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PREVALENCE AND RISK FACTORS
ASSOCIATED WITH SEXUALLY TRANSMITTED
INFECTIONS AMONG TRANSPORT WORKERS ALONG
THE MID AND FAR WESTERN HIGHWAYS OF NEPAL



Kathmandu October 2002



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ABBREVIATIONS

AIDS: Acquired Immune Deficiency Syndrome

DRC: Development Resource Centre

FSW: Female Sex worker

GWP: General Welfare Pratisthan

HFO: Himalayan Field Office

HIV: Human Immune-deficiency Virus

ML: Migrant Labor

MLW: Migrant Labor's Wife

MSM: Men having sex with Men

SC/US: Save the Children/ US

STI: Sexually Transmitted Infection

TW: Transport Worker

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STI Prevalence Study SC/US



ACKNOWLEDGEMENT

This report includes the findings of the study on the prevalence of STI among transport workers in the mid and Far western highways and the associated risk factors. The study was carried-out with the aim of finding out prevalence of STI among TWs of the mid and far Western highways of Nepal.

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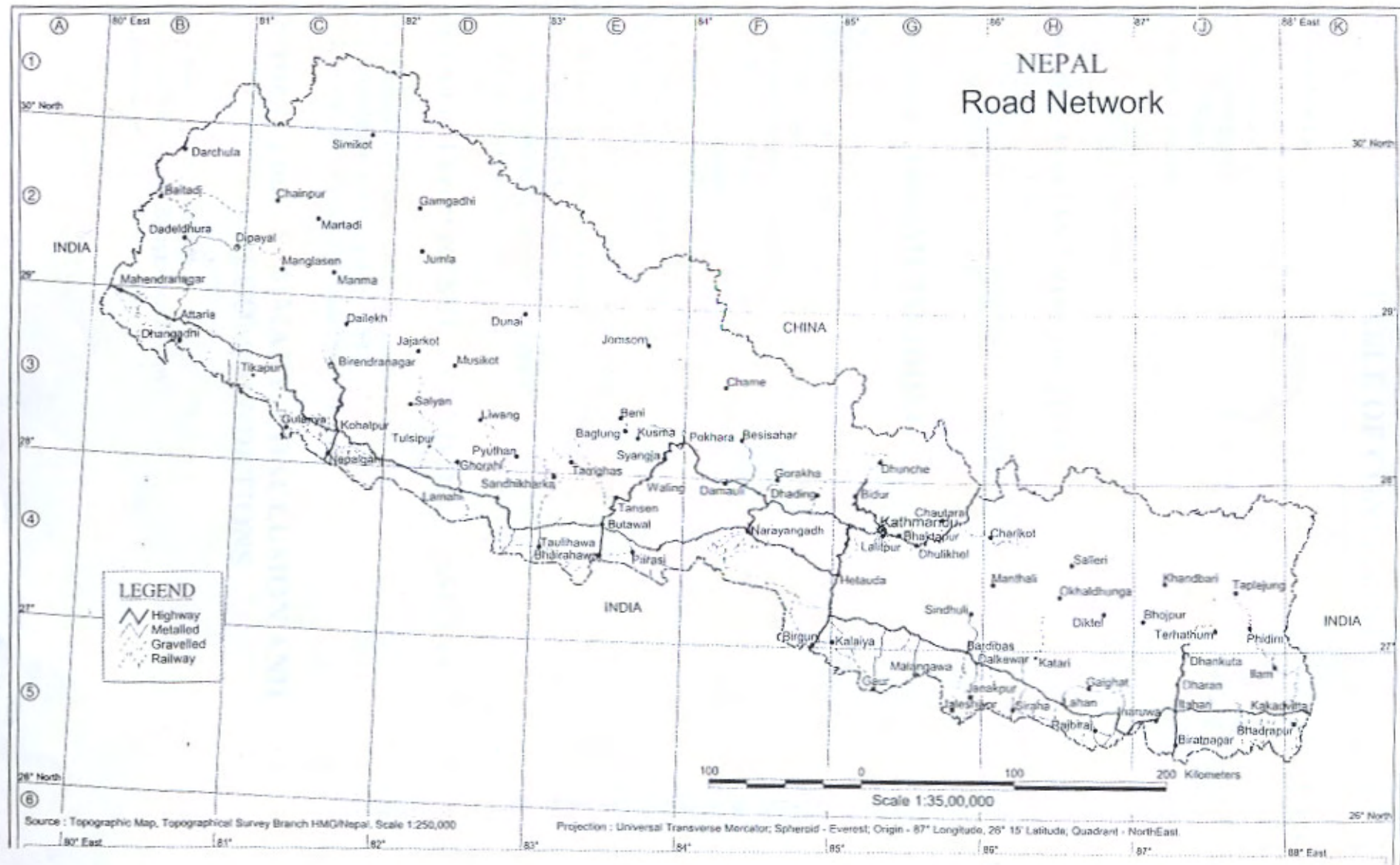


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EXECUTIVE SUMMARY

Scientific evidence has established correlations between STI and HIV/AIDS, and studies carried out in Nepal have shown a higher than average prevalence of STIs and HIV/AIDS among female sex workers (FSWs), transport workers (TWs) and drug users, compared with the rest of the population. There are about 2,200 registered vehicles, with around 7,000 TWs involved in the road transportation sector on the mid and far western highways of Nepal, yet there is a significant lack of hard data on the prevalence of STIs and the risk factors among these workers. This study therefore focuses on investigating the prevalence of STIs and the associated risk factors among the TWs who ply their vehicles along the mid and far western highways of Nepal.

The study relies mainly on primary data derived from a descriptive cross-sectional design, with clinic based serological testing and survey questionnaires. A total of 444 TWs, including 153 drivers, 88 conductors and 201 helpers were recruited for the study, drawn from Nepalgunj, Kanchanpur and Dang. The largest proportion (25%) of these worked along the Nepalgunj-Dhangadhi route, and other routes included were Butwal-Tulsipur, Nepalgunj-Surkhet and Tulsipur-Salyan, and 5.8% also drove to India.

1. Transport worker characteristics and behaviour

The sample of TWs comprised a mix of Chhetris, Brahmins, Gurung /Magar, Tharus and Dalits/Others (7.1%). Over half were married, but among the helpers, who were the youngest group, more than two thirds were unmarried. By education level, more than half of the sample had been educated to levels between class 6 and 10, and one in ten had graduated from non-formal education classes.

There were clear differences in the levels of experience of the different groups, with drivers being more experienced than helpers and conductors. It was found that on average TWs spend more than two weeks each month away from home. This level is higher among the helpers than the drivers and conductors. While away from home the TWs mainly stay at hotels or lodges at night, and many use the services of FSWs. The major overnight locations are Nepalgunj, Dhangadhi, Dang, Mahendanagar and Kathmandu. Many have also stayed in India. The helpers sleep in the vehicles to look after them.

All groups of transport workers appear to be highly sexually active, with nine out of ten reporting having ever had sex. Although about two thirds of the helpers were unmarried, and had the lowest mean age they had highest mean number of sexual partners.

2. Non-regular sexual partners and condom use

Normal values and practices proscribe a single married partner in Nepal, but nearly half of the transport workers had sexual contact other than with their wives, with the helpers being the most likely to seek extra and non-marital sex. The main sexual partners outside of marriage are FSWs, "unfamiliar partners", and girl friends.

On average, the TWs reported paying NRs.103 for a sexual encounter, with conductors paying highest amount, and the helpers the least, commensurate with their lower incomes. The fact that helpers seek cheaper sexual partners increases their vulnerability to STIs and HIV/AIDS.

All the TWs had heard of condoms, and more than three quarters reported using condoms as a means of contraception as well as for safer sex. About half reported using a condom while at having non-marital or non-cohabiting sex. The self-reported condom use rate was higher among the drivers followed by the helpers and conductors. Only a quarter of the sample reported using a condom in every sexual encounter during the last six-month period.

Condoms are reported to be easily available from traditional commercial outlets such as general shops and medical halls and outreach sources such as NGOs and peers. However, more than half said that a condom was "not necessary " or "there is no entertainment" as reasons for not using them. Non-use of condoms seems largely determined by individual values and perceptions, rather than by lack of knowledge or non-availability.

3. Modes of sexual contact

Penile-vaginal sex is the main mode of sexual contact among all the three groups of the sample. The practice of oral and anal sex was reported by well under 4% of respondents, and only a small proportion reported MSM, four times less than that in the SC/US DRC study carried out in 2002. This behaviour appeared more prevalent among the helpers and was least reported by drivers. However these self-reported behaviours may not represent the truth and may be at least partly attributed to perceived social acceptability. Thus these figures may only represent the tip of the iceberg.

Alcohol use and smoking are wide spread among the sample, and as overuse of alcohol creates an uncontrolled state of mind, this may lead to unprotected high risk-sexual behaviours.

4. Knowledge of STI and health-seeking behaviour

Ninety percent of the sampled TWs had heard of STIs, and half of them could name three or more symptoms of STI, with sores on the genitals, urethral discharge, pain on intercourse, and burning micturation being most often mentioned. The drivers demonstrated the least knowledge, which may be due to their reluctance to attend peer education sessions with the helpers and conductors, who are their juniors.

Only four in ten of the samples had sought treatment for STIs, with no difference in health-seeking behaviour among the three groups. Partner treatment was even lower, and they do not appear to consider their wives as partners. Hospitals were the main source of treatment, followed by private practitioners and health posts. NGOs and peers were quoted as the main sources of information about how to access treatment.

5. Prevalence of sexually transmitted infections and the associated risk factors

Studies have shown that TWs are a highly mobile and hard-to-reach population, and since they make up around two thirds of the total clientele of FSWs, they are considered to be a bridge population for transmission of STIs from FSWs to the general populace.

At the outreach clinics conducted by the study team, the most common self-reported symptoms of STI among the sample were genital itching, burning on urination, genital ulcers and urethral discharge. The helpers and conductors reported STI symptoms more readily than drivers. All groups were equally affected by ailments caused by lack of personal hygiene and sanitation, such as ringworm in the genitals, fungal infection and skin infections.

Overall, 5.6% of the transport workers tested positive with any STI, including *syphilis*, *gonorrhoea* and *trichomonas vaginitis*, with *syphilis* the most prevalent.

It is noteworthy that the drivers appeared more monogamous, with a reported low number of sexual partners, and less likelihood of visiting FSWs. They also reported a higher rate of condom use. In contrast to this self-reported behaviour, their STI prevalence is comparatively higher, which clearly indicates their self-reported behaviours are not the reality. STI prevalence was also higher among the helpers, and in the married TWs. It was also twice as high among those working in tempos, minibuses and jeeps. The incidence of STIs was also found to be higher among alcohol users and those who were non-literate.

Of the 25 STI cases identified, 11 reported that they had no sexual contact other than with their wives. This again shows that either they did not answer the question honestly or they obtained the disease through other modes. Condom use and knowledge of STIs appear to be protective factors against STIs, as STI prevalence was half as likely in those workers who reported using a condom in their last sexual encounter.

The following strategic responses are suggested:

- Continue and intensify awareness programs and individual counselling based on behaviour change communication education for TWs, with particular focus on drivers and helpers. TWs on minibuses, tempos and jeeps should also be included in STI and HIV/AIDS intervention programs.
- Concentrate on STI and HIV/AIDS intervention programs in and around the hotels and lodges at the major overnight locations of transport workers. The network of FSWs and transport workers should be mapped out in order to plan and implement evidence-based intervention programs.

- Build on local capacity for implementing STI and HIV/AIDS intervention programs at the NGO and government level, and promote condom distribution through the outreach programs. However, the dichotomy between commercial and outreach outlets should be maintained. It is important to also increase the acceptability of condom use, rather than only increasing its availability.
- Increase the accessibility of general health care facilities in order to create an enabling environment for STI care, and enhance the capacity of care providers and health institutions at the local level. Provision of voluntary counselling and testing is very important in the prevention of STIs and HIV/AIDS among TWs.
- Incorporate health education messages on personal hygiene and sanitation, high-risk sexual behaviours, condom use and the partner treatment in peer education programs. An easy to read and use handbook, audio and other IEC materials should be prepared and disseminated to peer educators and TWs.
- The effectiveness of the existing peer education program for TWs should be assessed and the lessons learned from this replicated in planning and implementing STI and HIV/AIDS programs in the future.

INTRODUCTION

1.1 Epidemiology of Sexually Transmitted Infections among Transport Workers

There is a lack of reliable data on the number of transport workers (TWs) in Nepal, and specifically in the Mid and Far Western Development Regions, but it is reported that about 7,000 TWs ply their vehicles in these two regions. The majority work on the buses, which is followed by trucks and tempos. According to records at the local syndicates in the regions, 1,142 buses, 606 trucks, 176 tempos, 131 tankers and 130 jeeps and mini/microbuses are registered as road transportation (GWP: 2003). (See Annex 2).

TWs are a mobile population, spending a significant portion of their time away from home. As a result, they often visit female sex workers (FSWs), who are mostly clustered around the known transport worker resting and recreation spots. Studies have shown that about three-quarters of the clients (75.8%) visiting FSWs are transport workers (New Era/FHI: 1995, SC/US RSA: 2002). TWs are thus a vulnerable group that serves as a bridge in the transmission of sexually transmitted infections (STIs) and HIV from sex workers to the general populace. A study carried out among truckers in the Eastern Terai of Nepal, shows that significant numbers of them suffer from STIs, such as *trichomonas vaginalis* (0.5%), *chlamydia trachomanatis* (0.8%), *Neisseria gonorrhoea* (2.5%) and *syphilis* (5.3%) (FHI, New Era, SACTS: 1999). In the same study, HIV infection was found in about 1.5% of the sampled truckers.

A study carried out in 2000 showed *syphilis* prevalence rates of 2.0% among women in the Bheri Zonal Hospital, Nepalgunj, and 1.3% in Mahakali Zonal Hospital, Mahendranagar. Of the 463 male patients tested for STI during 2001-2002, 4.4% had any STI, compared with 7% among the female patients during the same period (N-SARC: 2002). A similar study carried out by SC/US among women in Kailali district showed that any STI/RHI syndrome was present in 30.61%, with a past *syphilis* generating an active STI rate of 14% (SC/US 2001). These figures clearly highlight the potential risk of transmission of STIs and HIV to TWs through casual heterosexual relationships.

A recent evaluation study carried out by SC/US and Development Resource Center (DRC) among 414 transport workers, of mean age 25 years, in Banke, Bardiya, Kailali, Kanchanpur and Dang districts showed that around 62.8% were unmarried. One or more STI symptoms were reported by 12.1% of the sample. When asked about their last sexual partner, 50.3% reported that contact was with their wife, 29.1% with a friend, 16.8% with a FSW and 4% with a "strange partner". Only 60.0% reported using a condom during their last sexual encounter. About one quarter (24%) did not use a condom when having sex with non-regular partners. Compared with the general population, TWs appear to have the second highest mean number of multiple sex partners (2.19), the first being FSWs at 2.27.

In view of the lack of hard data on STIs among TWs along the western terai highways, this investigation was commissioned to determine the STI prevalence and risk factors from empirical results based on serological findings and analysis.

1.2 Objectives of the Study

- To establish the prevalence of STIs among transport workers in mid and far western terai highways
- To identify the risk factors associated with STIs among transport workers.

METHODOLOGY

2.1 Study design

A clinically based descriptive study design was used to investigate the prevalence and risk factors of STIs among TWs along the western highways of Nepal.

The study comprised three components: interview questionnaire, clinical examination and laboratory test.

2.2 Study population

The study population comprised around 7,000 transport workers who drive along the western highway from Kapilvastu to Kanchanpur and Dang, including drivers, conductors and helpers.

2.3 Study sample

From the study population, 444 transport workers were sampled, including drivers, conductors and helpers, who came to the drop-in centres in Nepalgunj, Kanchanpur, Dang and Dhanagadhi during the study period.

2.4. Sample size calculation

In the SC/US Final Evaluation Report (DRC 2002), it was found that the presence of self-reported STI symptoms among TWs was 12%. However according to the 1999 FHI report, it was 5.3% among truckers of the terai (FHI/New Era: 1999). The self-reported STI symptoms were taken into consideration in calculating the sample size as shown below:

I. Prevalence study

The sample size for estimating the population proportion within d absolute percentage points within 95% confidence is given by

$$n = \frac{Z^2 1-\alpha P(1-P)}{d^2}$$

Where:

Z = represents the number of standard errors away from mean (normal deviate if alpha equals 0.05, Z is 1.96)

P = expected prevalence of outcome: 5%

d = precision of estimate (points of true proportion): 0.02

Estimated total sample size = 444

II. Case-control design:

CI: 90%, Power: 70%, Control/Case: 3:1,

Expected frequency of exposure among control group (not using a condom during sexual relations with partners other than wife among none STI cases): 15%

OR: 3.5

Sample size: 78 control, 26 cases = total 104

2.5. Sampling framework and technique

The list of TWs working along the mid and far western highways was used as the sampling frame for the study. The sample was selected randomly from the temporary clinics established in the three study sites.

The outreach centers were selected purposively as:

Clinic 1	: Nepalgunj
Clinic 2	: Kanchanpur
Clinic 3	: Dang

A temporary clinic was set up at each of the study sites for the data collection period.

Selection of study sample

The sample of 444 transport workers from 250 buses, 163 trucks and 31 mini/microbus was selected randomly during the 15-day study period. Of these, 50 were from Dang, 163 from Kanchanpur and 231 from Nepalgunj.

Among the 7,000 TWs in the two regions, on average more than 50% are bus staff, 30% are truckers and 20% work on other modes of transport, such as minibuses, tempos, rickshaws and jeeps. The study sample was selected to correspond with these proportions, giving the following numbers:

Drivers:	155
Helpers:	201
Conductors:	88

Total:	444

2.6 Study variables

- Socio-demographic characteristics: education, age, and ethnicity
- Levels of knowledge, attitudes and practices about prevention and treatment of STI.
- Migration status
- Sexual behavior
- Prevalence of STI: *gonorrhoea*, *trichomonas*, and *syphilis* among transport workers
- Condom use

2.7 Exclusion criteria

The exclusion criteria included:

1. Unwillingness to participate in the study and have clinical history information collected in any step of the following: interview, clinical check up, blood and urethral swab test.
2. From routes other than the study area.
3. Working on the study route less than one month.
4. Taken antibiotics within the last 7 days – participants were asked to come to the clinic after seven days for the interview and check up.

2.8 Data collection instruments

Information related to socio-demographic characteristics, STIs and sexual behaviour was collected using a simple semi-structured interviewer-administered questionnaire. Questions previously used by SC/US and New Era in studying STI prevalence in Nepal were included.

In addition, a clinical checklist was used for a physical examination for STI, and laboratory results were obtained from the following tests.

Lab tests:

- TPHA and RPR : *Syphilis*
- Gram stain : *Gonorrhea*
- Wet preparation : *Trichomonas*
- ABO/RH : Blood Group

Procedure for the diagnosis of *gonorrhoeal* diseases

- The urethral opening was cleaned with a swab moistened with sterile physiological saline.
- The urethra was gently massaged from above downwards, and a sample collected with a swab. A smear was made on a microscopic slide by gently rolling the swab on the slide.
- This slide was gram- stained and intracellular gram-negative diplococci organisms were looked for as an indicator of *gonorrhoea*.

Procedure for the diagnosis of *trichomonas vaginalis*

- First stage of sample collection is as above.
- Wet preparation to detect motile *T. vaginalis* was used. A specimen was collected from the urethra using a sterile swab and then transferred to the slide.
- A drop of physiological saline was added and mixed. A cover glass was placed over the top and the sample observed under a microscope for motile trophozoites.

Procedure for the diagnosis of *syphilis*

For nonspecific antibody that reacts with cardiolipin antigen, RPR (Rapid Plasma Reagan) was used (1).

For specific treponemal antibody, which reacts with treponemal antigen, TPHA (Treponema Pallidum Haemagglutination Assay) was carried out (2).

1) Procedure for RPR

- One drop of the test specimen was placed on positive and negative controls in separate reaction circles on the disposable slide, using a sample-dispensing pipette.
- Using the reagent dropper one drop of well-mixed carbogen reagent was added.
- The test specimen and the carbogen reagent were thoroughly mixed within the circle, using a mixing stick.
- The slide was manually rotated gently and continuously, and flocculation was observed microscopically at eight minutes. The positive circles were serially diluted and positivity in the highest dilutions was noted.

2) Procedure for the diagnosis of TPHA

- " SD Bioline syphilis 3.0" Test kit was used for the TPHA test.
- The test device was removed from the foil pouch and placed on a flat dry surface.
- 10 micro liter of serum was added to the sample well with three drops of diluent.
- The presence of two colour bands (T&C) within the result window was taken as TPHA positive.
- The test result was interpreted within 5-20 minutes.

2.9 Overall Study Procedures

The following procedures were applied while at collecting the data:

1. The study took place in Nepalgunj and Kanchanpur in four clinical stations at two sites. The two study teams worked simultaneously at each site, depending on client flow. The specimens were tested at the Bheri Zonal Hospital, Nepalgunj or Mahakali Zonal Hospital, Mahendranagar, under the supervision of two STI specialist doctors. All TWs in the study area visiting the drop-in-centres were covered, whether symptomatic or asymptomatic. Volunteers initially made contact with TWs by halting their vehicles and informing them about the clinic. They asked if the TWs were willing to visit the clinic, regardless of whether or not they had symptoms, but no attempt was made to force, coerce or induce them to do so.
2. Potential study participants were informed about the study and recruited through an oral recruitment script. This included screening to decide inclusion or exclusion from the study.
3. After being assessed as eligible for inclusion in the study, potential participants were read the consent form by the enumerator and the purpose of the study was explained. After informed consent was given, the participant and enumerator signed the consent form in the study booklet, indicating that the participant had understood the purpose of the study. Consent forms were placed in an envelope and returned to the participants with survey booklets and lab specimens (Please see *Annex I* for the Consent Form).

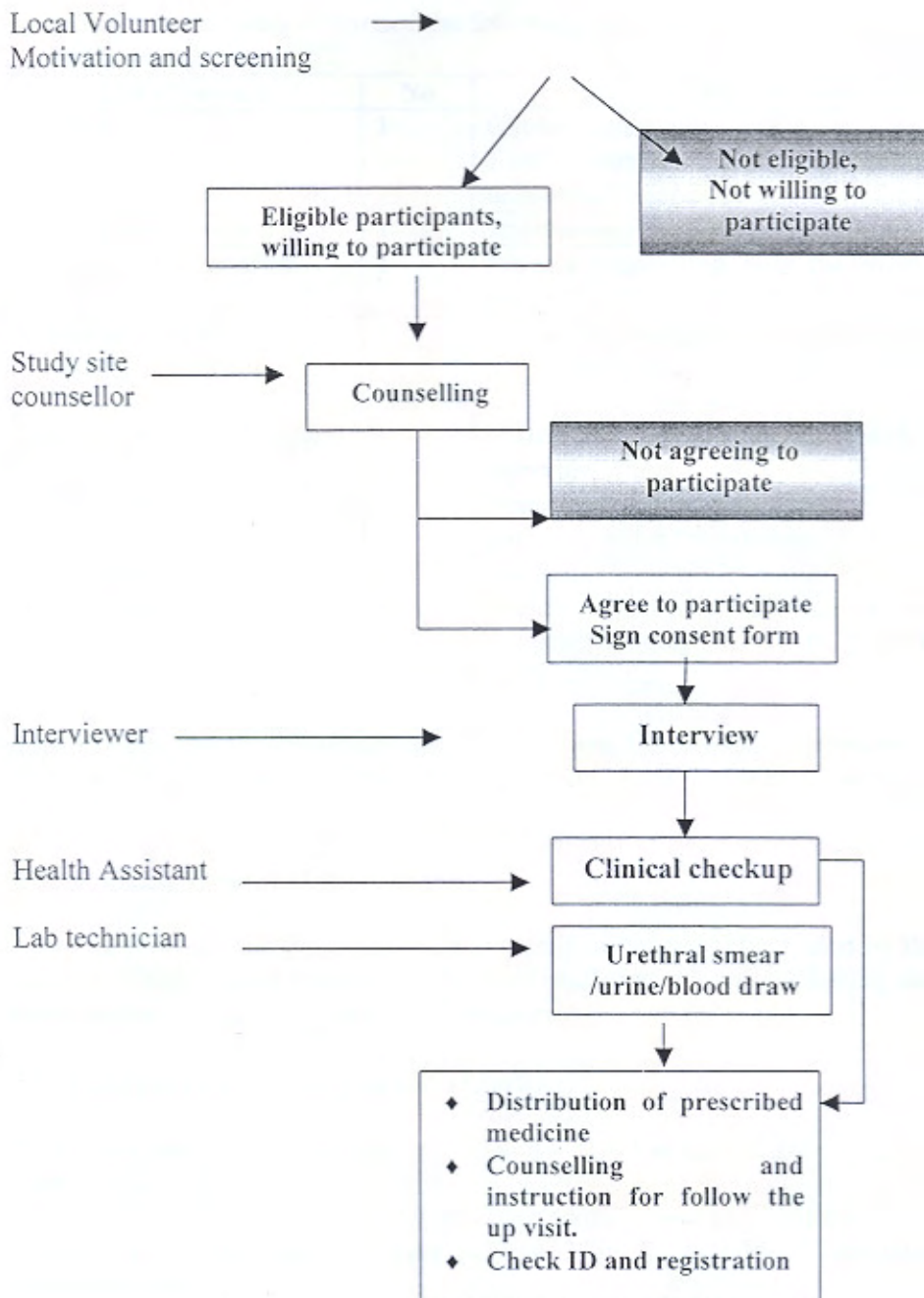
Note: TWs who did not wish to take part in the study or were excluded from the study (as long as they were from the study area), were escorted to the Health Assistant (HA) and given the option of having a clinical history taken and a clinical exam performed. They were given appropriate treatment based on national syndromic management guidelines and their prescription made at the camp by the HA, and the counsellor provided them with STI counselling. Excluded men did not have specimens taken or blood drawn.

4. Each participant was interviewed in privacy by a trained enumerator, using the survey questionnaire and recording responses in the study booklet. The study booklet was given a unique ID number for each study participant. The participant's name was not written anywhere. Only the enumerator and the participant were present in the room while this information was collected.
5. After completion of the survey questionnaire, a STI counsellor provided pre-test counselling to the study participants. Each participant took their study booklet and was escorted by a member of staff or volunteer to the examination room where privacy was ensured. There, a clinical history and the clinical examination was completed and recorded in the study booklet by a HA. As part of the clinical history, the HA asked about present complaints, performed a clinical examination and collected and mounted the specimens.

The HA prescribed treatment based on syndromic management guidelines as appropriate, and provided the participant with prescription, to be served in the camp. The prescription was also recorded in the study booklet.

6. The HA provided the participant with an individual laboratory ID number on a card (the same as the ID number on study booklet) and informed the participant of the time and place to receive laboratory results for all STIs.
7. The HA handed the study participant his specimens and study booklet and instructed him to carry these to the lab technician, escorted by staff or volunteers
8. The lab technician drew 2 cc of blood for RPR and TPHA for *syphilis*.
9. Participants with prescriptions from the HA were then escorted by a staff member or volunteer to the ANM (Auxiliary Nurse Midwife), who served the prescription written in the study booklet and advised on use of the medicine.
10. All participants were requested to return at a predetermined time and place for post-test counselling and laboratory results, to be provided by DIC staff cum counsellor. Study participants were asked for their ID card listing medication previously given based on syndromic management guidelines. Participants were provided with treatment or the treatment earlier prescribed might be modified based on lab results. Participants with STIs were encouraged to adhere to recommended treatment, to use condoms in all risky sexual encounters and to take their wives and other sexual partners for STI counselling, testing and treatment at local health facilities.

2.10 Flow chart of clinical examination



2.11 Human resource management

Each of the study teams comprised the following individuals:

List of person	No	Job description
1. HA/CMA	1	Clinical checkup, Take urethral smear, co-ordinate with lab technician to send the sample to the lab
2. Male enumerator	1	Interviewing the TWs
3. Male STI counsellor	1	Pre-test counselling, help the enumerator with the interview
4. Lab technicians	1	Lab work: blood draw, store and send samples to the recommended hospital lab (blood, swab), check for the quality control
5. Auxiliary Nurse Midwife	2	Distribution of medicine, help with counseling and interview
6. Local volunteer	2	Manage and facilitate the work in the site, bring participants for the interview and lab test,
7. Team Managers (From Kathmandu)	2	Co-ordinate all work on site Supervise and help with quality control of sample collection, storage transporting mechanism and lab test procedure,

In addition to the above-mentioned team members, two medical doctors were involved in the field and a study advisor and two researchers were involved from the DRC Office in Kathmandu.

2.12 Training/Orientation

A one-day orientation program was conducted in the field, facilitated by the researchers on behalf of DRC. Every member of the field staff was covered including simulation of their roles, responsibilities and working procedures.

2.13 Data processing, analysis and reporting

Data entry, processing and analysis were done in Epi-Info statistical software at the DRC Kathmandu Office.

To examine the distribution of variables individually and to reveal the basic structure of the findings, descriptive statistics were calculated (mean, proportion, standard deviation, Chi-square and odds ratio).

2.14 Ethical considerations

The study team maintained strict confidentiality of the findings. Social and cultural values of the research participants were respected. In addition, due attention was given to safeguarding the privacy of participants at the clinic. Ethical clearance of the protocol was given from the Nepal Health Research Council, Kathmandu.

Section: Three

RESULTS AND DISCUSSIONS

The assessment is based on primary data obtained from serological tests, clinical examinations and semi-structured interviews among 444 transport workers. The study was conducted in four different locations of the mid and far western development regions of Nepal. This chapter provides information on: socio-demographic characteristics, STI prevalence, knowledge and practices with respect to STI (STI transmission and its prevention), sexual behaviour and condom use among transport workers, and factors associated with the STI.

3.1 Transport worker characteristics and behaviour

This chapter provides a STI risk assessment of TWs on the mid and far western highways. The specific risk factors of concern are the characteristics of the transport workers, their living arrangements, sexual behaviour and condom use.

3.1.1 Distribution of transport workers by district and type of work

Table 1 shows the transport workers by district, type of work and type of transport.

Of the total 444 TWs included in the analysis, 231 were from Nepalgunj, 163 from Kanchanpur and 50 from Dang. In total, 250 (56.3%) were bus staff, 163 (36.7%) were truckers, and 31 (7%) were microbus/jeep staff. The majority were helpers or *khalansi* (45.3%) followed by drivers or *guru jee* (34.9%) and conductors (19.8%).

Table1: Distribution of study population by type of transport and type of work in study districts

Variables	District			Total	
	Dang No. (%)	Kanchanpur No. (%)	Nepalgunj No. (%)	No.	(Col. %)
Type of transport					
Bus	9 (18)	107(65.6)	134 (58.0)	250	(56.3)
Truck	39 (78)	34 (20.9)	90 (39.0)	163	(36.7)
Microbus/ Tempo/jeep	2 (4.0)	22 (13.5)	7 (3.0)	31	(7.0)
Type of work (job)					
Driver	28 (56.0)	56 (34.4)	71 (30.7)	155	(34.9)
Helper	19 (38.0)	77 (47.2)	105 (45.5)	201	(45.3)
Conductor	3 (6.0)	30 (18.4)	55 (23.8)	88	(19.8)
Total	50	163	231	444	(100)

3.1.2 Socio-demographic characteristics of the study population

Table 2: Distribution of the study population by socio-demographic characteristics

Variables	Type of work			Total No (%)
	Driver No (%)	Helper No (%)	Conductor No (%)	
Ethnicity				
Brahmin	35 (22.6)	36 (17.9)	22 (15.0)	93 (20.9)
Chhetri/Thakuri	50 (32.3)	57 (28.4)	38 (43.2)	145 (32.7)
Gurung/Magar	31 (20.0)	34 (16.9)	14 (15.9)	79 (17.8)
Newar	11 (7.1)	7 (3.5)	5 (5.7)	23 (5.2)
Tharu	19 (12.3)	48 (23.9)	5 (5.7)	72 (16.2)
Dalit/other	9 (5.8)	19 (9.5)	4 (4.5)	32 (7.2)
Marital status				
Married	120 (77.4)	76 (37.8)	57 (64.8)	253 (57.0)
Unmarried	35 (22.6)	125 (62.2)	31 (35.2)	191 (43.0)
Education				
Non-literate	9 (5.8)	19 (9.5)	1 (1.1)	29 (6.5)
Non-formal class	18 (11.6)	20 (10.0)	2 (2.3)	40 (9.0)
1-5 grade	39 (25.2)	60 (29.9)	12 (13.6)	111 (25.0)
6-10 grade	82 (52.9)	99 (49.3)	60 (68.2)	241 (54.3)
>10 grade	7 (4.5)	3 (1.5)	13 (14.8)	23 (5.2)
Age (yrs)				
Mean	28.110	21.368	24.102	
SD	6.925	4.856	5.505	
Age range	17- 48	15- 50	15- 39	

Table 2 shows the socio-demographic characteristics of the sample TWs. It can be seen that the majority were Chhetri (32.7%) followed by Brahmin (20.9%), Gurung/Magar (17.8%), Tharu (16.2%) and Dalit (7.2%). The ethnic Brahmin, Gurung/Magar and Newar are more likely to work as drivers, whereas the Chhetri were mostly conductors, and Tharu and Dalit were helpers.

It appears that among the married TWs, there is a tendency to have fewer sexual partners than among those who are unmarried. In total 253 (57%) of the sample were married and 191 (43%) were unmarried. A high proportion of the helpers were unmarried (62.2%), whereas the majority of the drivers (77.4%) and conductors (64.8%) were married.

The helpers were the youngest, with mean age 21 years. The mean ages of the drivers and conductors were 28 and 24 years respectively.

More than half of the TWs (54.3%) had been educated to a level between grades 6 and 10. One quarter of them had completed between grades 1 and 5. For the rest, 40 (9%) had received non-formal education, and 29 (6.5%) were non-literate.

Table 3: Distribution of study population by duration of total work and driving in east-west highway

Variables	Driver	Type of work	
		Helper	Conductor
Total duration of job			
Months Mean	100.148	37.323	53.989
SD	70.495	32.61	44.-418
Range	2 – 300	1- 240	2-276
Total period of driving in east-west highway			
Months Mean	87.862	34.470	48.261
SD	67.453	28.943	42.702
Range	2-300	1-200	2-276
Total	50	163	231

Table 3 shows the duration of the sample TWs' involvement in the transportation sector. The drivers had the highest level of experience, with a mean of 100 months, followed by the conductors with 54 months mean. Helpers were the most junior, with a mean of 37 months experience. The levels of experience specifically on the east-west highway show the same pattern, with drivers again having highest level, at 87.8 months followed by the conductors (48.2 months) and helpers (34.4 months)

3.1.3 Mobility and living arrangements (night halts)

The majority of the TWs reported currently working along the route from Nepalgunj to Dhanaghati (25 %), followed by Butwal to Dang/Tulsipur (15.6 %), Nepalgunj to Surkhet (13 %) and Tulsipur to Salyan (6.1%). A significant proportion of them also travelled from the Terai highways to India (5.8%). (Please see *Annex 3* for the major transportation routes of the TWs).

Table 4 shows the living arrangements of the transport workers when they are away from home.

Table 4: Distribution of study population by living behaviour during work time

Variables	Driver No (%)	Type of work		Total No (%)
		Helper No (%)	Conductor No (%)	
Living outside home/month				
Days in month Mean	12.787	16.627	12.773	14.52
SD	7.439	9.417	7.200	8.551
Living place while out of home				
Hotel	111 (71.6)	33 (16.4)	61(69.3)	205(46.2)
Hiring/rent	21(13.5)	10(5.0)	12(13.6)	43 (9.7)
Sleeping in vehicle	21 (13.5)	157(78.1)	15(17.0)	193(43.5)
Male friend's house	2 (1.3)	1 (0.5)	0 (0.0)	3 (0.7)
Total	50	163	231	444

It appears that the helpers spend highest amount of time away from home - 16.6 days a month on average, compared with the drivers and conductors, who average about 12 days a month away. The RSA study showed that on average, drivers stay away from the family for two weeks in a month (SC/US: 2002). Hotels are the most commonly used overnight

accommodation, reported by 46.2% of the sample. Breaking this down by occupational group, the drivers (71.6%) and conductors (69.3%) more often use the hotels, whereas helpers are more likely to sleep in the vehicles, reported as the second most common overnight place (by 43.5% of the sample). Only one in ten transport workers reported spending nights in a rented room. These findings confirm those of the RSA study, which shows lodges or hotels as the main contact place (46%) for men wanting to have sex with FSWs. The TWs appear to view hotels as the most usual place to make contact with a FSW.

Table 5: Major night halting spots of the transport workers

S.No.	Halting spots	No. Of Transport workers	Percentage
1	Nepalgunj	105	23.6
2	Dhangadhi	80	18.0
3	Dang	59	13.2
4	Kathmandu	48	10.8
5	Mahendranagar	46	10.3
6	Surkhet	42	9.4
7	East from Butwal	21	4.7
8	Butwal	14	3.1
9	Chisapani	14	3.1
10	Baitadi	9	2.0
11	Doti	9	2.0
12	Achham/Saphebagar	9	2.0
13	Salyan	9	2.0
14	Kohalpur	8	1.8
15	Dadeldhura	6	1.3
16	Gularia	5	1.1
17	Dhankhola	4	0.9
18	Pokhara	4	0.9
19	Sallibazar	3	0.7
20	Tikapur	2	0.4
21	Others**	16	3.6

** *Kanpur(India), Rolpa, Lalpur, Naya gaon etc.*

Note: The figures are based on the multiple answers

Table 5 shows the major resting and overnight places used by the sample TWs. There are over thirty commonly used places, but it can be seen that the major ones, in order of popularity, are Nepalgunj (cited by 23.6% of the sample), Dhangadhi (18.0%), Dang (13.2%), Kathmandu (10.8%), Mahendranagar (10.3%) and Surkhet (9.4%).

3.1.4 Condom use and sexual behaviour

Table 6 gives information on sexual behaviour and condom use among the sample. Nine in ten of the respondents reported that they knew how to use condom. More than three quarters (78.4%) had ever used condoms.

Table 6: Condom use and sexual behavior among transport workers

Variables	Type of work			Total No (%)	Chi2 P-value
	Driver No (%)	Helper No (%)	Conductor No (%)		
Know to use condom					
Yes	145 (93.5)	174 (87.9)	83 (94.3)	402 (91.2)	0.089
No	10 (6.5)	24 (12.1)	5 (5.7)	39 (8.8)	
Ever use condom					
Yes	123 (81.5)	118 (73.8)	64 (82.1)	305 (78.4)	0.174
No	28 (18.5)	42 (26.3)	14 (17.9)	84 (21.6)	
Ever have had sex					
Yes	151 (97.4)	160 (79.6)	78 (88.6)	389 (87.6)	0.000
No	4 (2.6)	41 (20.4)	10 (11.4)	55 (12.4)	
Last sexual partner					
Wife	06 (70.2)	60 (37.5)	48 (61.5)	214 (55.0)	0.299
Girl friend	24 (15.9)	57 (35.6)	19 (24.4)	100 (25.7)	
Sex worker	11 (7.3)	23 (14.4)	5 (6.4)	39 (10.0)	
Unknown person	9 (6.0)	17 (10.6)	6 (7.7)	32 (8.2)	
Others	1 (0.7)	3 (1.9)	0 (0.0)	4 (1.0)	
Condom use in last sex					
Yes	41 (62.1)	53 (58.9)	20 (58.8)	114 (60.0)	0.299
No	25 (37.9)	37 (41.1)	14 (41.2)	76 (40.0)	

Overall, around nine out of ten transport workers have had sex. Drivers (97.4%) and conductors (88.6%) appear to be more sexually active. Although a substantial number of the helpers are unmarried (62.2%) and aged below 21 years, nearly 80% have had sexual intercourse. On the whole about 45 % of the sample had non-marital, non-cohabiting sex, which is less than the 77% shown by the RSA study, 2002. Helpers more often reported having non-marital and pre-marital sexual relationships (62.5%), compared with the drivers (29.8%) and conductors (39.5%) The last sexual partners were said to be girl friends (25.7%), sex workers (10.0%) and unfamiliar persons (8.2%). The helpers reported visiting FSWs more (14.4%) than the drivers (7.3%) and conductors (6.4%).

The self-reported overall condom use rate in the last sexual encounter is 60%, and is least among the conductors (58.8%). The reasons given for not using a condom were "condom was not necessary" (55%) and "not available at the spur of the moment" (21.6%). One in ten of the transport workers were of the view that condom interferes with their satisfaction. Mutual trust, use of contraceptives by the partner, menopause and desire for a child were other reasons given for the non-use of condoms. See table 7 for details.

Table: 7 Reasons for not using condoms in the last sexual encounter

Variables	Type of work			Total No (%)	P value
	Driver No (%)	Helper No (%)	Conductor No (%)		
The reason for not using condom					
Not available	15 (18.1)	24 (26.4)	9 (18.8)	48 (21.6)	0.665
No agreement	2 (2.4)	2 (2.2)	1 (2.1)	5 (2.3)	
No entertainment	5 (6.0)	13 (14.3)	6 (12.5)	24 (10.8)	
Not necessary	57 (68.7)	36 (39.6)	29 (60.4)	122 (55.0)	
Not available in need	1 (1.2)	3 (3.3)	0 (0.0)	4 (1.8)	
Don't know	4 (4.8)	18 (19.8)	3 (6.3)	25 (11.3)	

3.1.5 Non-regular sex partners and condom use

Traditional values and practices in Nepal strictly proscribe premarital sexual activities of any kind. Arranged marriage and a single partner are considered the norm. TWs emerge as the population with the second highest mean number of sexual partner (2.19), the first being FSWs(2.27) (SC/US/DRC:2002)

Table: 8 Sexual contact other than with wife in last six months

Variables	Type of work			Total No (%)	P-value
	Driver No (%) N=151	Helper No (%) N=160	Conductor No (%) N=78		
Sexual contact with other than wife					
Yes	66 (43.7)	90 (56.3)	34 (43.6)	190 (48.8)	0.050
No	85 (56.3)	70 (43.8)	44 (65.4)	199 (51.2)	
Condom use with other than wife	28 (62.2)	55 (55.0)	16 (53.3)	99(56.6)	0.342
Number of sex partner					
1 person	43 (65.2)	40 (44.4)	19 (55.9)	102 (53.7)	0.909
2 person	11 (16.7)	28 (31.1)	10 (29.4)	49 (25.8)	
More than 2	12 (18.2)	22 (24.4)	5 (14.7)	39 (20.5)	
Mean number of sex partner	1.72 (1-6)	2.067 (1-6)	1.79 (1-5)	1.86	
Consistent condom use					
Always	23 (30.7)	23 (24.5)	7 (20.6)	53 (26.1)	
Usually	16 (21.3)	23 (24.5)	14 (41.2)	53 (26.1)	
Sometime	21 (28.0)	26 (27.7)	10 (29.4)	57 (28.1)	
Never	15 (20.0)	22 (23.4)	3 (8.8)	40 (19.7)	
Pay for partner					
Yes	42 (56.0)	53 (65.4)	24 (70.0)	119 (58.6)	
No	33 (44.0)	41 (43.6)	10 (29.4)	84 (41.4)	
Mean amount to pay	111.0(25-500)	69.52 (25-200)	126 (45-500)	103.17	

When asked the question, "Did you have any sexual partner other than your wife in the last six months?" nearly half of the sample replied "yes". Extra and pre marital sex appears to be much higher among the helpers (56.3%). (Table 8) The prevalence of condom use while at having sex other than with wife appears to be lower (56.6%) than the over all condom use (60%). Drivers appear more likely to use condoms than helpers and conductors, but the difference is statistically insignificant. Similarly drivers are more likely to remain

monogamous (65.2%) while helpers are the most sexually active group, with 24.4% having more than two sexual partners in the past six months. The rates for the drivers and conductors are 18.2% and 14.7 % respectively. The mean number of sexual partner is highest among the helpers (2.067) followed by the conductors (1.79) and drivers (1.72). The most sexually active TWs had six partners in the last three months.

With regard to consistency of use of condoms, only one quarter of the sample reported always using a condom in the past six-month period. A similar proportion reported using a condom "usually" or "sometimes". They know the consequences of unprotected sex, but they are of the opinion that they have to use condom only if the woman is a regular sex worker.

Expenses incurred for a sex partner

Six out of ten TWs reported paying money to their sexual partners in the last six months. This varied from Rs.45 to Rs.500 for their most recent sexual encounters, and averaged overall Rs.103. The RSA study conducted in 2002 calculated the mean amount paid by a client to an FSW to be Rs.157.

On average conductors reported paying the most (Rs.126), followed by the drivers (Rs.111) and the helpers the least (Rs.69.52), as shown in **Table 8**. The helpers tend to seek cheaper sexual partners because of their lower level of income compared to the drivers and conductors.

3.1.6 Modes of sexual contact

Table 9 indicates the different modes of sexual contacts prevalent among the TWs sampled. Almost all reported that penile–vaginal sex is the main mode of their sexual intercourse. Masturbation was reported by about 15.7%, and oral and anal sex by well under 4%. Men having sex with men (MSM) was reported by only a very small number (0.8 %). This is interesting as it differs significantly from the 16.2% reported in the previous evaluation study conducted by DRC on behalf of SC/US among 382 transport workers in the districts of Banke, Bardia, Kailali, Kanchanpur and Dang (SC/US: 2002)

Table 9: Modes of sexual contact among transport workers

Modes of sexual contact	Type of work			Total No (%) N=389
	Driver No (%) N=151	Helper No (%) N=160	Conductor No (%) N=78	
Penile-Vaginal	150 (99.3)	159 (99.4)	78 (100)	387 (99.5)
Masturbation	24 (15.9)	24 (15.0)	13 (16.7)	61 (15.7)
Oral	1 (0.7)	11 (6.9)	2 (2.6)	14 (3.6)
Anal	2 (1.3)	4 (2.5)	2 (2.6)	8 (2.1)
MSM	0 (0.0)	2 (1.3)	1 (1.3)	3 (0.8)

3.1.7 Smoking and alcohol use

As shown in Table 10, drinking alcohol is widespread among the TWs, especially the drivers. However, the majority said they drink occasionally (53.9%) or 2-3 times a week (28%). Excessive drinking correlates with an uncontrolled state of mind, which can lead to high-risk sexual behaviour. The helpers appear to drink less often than the other groups, which may be the result of their lower income levels, or their youth, or both.

Table: 10 Smoking and alcohol use among transport workers

Variables	Type of work			Total No (%)
	Driver No (%)	Helper No (%)	Conductor No (%)	
Alcohol drinking				
Yes	113 (72.9)	114 (56.7)	55 (62.5)	282 (63.5)
No	42 (27.1)	87 (43.3)	33 (37.5)	162 (36.5)
Frequency of drinking				
Everyday	28 (24.8)	16 (14.0)	7 (12.7)	51 (18.8)
2-3 times a week	33 (29.2)	26 (22.8)	20 (36.4)	79 (28.0)
Occasionally	52 (46.0)	72 (63.2)	28 (50.0)	152 (53.9)
Smoking habit				
Yes	81(52.3)	112(55.7)	42(47.7)	235 (52.9)
No	74 (47.7)	89 (44.3)	46 (52.3)	209 (47.1)

More than half of the TWs smoke. Although there is no established evidence of a correlation between smoking and STI, it is however, considered that it increases susceptibility to infections and disease.

3.2 Knowledge and behaviour with respect to STI

This chapter assesses the TWs' knowledge about STIs, condom use, and treatment seeking and what level of skills and attitudes they have developed to help them avoid high-risk behaviour.

3.2.1 Knowledge about STIs

TWs were asked whether they had ever heard of STI, and what they knew about preventive measures. Overall, they demonstrated high levels of knowledge, as nine out of ten had heard of STI ($P=4.78$). The helpers were the least well informed, as only 87% of them had heard of STI, as shown in Table 11. In the SC/US final evaluation study (SC/US/DRC: 2002), the proportion of the TWs who had ever heard STIs was higher, at 97.1%.

The term STI is interpreted with different local meanings, such as "infections spread by careless sexual contact", "infections through multiple sex partners", "infection transmitted from women to men", "infection of sexual organs", "*syphilis*", "*bhring*"i, "disease in private parts".

A little over half of the respondents were able to quote three or more symptoms of STI, compared with 87.9% in 2002 (ibid: 2002). Knowledge levels were lowest among the drivers (50.0%), compared with conductors (61.9%) and helpers (53.1%). This may be due to reluctance of drivers to attend peer education classes at the drop-in centers with the conductors and helpers, because of their seniority and status.

Table: 11 Perceived knowledge on sexually transmitted infections (STI) among transport workers

Variables	Type of work			Total No (%)	P- value
	Driver No (%)	Helper No (%)	Conductor No (%)		
Ever heard of STI					
Yes	140 (90.3)	175 (87.1)	84 (95.5)	399 (89.9)	4.78
No	15 (9.7)	26 (12.9)	4 (4.5)	45 (10.1)	0.091
STI symptoms stated					
Urethral discharge	84 (60.0)	111 (63.4)	64 (76.2)	259 (64.9)	0.041
Burning urination	43 (30.7)	63 (36.0)	31 (36.9)	137 (34.3)	0.528
Sore in genitalia	88 (62.9)	116(66.3)	56 (66.7)	260 (65.2)	0.775
Enlargement of groin/gland	27 (19.3)	42 (24.0)	19 (22.6)	88 (22.1)	0.598
Itching					
Pain in intercourse	64 (45.7)	75 (42.9)	42 (50.0)	181 (45.4)	0.554
Don't know	16 (11.4)	22 (12.6)	14 (16.7)	52 (13.0)	0.514
	21 (15.0)	18 (10.3)	4 (4.8)	43 (10.8)	0.054
Articulated 3 or more STI symptoms					
	70 (50.0)	93 (53.1)	52 (61.9)	215 (53.9)	

Respondents named sores in the genitalia (65.2%), urethral discharge (64.9 %), itching (45.4%), burning urination (34.3%)and enlargement of groins/glands as symptoms of STI. A few also reported pain in intercourse (13%). Loss of weight (10 persons), fever (16 persons), headache (5), cough (3) and pain in abdomen (2) were also mentioned. The findings are similar to the RSA findings, which show urethral discharge (50%) and pain in urination (20%) as the two main symptoms of STI perceived by the respondents.

3.2.2 Perceived treatment seeking during STIs

Health service utilization by the general populace in Nepal is comparatively low, and the RSA study showed that only 39% of the males who did not have STI symptoms had demonstrated health-seeking behaviour. In this study, in answer to the question, "Where do your friends go for the treatment if they suffer from illness?" about three quarters of the TWs said the hospital. A little more than one third (35.3%) mentioned the doctor as a treatment provider. Very few reported NGOs (13.5%), health workers (7.8%) and outreach clinics (3.3%) for the treatment of STIs.

When asked about their own treatment-seeking behaviour, based on the clinical history, 40% of the drivers, conductors and helpers each replied that they had consulted a treatment provider. Studies have shown that drivers do not think of wives as partners, and do not think their wives are the cause of STI problems (RSA: 2002). There is no doubt that this perception increases the vulnerability of TWs' wives whose husbands have multiple sex partners, since the TWs will not take precautions to protect their wives. Communication about partner treatment was reported by only about 14% of the transport workers.

Table: 12 Perceived care- seeking place during sexually transmitted infections among transport workers

Variables	Type of work			Total No (%)
	Driver No (%)	Helper No (%)	Conductor No (%)	
Care seeking place				
Hospital	99 (70.7)	135 (77.1)	65 (77.4)	299 (74.9)
Doctor	52 (37.1)	54 (30.9)	35 (41.7)	141 (35.3)
Medical hall	33 (23.6)	56 (32.0)	29 (34.5)	118 (29.6)
Health post	28 (20.0)	48 (27.4)	21 (25.0)	97 (24.3)
NGO	18 (12.9)	28 (16.0)	8 (9.5)	54 (13.5)
Health workers	10 (7.1)	17 (9.7)	4 (4.8)	31 (7.8)
Mobile clinic	7 (5.0)	4 (2.3)	2 (2.4)	13 (3.3)
Traditional healer	2 (1.4)	2 (1.1)	1 (1.2)	5 (1.3)

Table 13 shows TWs' knowledge about complications from untreated STIs. It indicates that about three quarters of them believe that death will occur, and nearly half of them (47.6%) said HIV/AIDS infection occurs. They also feared that loss of the sexual organ might result.

Table: 13 Perception about the complication of the STI if not treated on time and sources of information

Variables	Type of work			Total No (%)
	Driver No (%)	Helper No (%)	Conductor No (%)	
Perceived complications				
HIV/AIDS	61 (43.6)	85 (48.6)	44 (52.4)	190 (47.6)
Deaths	108 (77.1)	128 (73.1)	64 (76.2)	300 (75.2)
Loss of organ	18 (12.9)	19 (10.9)	11 (13.1)	48 (12.0)
Infertility	1	2	1	4 (2.3)
Sources of information				
Friends	66 (47.1)	85 (48.6)	33 (39.3)	184 (46.1)
Wife	6(4.3)	0 (0.0)	3 (3.6)	9 (2.3)
Radio	32 (22.9)	41 (23.4)	24 (28.6)	97 (24.3)
Television	27 (19.3)	19 (10.9)	10 (11.9)	56 (14.0)
News paper	20 (14.3)	25 (14.3)	19 (22.6)	64 (16.0)
NGOs	79 (56.4)	89 (50.9)	51 (60.7)	219 (54.9)

The TWs sampled said they get most of their information about STIs from NGOs (54.9%) and friends (46.1%). Radio, television and newspapers were also mentioned as sources of information, as well as street shows, schools, medical halls and sex partners (10%).

3.2.3 Knowledge about the condom and its uses

Almost all respondents were well informed about condoms, and about 90% of them know how to use one. The perceived reasons for condom use are to protect from STIs (76.4%) and HIV/AIDS (63.5%) and as a contraceptive (40.8%).

Traditional commercial outlets were quoted by TWs as their main sources of condoms. More than three quarters of them mentioned general shops (78.8%), and about half said medical halls (49.2%). Out reach sources such as NGOs (32%) and peer educators (7.3%) were also mentioned, and other sources, such as friends and petrol pumps were reported by 9.2% of respondents.

Condoms were said to be easily available by most respondents, at a mean distance of ten minutes travel. This correlates with the RSA study, which showed that in Pokhara, Baglung, Palpa and Kapilbastu areas condoms were available at a distance of 9.26 minutes. The ESPHIN II final evaluation showed that condoms are available at a mean distance of 12 minutes. Thus it is clear that condoms are widely and easily available.

Table: 14 Knowledge on condom and its uses among transport workers

Variables	Type of work			Total No (%)	Chi2 P- value
	Driver No (%)	Helper No (%)	Conductor No (%)		
Ever heard of condom					
Yes	155 (100)	198 (98.5)	88 (100)	441 (99.3)	0.000
No	00 (0.0)	3 (1.5)	00 (0.0)	3 (0.7)	
Perceived use condom					
Prevent HIV/AIDS	94 (60.6)	124 (62.6)	62 (70.5)	280 (63.5)	0.294
Prevent from all STI	120 (77.4)	146 (73.7)	71 (80.7)	337 (76.4)	0.414
Family planning	71 (45.8)	67 (33.8)	42 (47.7)	180 (40.8)	0.025
Entertainment	00 (0.0)	3 (1.5)	1 (1.1)	4 (0.9)	0.319
Don't know	00 (0.0)	9 (4.5)	2 (2.3)	11 (2.5)	0.024
Source of condom					
Hospital	59 (38.1)	92 (46.5)	37 (42.0)	188 (42.6)	
General shop	127 (81.9)	151 (76.3)	69 (78.4)	347 (78.7)	
Peer educator	12 (7.7)	15 (7.6)	5 (5.7)	32 (7.3)	
Health personnel	00 (0.0)	9 (4.5)	7 (8.0)	16 (3.6)	
Medical hall	86 (55.5)	85 (42.9)	46 (52.3)	217 (49.2)	
NGOs	45 (29.0)	63 (31.8)	33 (37.5)	141 (32.0)	
Don't know	00(0.0)	3 (1.5)	1 (1.1)	4 (0.9)	
Mean distance in minutes	10.316	11.798	8.852	10.3	

3.3 Prevalence of Sexually Transmitted Infection (STI)

This section reviews the findings from the clinical examination, clinical history and the serological testing. The first part presents the frequency distribution of STI based on the clinical history, clinical examination and pathological findings. The second part deals with the risk factors associated with the STI prevalence.

3.3.1 Prevalence of STI according to history and clinical examination

Almost half (47%) of the sample TWs reported any STI symptom during the last 6 months (see **table 15**). The symptoms most commonly reported were: genital itching (27%), burning micturation (16.9%), genital ulcer (9.9%) and urethral discharge (4.5%). A few also reported pain during intercourse (2.7%), swelling of inguinal gland (2%), scrotal swelling (0.54%) and genital warts (0.27%), although these signs and symptoms may not confirm the presence of STI. It is noteworthy that only 40% of the TWs who had suffered from any of these symptoms had sought treatment. Even more significantly, only 14% had communicated with their partners and sought treatment for them (**Table 15**). This has serious implications for the spread of STI.

Table: 15 STI symptoms self-reported by the transport workers

Variables	Type of work			Total No (%)
	Driver No (%)	Helper No (%)	Conductor No (%)	
Symptoms of STI				
Burning micturation	27 (17.7)	33 (16.4)	15 (17.0)	75 (16.9)
Swelling of inguinal gland	1 (0.6)	6 (3.0)	2 (2.3)	9 (2.0)
Genital ulcer	13 (8.4)	20 (10.0)	11 (12.5)	44 (9.9)
Urethral discharge	6 (3.9)	11 (5.5)	3 (3.4)	20 (4.5)
Pain during intercourse	3(1.9)	4 (2.0)	5 (5.7)	12 (2.7)
Genital itching	35 (22.6)	60 (29.9)	25 (28.4)	120 (27.0)
None	93 (60.0)	99 (49.3)	45(51.1)	237 (53.4)
Seek treatment for STI				
Yes	26 (41.9)	40(39.2)	17(39.5)	83 (40.1)
No	36 (58.1)	62 (60.8)	26 (60.5)	124 (59.9)
Treatment seeking for partner				
Yes	9 (14.5)	11 (10.8)	9 (20.9)	29 (14.0)
No	53 (85.5)	91 (89.2)	34 (79.1)	178 (86.0)

Table 16 shows the findings regarding STI related signs and symptoms from the clinical examination. One fifth (20.7%) of the TWs were found to have ringworm infection on the genitals. Other symptoms found included skin infection of the genitalia (14%), genital ulcers (8.8%), fungal infection (5.2%), urethral discharge (3.6%), and scrotal infection (2%). Genital wart was also found among few respondents (0.7%) and 10.4 % complained of burning urination during the study period. The findings revealed that the proportion of STI signs is similar among drivers, conductors and helpers and the differences are statistically insignificant.

Table: 16 STI sign and symptoms identified from the clinical examination

Variables	Type of work			Total No (%)	Chi2 P-value
	Driver No (%) N=155	Helper No (%) N=201	Conductor No (%) N=88		
Findings on examination					
Genital ulcer	13 (8.4)	19 (9.5)	7 (8.0)	39 (8.8)	0.896
Enlarge inguinal	0 (0.0)	2 (1.0)	1 (1.1)	3 (0.7)	0.440
Urethral discharge	5 (3.2)	8 (4.0)	3 (3.4)	16 (3.6)	0.925
Infection genitalia	21 (13.5)	29 (14.4)	12 (13.6)	62 (14.0)	0.967
Ringworm in genitalia	10 (14.5)	21 (23.1)	9 (27.3)	40 (20.7)	0.206
Fungal infection	7 (10.1)	3 (3.3)	0 (0.0)	10 (5.2)	*
C/O Burning urination	13 (8.4)	21 (10.4)	12 (13.6)	46 (10.4)	0.434

3.3.2 Prevalence of STI according to serological examination

The prevalence of STIs among transport workers according to serological testing is given in the Table 17. Among 444 blood samples a total of 25 (5.6%) cases tested positive for STI of any type. Proportionately the STI prevalence is highest among the drivers (8.4%), followed by helpers (4.5%) and conductors (3.4%). *Syphilis* is indicated if both tests (TPHA and RPR) are positive, and was found to be the most prevalent STI (4.3%, from 5% TPHA positive and 4.5% RPR positive), followed by *trichomonas* (1.4%) and *gonorrhoea* (0.2%). A similar study

carried out among the 400 transport workers from Rupendehi to Jhapa, including Dhading, shows *syphilis*, *gonorrhoea* and *trichomonas vaginitis* in 5.3%, 2.5% and 0.5% of the transport workers respectively (FHI, New Era, SACTS: 1999). A study conducted in 2001 among migrants in Kailali district showed the prevalence of *syphilis*, *gonorrhoea* and *chlamydia trichomonitis* to be 1%, 0.6% and 1.3%. (FHI, New Era: 2001), which is considerably lower than that found among the TWs.

This study shows that *syphilis* infection is significantly higher among the drivers' group, at the level of 0.09 chi-squared P-value. (Table 17)

Table 17: STI prevalence among transport workers according to pathological findings

Variables	Type of work			Total No (%) N=444	Chi2 value	P-
	Driver No (%) N=155	Helper No (%) N=201	Conductor No (%) N=88			
STI positive of any one	13 (8.4)	9 (4.5)	3 (3.4)	25 (5.6)	0.176	
TPHA positive	12 (7.7)	7 (3.5)	3 (3.4)	22 (5.0)	0.140	
RPR positive	11 (7.1)	6 (3.0)	3 (3.4)	20 (4.5)	0.153	
Syphilis positive (TPHA and RPR both test positive)	11 (7.1)	5 (2.5)	3 (3.4)	19 (4.3)	0.093	
Gonorrhoea positive	1 (0.6)	0 (0.0)	0 (0.0)	1 (0.2)	***	
Trichomonas vaginitis	3 (1.9)	3 (1.5)	0 (0.0)	6 (1.4)	0.442	

Table 18 shows the prevalence of STIs by socio-demographic characteristics of the sampled TWs. The results indicate that STI is higher among the Brahmin group (11.8%) followed by Dalit/others (6.3%), Chhetri/Thakuri (4.8%) and Newar (4.3%). Surprisingly, STI rates increased with age, and those working on minibuses/tempo were found more likely to be infected than the TWs on buses and trucks. However, the difference is not statistically significant.

Table 18: STI prevalence by socio-demographic characteristic of the respondents

Variables	STI test positive		Total No (col %)	Chi-square value	P-
	Yes No (row %)	No No (row%)			
Ethnic					
Brahmin	11 (11.8)	82 (88.2)	93 (20.9)	0.089	
Chhetri/Thakuri	7 (4.8)	138 (95.2)	145 (32.7)		
Gurung/Magar	2 (2.5)	77 (97.5)	79 (17.8)		
Newar	1 (4.3)	22 (95.7)	23 (5.2)		
Tharu	2 (2.8)	70 (97.2)	72 (16.2)		
Dalit/other	2 (6.3)	30 (93.8)	32 (7.2)		
Age group					
<20 yrs	3 (2.7)	108 (97.3)	111 (25.0)	0.137	
20 – 24 yrs	8 (4.6)	165 (95.4)	173 (39.0)		
25 – 29 yrs	6 (7.5)	74 (92.5)	80 (18.0)		
30 and above	8 (10.0)	72 (90.0)	80 (18.0)		
Type of transportation					
Bus	14 (5.6)	236 (94.4)	250 (56.3)	0.572	
Truck	8 (4.9)	155 (95.1)	163 (36.7)		
Microbus/tempo	3 (9.7)	28 (90.3)	31 (7.0)		

3.3.3 Factors associated with STI by analytical finding

The risk factors associated with STI are shown in Tables 19 and 20. The findings suggest that the TWs who are married, non-literate or have only non-formal education, and drink alcohol are at the highest risk of having STI. Those who are non-literate and alcohol drinkers are almost twice as likely to have STI as those with education and who do not drink, OR 1.78 and OR 1.88, respectively. However, because of the small number of sample size, a statistically significant result could not be achieved. (Table 19).

Table 19: Socio-demographic characteristics and alcohol drinking associated with STI

Variables	STI test positive		Total No (col %)	Odds ratio (95% CI)
	Yes No (row %) (%)	No No (row %)		
Marital status				
Married	16 (6.3)	237 (93.7)	253 (57.0)	1.37 (0.55 – 3.46) (P= 0.303)
Unmarried	9 (4.7)	182 (95.3)	191 (43.0)	
Education				
Illiterate/informal	6 (8.7)	63 (91.3)	69 (15.5)	1.78 (0.61-5.02) (P= 0.119)
School attended	19 (5.1)	35(94.9)	375 (84.5)	
Alcohol drinking				
Yes	19 (6.7)	263 (93.3)	282 (63.5)	1.88 (0.68- 5.43) (P = 0.129)
No	6 (3.7)	156(96.3)	162 (36.5)	

Table 20 shows the association between sexual behaviour and STI. Not surprisingly, TWs who ever have had sex have more than three times more likely to have an STI. A wide confidence interval of 0.49- 73.1 suggests the sample size is not high enough to prove the finding statistically. Unexpectedly, one respondent who said he had never had sex was diagnosed positive for STI. It seems likely that cultural reasons prevented from stating the truth, unless he acquired the infection from another route.

Again, not surprisingly, TWs who had sexual relationships with other than wife were found to be 26% more likely to have STI. Condom use and knowledge of STI showed a definite protective effect against STI. Thus unprotected sex clearly appears to be an important factor contributing to STI infection. The TWs who reported using a condom during the last sexual intercourse were half as likely to have STI (OR= 0.55, P= 0.22). Similarly, the TWs with knowledge about STI were less likely to be suffering from STI (OR= 0.57, P= 0.317).

Table 20: Relationship between sexual behaviour and sexually transmitted infection (STI)

Variables	STI test positive		Total No (col %)	Odds ratio (95% CI)
	Yes No (row %)	No No (row %)		
Ever have had sex				
Yes	24 (6.2)	365 (93.8)	389 (87.6)	3.55 (0.49 – 73.1) (P= 0.158)
No	1 (1.8)	54 (98.2)	55 (12.4)	
Sex relation with other than wife in last three month				
Yes	13 (6.8)	177 (93.2)	190 (48.8)	1.26 (0.51- 3.12) (P= 0.371)
No	11 (5.5)	188 (94.5)	199 (51.2)	
Condom use in last sexual contact with other				
Yes	6 (5.3)	108 (94.7)	114 (60.0)	0.55 (0.15- 1.93) (P= 0.221)
No	7 (9.2)	69 (90.8)	76 (40.0)	
Know about STI				
Yes	21 (5.3)	378 (94.7)	399 (89.9)	0.57 (0.17- 2.09) (P=0.317)
No	4 (8.9)	41 (91.1)	45 (10.1)	

3.3.4 Blood Group of the transport workers:

The main blood groups of the transport workers are given in Table 21

Table 21. Blood group of the transport workers

Variables	Type of work			Total No (%)
	Driver No (%)	Helper No (%)	Conductor No (%)	
A –positive	45 (29.0)	63 (31.3)	26 (29.5)	134 (30.2)
A- Negative	0 (0.0)	2 (1.0)	2 (2.3)	4 (0.9)
B- Positive	55 (35.5)	56 (27.9)	27 (30.7)	138 (31.1)
B- Negative	2 (1.3)	2 (1.0)	1 (1.1)	5 (1.1)
AB- Positive	19 (12.3)	22 (10.9)	7 (8.0)	48 (10.8)
AB- Negative	0 (0.0)	0 (0.0)	1 (1.1)	1 (0.2)
O- Positive	34 (21.9)	54 (26.9)	21 (23.9)	109 (24.5)
O- Negative	0 (0.0)	2 (1.0)	3 (3.4)	5 (1.1)

On the whole, 31.1% were B- positive, 30.2 were A-positive, 24.5% were O-positive and 10.8% were AB-positive blood group. Negative blood groups of any type are in negligible number.

Section: Four

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This final chapter summarizes the findings of the survey, and gives conclusions and a number of implications and recommendations, which collectively add up to a comprehensive STI management strategy for transport workers in the mid and far western development regions of Nepal. This study to determine the prevalence of STIs among the transport workers and the risk factors associated with them is the first of its kind in this part of the country.

4.1 Summary of the Findings**4.1.1 Transport worker characteristics and behaviour**

Both this study and the RSA studies show that TWs spend more than two weeks away from home, with the helpers reporting an even more time away. For almost half, lodges or hotels are the most common choice for overnight stay and sexual activity with FSWs. Sleeping in the vehicles was the second most likely alternative, especially for the helpers. About 30 places were reported as the main locations for overnight stay, with Nepalgunj, Dhangadhi, Dang, Kathmandu and Mahendranagar the most popular

Nine out of ten TWs have ever had sex. Although the mean age of the helpers is lower than that of the drivers and conductors, they seem more sexually active. The mean numbers of sexual partners are 2.06 for helpers, 1.7 for drivers and 1.8 for conductors. The most common non-marital last sexual partners were reported as FSWs, unknown partners and girl friends.

The proportion of TWs self-reporting condom use in their last sexual encounter was 60%. Although traditional values and practices strictly proscribe pre and extra marital sex of any kind, almost half of the sample reported having sexual contact other than with wives. Extra and non-marital sex appears to be much higher among helpers, presumably linked with their youth and unmarried status, as well as the greater amount of time they spend away from home. For sex with partners other than wives, respondents reported paying cash and kind, with the average amount being Rs.103 (ranging from Rs.45 to Rs.500) for the most recent encounter. This compares with Rs.157 reported in the RSA study of 2002. On average, conductors pay highest amount, followed by drivers and helpers. The lower amount paid by the helpers is associated with their low income, which makes them turn to cheaper sex workers, and thus also increases their vulnerability to STIs. The risk to TWs who partner FSWs is likely to depend on the number of the sexual partners of these sex workers and the level of their unprotected sex, but this information is beyond the scope of this study.

Of the 190 transport workers having non-marital sex, just over half reported using a condom. Condom use appears higher in drivers, followed by helpers and conductors. However, these numbers are not statistically significant. Only one in four respondents reported using a condom consistently, for every sexual encounter in the last six months.

Almost all studies carried out recently in Nepal show that condoms are easily available, but the overall rate of condom use is still only 60 to 70% according to recent studies. When asked the reason for not using a condom, most of the non-users say that it is "unnecessary" or "not available at the spur of the moment", or "No entertainment". The price of the condom is

affordable and so non-use cannot be attributed to non-availability or non-affordability. Two factors are of note in the non-use of condoms: first, there is a conviction that the condom is only to be used when the woman is a regular sex worker; second, there is still a perception that using a condom compromises sexual orgasm. Thus, condom use is likely to be determined by the individual's values and perceptions, rather than availability and knowledge.

Vaginal sex is reported as the main mode of sexual contact among the sampled TWs. Only 15.7% reported masturbating, and oral and anal sex were well under 4%. MSM appears in less than 1% of the sample, which is far less than the level of 16.2% shown by the previous SC/US study in 2002 (SC/US, ESPHIN II Final Evaluation). This behaviour is reported at zero by drivers, and is highest among the helpers, which may be linked to their youth. Widespread use of alcohol and smoking was reported. Use of alcohol in particular increases likelihood of an uncontrolled state of mind, which may lead to unsafe sexual behaviour

4.1.2 Knowledge and behaviour related to STI

The findings show that nine in ten TWs have ever heard STIs, compared with 97% found in the SC/US final evaluation study. Just over half of those sampled were able to name three or more STI symptoms. Only one in ten could not name any STI symptoms. The knowledge of STI symptoms was lowest among the drivers, which may be due to their reluctance to attend peer education classes with their junior colleagues

With regard to complications related to STIs, nearly half of the sample linked STI with HIV/AIDS, saying it was confirmed by scientific evidence. They also believed that STI can cause death, loss of the sexual organ and infertility. Only 4 in 10 of the sample sought treatment when suffering from symptoms of STI. There was no difference in the treatment-seeking behaviour of the three groups. The level of partner treatment was very low, and they appear to think it is not necessary, as they do not consider wives as partners, which is significant in terms of increasing the vulnerability of TW wives.

Hospital is the main source of treatment for three quarters of the sample, followed by private practitioners and health posts.

It is noteworthy that for around half the sample NGOs and friends are the main sources of information about STIs, followed by radio, TV and newspapers. This study confirms the findings of other surveys that condoms are almost available everywhere within a distance of about 10 minutes walk from the TWs' residence. All the transport workers had heard of condoms, both as a contraceptive and as a means of safer sex, to prevent HIV/AIDS and STIs. Commercial outlets such as general shops and medical halls are the main purchase places, with NGOs and peer educators the main non-commercial outreach sources.

4.1.3 Sexually transmitted infections and the associated risk factors

TWs are considered a bridge population for the transmission of STIs and HIV/AIDS from FSWs to the general populace. They are largest users of FSWs, making up two thirds of the total clientele. Other studies show this proportion to be even higher, up to 75.8% (RSA SC/US: 2002, NEW Era: 1995).

Self reported symptoms of STI included genital itching, burning on urination, genital ulcer and urethral discharge. Clinical examinations showed the presence of ringworm in the genitalia, infection in the genitalia, genital ulcer, burning urination and fungal infection among the sample, some of which were due to lack of personal hygiene.

Provisional diagnosis and treatment of conditions diagnosed was provided, in line with syndromic management guidelines. These included *syphilis* (3.6%) *gonorrhoea* positive (1.8%) and *trichomonos vaginitis*(6.7%).

Overall, 5.6% transport workers tested positive with any of the three STIs. *Syphilis* was the most prevalent, followed by *Trichomonas vaginitis* (1.4%) and *gonorrhoea* (0.2%). Although the mean number of sexual partners and the trend of visiting FSWs is less among the drivers, and they reported more consistent condom use, the prevalence of STIs including *syphilis* is significantly higher among this group, which indicates that self reported sexual behaviour is not true indicator of the actual sexual behaviour. The STI prevalence is higher among the TWs who drink alcohol and who are non-literate (OR 1.78 and 1.88). However, due to the small sample size it is statistically not significant.

It is interesting to note that of the 25 STI cases, 11 reported that they had no sexual relations other than with their wives. This indicates that either they did not answer the sexual behaviour question honestly or they obtained the disease by some other route. It is not clear that whether their wives or sexual partners were also suffering from STI. Condom use and knowledge of STI emerge as protective factors against STIs. The TWs who used a condom during their last sexual encounter were only half as likely to have STI (OR = 0.55, P= 0.22). Similarly those who knew about STI were less likely to suffer from STI (OR=0.57,P=0.3170). It is also important to note that STI was tested positive among some TWs who reported using a condom in their last sexual intercourse. Thus it seems that they were not consistent in their use of a condom.

4.2 Conclusions and Recommendations

Based on the main findings of the study following strategic responses are recommended:

- **Awareness raising:** Great strides have been made in raising general awareness about STDs among transport workers in the regions in recent years, as indicated by a substantial increase in the number of TWs who have heard of STIs. However the difference in levels of knowledge between the different groups is noted. The present study shows that the drivers' knowledge about STI symptoms is comparatively lower than that of the helpers and conductors. Despite widespread awareness programs, STI prevalence in this high-risk bridge population is on increasing. In the present study STI prevalence among the drivers was found to be the highest of all the transport workers. The reasons for this may be partly that many of them hesitate to participate in the peer education sessions conducted at the drop-in-centers, and also that they persist in high-risk sexual behaviours. It is therefore essential to encourage their participation in awareness-raising sessions, and provide interpersonal counselling. There is a need to focus on behaviour change communication education, rather than on simply dissemination of information about STIs and HIV/AIDS.

The self-reported information about sexual behaviour of drivers does not tally with their high rates of STI prevalence, which indicates that self-reported sexual behaviour and condom use do not represent actual sexual behaviour. Similarly the helpers, as the youngest group are highly sexual active and indulge in more high-risk sexual behaviours. They spend more time away from their home, more of them are unmarried, they are less educated and have a higher mean number of non-marital and non-cohabiting partners and pay least amount to the FSWs. Only a little more than a

half use condom while having sex. Oral and anal sex is also higher amongst this group, and their use of alcohol is high. *Thus the helpers emerge, as the most vulnerable group of TWs.* STI prevalence is also twice as high among the TWs on minibuses, tempos and jeeps. It is suggested that immediate attention for any intervention programs should be focused on these groups.

- **Use of condoms:** The overall condom use rate is still low among TWs. Only a small proportion of them use a condom every time they have sex other than with wives. In the partner project areas condoms are easily available at a walking distance of about ten minutes, and are also provided in their own vehicles. Thus it cannot be said that condoms are not available or there is no awareness about its use. The crucial point for future interventions is how to increase its acceptability. It appears to be personal and social values and perceptions that hinder the consistent use of condoms. TWs mainly spend the nights at hotels and in the vehicles. These are also the main spots for their sexual encounters with the FSWs. Therefore STI intervention programs such as peer education, condom distribution and negotiation, and partner treatment sessions should be conducted in and around these places. In the same way the networks of the FSWs and transport workers should be mapped out in order to identify the target clients and intensify the STI and HIV/AIDS intervention programs.
- **Promotion of treatment seeking:** For the study, an overwhelming number of transport workers voluntarily attended the out reach clinics conducted by the study team and consented to testing of their STI status. This shows a high level of health-seeking behaviour. However overall self-reported treatment seeking is low, and the level of willingness to promote partner treatment is even lower, which is crucial in terms of controlling the spread of STD. Moreover, they do not consider their wives as partners. It would be worthwhile to provide general health care as well as STI care facilities for TWs and their partners in their usual locations. There is a huge need for the provision of the Voluntary Counselling and Testing (VCT) facilities in the major transport locations of the regions. In the same way referral and STI case management training should be provided for the local level health care providers. It is very important to bring these highly mobile and hard-to-reach populations in the safety net of STI care and protection from STIs and HIV/AIDS.
- **Personal hygiene:** A large proportion of the TWs were found to be suffering from ailments caused by poor personal hygiene and sanitation such as skin infection, ringworms, and fungal infection. From this it becomes obvious that the transport workers need to be sensitized with "knowledge therapy" about personal hygiene and sanitation as well as life saving skills as the "road to health"
- **High-risk behaviours:** Only a small proportion of the transport workers reported MSM, oral and anal sexual behaviours. However, this may represent just the tip of an iceberg because many of them may not have reported their actual sexual behaviour because of social stigmas. Therefore, to ensure better access to information on STI and HIV/AIDS a practical and easy to read and use handbook, and audio and other IEC materials addressing various dynamics of STIs should be prepared and disseminated among the peer educators for transport workers. Meanwhile, it is necessary to revisit the messages, process and effectiveness of the existing peer education program along using an effective monitoring system.

Annex 1: Interview Protocol, Consent Form and Clinical History Form

Prevalence of Sexually Transmitted Infections among Transport workers in Mid and Far-western Highways Nepal

Study Questionnaire
2059

Save the Children US and Development Resource Center

Identity No. ____

Form ID NO _____

Namaskar, I am I am here on behalf of Development Resource Center (DRC). I will ask you some questions about sexual behavior. Your answers will be kept top confidential. Your answers will be used only for research propose. I will not disclose your answers any to others. I would like to request you that please answer my questions without any hesitation.

Note: If taking antibiotic within last seven days please request to come after one week in the clinic.

Munic/VDC _____ Ward No..... District

Interview date:.....
Day Month year

Name of Interviewer Signature.....

Name of Supervisor..... Signature.....

Personal History

Permanent Address: Municipality/VDC..... Ward No.....

- Ethnicity**
- | | |
|-----------------|------------|
| a. Brahmin | b. Chhetry |
| c. Thakuri | d. Newars |
| e. Magar/gurung | f. Tharu |
| f. Others _____ | |

Marital status a. Married b. Unmarried c. Separated

1. Age ____ years completed

2. Education level:
- | | |
|---------------------------|-----------------------------|
| a. Illiterate | b. Graduate from Non-formal |
| c. Grade five-passed | d. between grades 6-10 |
| e. Intermediate and above | |

3. In which vehicle do you work?
 - a. Bus b. Truck
 - c. Microbus d. Tempo, Jeep
4. What kind of work do you do in the vehicle?
 - a. Driver b. Helper c. Conductor
5. How much time did you spend in this occupation?
Year..... Month.....
6. How much time did you spend to work in vehicle in the east west highway?
Year..... Month.....
7. In an average, how many days do you spend out to your home?
Days.....
8. Where do you mostly spend overnight? (Please ask name of place)
 - a.
 - b.
9. When you spend overnight out to your home, where do you sleep?
 - a. In Hotel b. In rented home c. In vehicle
 - d. In girl friend's home e. In boy friend's home

About Sexual Disease

10. Have you ever heard about the sexually transmitted disease?
1. Yes 2. No
11. Do you know that what kinds of symptoms can be seen in a sexually transmitted disease patient? (Please circle all answers)
 1. Discharge from penis
 2. Burning sensation during urination
 3. Seen wound in penis
 4. Enlarge glands
 5. Itching in sexual organs
 6. Pain during intercourse
 7. Don't know
 8. Others (specify) _____
12. How can sexually transmitted disease be prevented? (Please circle all numbers of answers)
 1. Avoid sex with multiple partners
 2. Use condoms during sexual intercourse
 3. If sexually transmitted disease is seen then treat both partners
 4. Don't know
 5. Other (specify) _____

13. If sexually transmitted disease is seen then where do your friends go for treatment?
(Please circle all numbers of answers)
1. Mobile clinic
 2. Health personnel
 3. Health post
 4. Hospitals
 5. Medical halls
 6. Traditional healers
 7. Clinics run by NGOs _____
 8. Doctor
 9. Home remedies
 10. Don't know
 11. Other (Please specify the place) _____
14. If sexually transmitted disease is not treated then what kind of complications can be seen? (Please circle number of all answers)
1. High possibility of HIV/AIDS
 2. Deaths
 3. Lost of organ
 4. Don't know
 5. Other (please specify) _____
15. What is your source of getting information about sexually transmitted disease?
(Please circle number of all answers)
1. Friends
 2. Wife
 3. Radio
 4. Television, film
 5. Newspapers, Books
 6. NGOs
 7. Others (Specify).....
-

About Condom

16. Do you know, what is condom?
1. Yes
 2. No (Please go to question number 21)
17. Why do you use condom? (Please circle all numbers of answers)
1. To prevent from HIV/AIDS
 2. To prevent from sexually transmitted disease
 3. For family planning purpose (Birth spacing)
 4. For entertainment during sexual intercourse
 5. Don't know
 6. Others (Specify) _____

18. If condom is needed from where you can get it?
1. Hospital, Health posts, sub-health post
 2. Shops
 3. Peer educators
 4. Health workers/volunteers
 5. Medical halls
 6. NGOs _____
 7. don't know
 8. Other (Specify) _____
19. How much time it will take to reach the nearest place that you just told?
- 1 On foot hour minute
- 2 By vehicle hour minute
20. Do you know how to use condom?
1. Yes 2. No
21. Have you ever-made sexual contact?
1. Yes 2. No
- b. Have you ever used condom during sexual contact?
1. Yes 2. No (Please go to question number 32)
22. Who was your last sexual partner?
1. Wife
 2. Girl friend
 3. Sexual workers
 4. Stranger persons
 5. Others (Specify)
23. Did you use condom during your last sexual contact?
1. Yes
 2. No (Please go to question number 25)
24. Why didn't you use condom? (Multiple answers can be found)
1. Condom was not available
 2. Sexual partners not agreed
 3. Because of no entertainment
 4. Was not necessary (Specify)
 5. Not available when needed
 6. Don't know
 7. others (specify) _____

Sexual Behavior

I will ask some sexual behavior related questions. These questions are more personal. But answers of these questions are most important for this study. So, please answer of these all questions without any hesitation. Answers of these questions will be kept top confidential.

25. Had you made sexual contact other than your wife during last three-month period?
1. Yes
2. No (Please go to question number 31)
26. If you had in sexual contact then please tell with how many persons?
 Persons
27. Did you use condom in last sexual contact?
1. Yes 2. No
28. Did you use condom while having sexual contact other than wife during last six month?
1. Always 2. Most of the time
3. Occasionally 4. No
29. Do you give money to sexual partners for sexual behavior?
1. Yes 2. No (Please go to question number 31)
30. If you give money, how much rupees do you need for a sexual contact?
..... Rupees
31. Have you ever done the following sexual activities with your sex partners? (Read the following all question and circle all answers)
1. Mutual sex by hand
2. Body sex
3. Oral sex
4. Anal sex
5. Homosexual (MSM)
6. Others (Specify) _____
32. Which is your present driving route?
Place, from to
33. Do you drink alcohol?
1. Yes 2. No
34. If you drink, how often you drink?
1. Daily 2. Twice or thrice in a week 3. Occasionally
35. Where do you drink alcohol mostly?
1. Home 2. Restaurant 3. Other places
36. From when you started to drink alcohol?
..... Years
37. Do you smoke?
1. Yes 2. No
38. From when you started to smoke?
..... Years

Clinical History

39. Do you have the following symptom of sexually transmitted disease within last six-month period? (Please read all the following symptoms and circle the numbers of answers)
1. Burning during urination
 2. Enlarged glands
 3. Seen wound in penis
 4. Discharge water from penis
 5. Pain in during sexual intercourse
 6. Itching sexual organs
 7. Other (specify) _____
 8. None
40. While you faced this problem then did you go any places for its treatment or advise?
1. Yes
 2. No (If no, please go to question number 42)
41. Where did you go for treatment or advice?
1. Health post/sub-health post
 2. Hospitals
 3. Health workers
 4. Traditional healers
 5. Mobile clinics
 6. Medical halls
 7. Doctor' clinic
 8. Clinic run by NGO _____
 9. Don't know
 10. Other (Specify) _____
42. Did you give any advice to your sex partner for seeking treatment?
1. Yes
 2. No (Please go to question number 44)
43. If you advised then where is the place? _____
44. Did you face any problem of disease that was needed to check up?
1. Yes
 2. No
45. If yes, name of disease.
.....

History of clinical examination

46. Symptoms found in clinical examination
1. 1 Burning during urination
 2. Enlarged glands
 3. Wound in penis
 4. Discharge water from penis
 5. Pain in during sexual intercourse
 6. Itching sexual organs
 7. Other (specify) _____

Consent Form

(Please read to participants before proceeding to clinical test for STIs)

I am asking sexual transmitted disease related questions to 400 males in such camps and I hope, I will receive correct answers from you. Sexually transmitted disease transmits through sexual intercourse. If this disease is not treated in time patients can be died. If you want to check up for sexually transmitted disease then please give answers honestly. Your answers will be kept highly confidential and it won't be shared with your family members and with other people in the community too. Your name is not mentioned in this paper. I will not provide this paper to any people.

Did you understand the thing that I have just told you? Do you want to ask any questions?

I am asking some personal questions. If you feel difficult question, please do not answer. When you find it difficult, you can stop answer immediately. Though you give answer of partial questions, it will not affect behavior of others to you and health service that is provided to you here. I have already told you that a male friend will ask some questions related to sexually transmitted infections. After that, you will meet health assistant and he will ask some questions and also will check up your sexual organ and others. He will collect some liquid with the help of cotton from your penis. If he feels necessary, he will give medicine. He will also give you an identity card. He will tell about follow-up check-up date and place. At the end, you need to give blood for identifying blood group and finding sexually transmitted disease.

Did you understand the things that I just have told? Do you want to ask any questions?

If you want to discontinue at any time during interview, check-up or blood draw, you can ask to health assistant or me for stopping it. If you want to stop the process, it does not affect you and you can meet health assistant and you can also take some medicine if necessary. If you want, you can meet and check-up your health with health assistant directly. If necessary, you should take medicine. But blood test is not necessary.

Would you want to ask to me some addition questions related to this study?

If there is no answer then give big thanks for his valuable time. If he feels necessary, you can help in taking history of past disease, checking health, identifying disease and assist to health assistant for check-up.

In addition, advise him to contact to **Dr. G.R. Shakya at Bheri Zonal Hospital, Nepalgunj** and **Dr. S.R. Kayastha at Mahakali Zonal Hospital, Kanchanpur** for follow up and counseling of sexually transmitted infection.

You will not be paid for your participation in this study.

Do you want to participate in this study? Yes No.....

Signature OR thumbprint of participant: Date:.....

Name of eye witness:..... Date:.....

**Study on Sexually Transmitted Infection Prevalence among
Transport workers in Mid and Far-western Highways
2059**

Save the Children US and Development Resource Centre

Study supervision checklist (1)

Note: The responsible person should write his/her name in each line and if it is not applicable then write note.

1. Used verbal selection procedure _____
2. Used inclusion and exclusion criteria _____
3. Consent paper read to participant / _____
Participant signed in consent paper _____
4. Completed all questionnaire's questions _____
OR
Completed partial questionnaire's questions _____
5. Given advice for pre-test _____
6. Taken clinical history _____
7. Completed clinical examination _____
8. Taken slab for trichomonas and Gonorrhoea test _____
9. Drew blood for syphilis test _____
10. Not needed prescription _____ Given prescription _____
11. Written prescription in study book _____
12. Drew blood _____
13. Prescription was filled by ANM _____
14. Given medicine use method advice to man _____
15. Told follow-up date and place to man _____
16. Books were collected by ANM _____
17. Books were returned to laboratory technician _____
18. Given identification number for samples _____
19. Stored samples and transported _____

Annex: 2**Number of Vehicles Registered in the Far and Mid western Regions of Nepal**

S.No.	Type of Vehicle	Bheri Anchal Atayat-NPJ	Seti Anchal Yatayat- DGD	Rapti Anchal Yatayat-	Lumbini Anchal Yatayat- KPB	Total
1	Truck	168	230	134	74	606
2	Bus	351	305	296	190	1142
3	Mini/Micro	48	45	12	25	130
4	Tanker	-	85	32	40	157
5	Tempo	35	55	46	40	176
6	Jeep	25	25	46	356	131
	Total	627	745	566	404	2342

Annex:3

Distribution of the Sample Transport workers by Major Permit Routes

S.No.	Routes	No.	Percent
1.	Butwal-Pokhara	6	1.3
2.	Butwal-Tulsipur	70	15.6
3.	Narayanghat-Butwal	9	2.0
4.	Tulsipur-salyan	27	6.0
5.	Nepalgunj-Surkhet	58	13.0
6.	Nepalgunj-Kothiyaghat	11	2.4
7.	Nepalgunj-Dhanaghadhi	111	25.0
8.	Dhanagadhi-Attaria	9	2.0
9.	Dhanagadhi-Dadeldhura	6	1.3
10.	Dhanaghadhi-India	26	5.8
11.	Dadeldhura-Doti Dipayal	4	0.9
12.	Dadeldhura-Sanphebagar	15	3.3
13.	Dipayal/Doti-Baitadi	8	1.8
14.	Attaria-Tikapur	4	0.9
15.	East of Butwal	49	11.0
16.	East of Narayanghat	49	11.0