, USA  
Phone Number: 00-1-919-405-1445,  
E-mail: [dborasky@fhi.org](mailto:dborasky@fhi.org)  
OR Cable: FAME.HEALTH

If you encounter any problem just because of **your participation** in this research please contact:

Siddhartha Man Tuladhar  
New ERA  
Kalopool, Kathmandu, Nepal  
Phone No. 4413603, 4430060

OR

Asha Basnyat  
Family Health International (FHI)  
Gairidhara, Kathmandu  
Phone No. 4427540

If you need more help, we can provide you a referral where you may have to pay for the services.

## Volunteer Agreement

If you have fully understood what is being asked to you in the process of research, the person who is explaining these things to you will read the following words for you and sign on the form.

"I have read and explained the contents of this consent paper to the respondent. He explained the research activities back to me and from his understanding I am convinced that he is fully aware of the research activities. He has given his oral consent, on his own willingness, to participate in this study. No pressure was given to him to participate in the research work".

Date: \_\_\_\_\_

\_\_\_\_\_  
Signature of the person who obtained consent

I was present while reading out the benefits, risk and methods of the study for the respondent. All the questions were answered and the respondent has agreed to participate in the study.

Date: \_\_\_\_\_

\_\_\_\_\_  
Signature of the witness

**Annex 7**  
**Post Test Counseling**

### Dates and Places of Counseling Performed to FSWs and Truckers

Name of Sites	Target Group	Date of Counseling	Total No. of Study Participants	Attended in Post-test Counseling		
				Participants Counseled	Participants with HIV	Participants with STIs
Hetauda	Truckers	August 26- Sept. 30, 2003	400	80	0	6
Itahari	FSWs		102	23	0	2
Lahan	FSWs		88	08	0	3
Narayanghat	FSWs		75	12	1	5
Butwal	FSWs		135	24	3	9
Nepalgunj	FSWs	Nov. 04-27, 2003	80	29	0	4
Dhangadi	FSWs		60	19	0	1
Mahendranagar	FSWs		60	25	0	3
<b>Total</b>			<b>1000</b>	<b>220</b>	<b>4</b>	<b>33</b>

Note: TPHA cases are not included in STI cases

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HIV/AIDS Prevention, Control and Care Program  
Nepal Country Office  
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E-mail: [fhinepal@fhi.org.np](mailto:fhinepal@fhi.org.np), Web: [www.fhi.org](http://www.fhi.org)