



**Bio-Behavioural Sentinel Surveillance Survey  
among men and women attending Lae Friends STI Clinic 2008**

**The National Department of Health and the National Research Institute, in  
collaboration with the Lae Friends STI Clinic, Angau Hospital.**

Written by Dr. Holly Aruwafu, Francis Kupe and Frances Akuani, Behavioural  
Surveillance Survey (BSS) Unit, Social and Environmental Studies Division, the  
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## **Foreword and Acknowledgements**

The data for this report is from bio-behavioural sentinel surveillance collected by the NDoH, NRI and clinic staff at Lae Friends STI Clinic at Angau Hospital. The NRI supported the collection, analysis of behavioural data, and integration of biological and behavioural databases and analysis with the NDoH. This data helps to monitor the HIV epidemic in particular areas such as Lae which has a high and increasing prevalence of HIV, and highest at STI clinics.

The data provides information for tailored and standardized messages to prevent HIV and other sexually transmitted infections. Behavioural data helps us to identify where focus in information and support is required to prevent HIV transmission in both younger and older men and women.

There is a need to create more options in day to day clinic routines to facilitate not only increased HIV testing; but also that informed consent and confidentiality are maintained to protect the rights of all Papua New Guineans, including those living with HIV.

The National Department of Health and the National Research Institute would like to express its appreciation to the men and women who consented for interviewing and testing, as their information forms the basis of this report and recommendations for them. Our sincere gratitude is extended to those who have contributed towards the collection, management and analysis of data, presentation and the production and review of this report. The information in this report will assist stakeholders develop policies, plan intervention programs to reduce HIV and other STI, monitor and evaluate the epidemic and advocate for additional resources.

Acknowledgements are extended to Lucy Daly and Friends Clinic staff who supported the daily integration of data collection at a level of clinic routine; to Paik Tade and Dr. Kitur from the NDoH Surveillance Unit, and to Veronica Samof, Kayleen Sapak and John Laule, Dr. Holly Aruwafu, Francis Kupe, Frances Akuani, Naomi Kono and Miriam Lanta, Vivien Toaniso, and Lawrencia Pirpir from the NRI BSS team, Social and Environmental Studies Division. Appreciation is expressed to the Surveillance Technical Working Group for their comments on the final draft of this report.

The compilation of this report satisfies one of the key objectives of the government through the National AIDS Council, the National Department of Health and the National Research Institute to provide up to date information on the STI and HIV epidemic, and to make it available to be used. The data collected from the Lae Friends STI clinic during sentinel data collection was over a two month period in September and October 2008, and this focus in surveillance data collection and activities helps efforts towards improving the quality of data collected from provincial and facility levels for better evidence based responses to HIV.

The importance of strategic information cannot be overemphasized given the need to create more evidence-based responses to HIV, and to direct resources and support where most required. This report provides up to date data for all stakeholders to plan their responses and ensure that the scale up strategies for HIV are accessible, equitable, stigma and discrimination free for people living with and affected by HIV and for those from other more vulnerable populations. Understanding trends in HIV and STI, and practices that increase potential for transmission of HIV are both critical to understanding changes in the epidemic and to create a more evidence-based response to prevent HIV and to support people living with HIV.

This report represents the continuous support of partners such as the Asian Development Bank, WHO, UNAIDS, NRI and STI Facilities in assisting the National Department of Health to generate information to be disseminated to all sectors and stakeholders for every one's use.

A handwritten signature in blue ink, consisting of a large, sweeping oval shape followed by a series of loops and a long horizontal stroke at the bottom.

Dr Clement Malau  
Secretary for Health

A handwritten signature in blue ink, featuring a sharp, angular 'Z' or 'W' shape with a long horizontal stroke extending to the right.

Dr. Thomas Webster  
Director NRI

## **Acronyms**

AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Clinic
BSS	Behavioural Surveillance Survey
EHP	Eastern Highlands Province
HIV	Human Immunodeficiency Virus
IBBS	Integrated Bio-Behavioural Surveillance
NAC	National AIDS Council
NACS	National AIDS Council Secretariat
NCD	National Capital District
NDoH	National Department of Health
NRI	National Research Institute
PNG	Papua New Guinea
PPTCT	Preventing Parent to Child Transmission
SHP	Southern Highlands Province
SOP	Standard Operating Procedures
SPC	Secretariat of Pacific Communities
STI	Sexually Transmitted Infections
UNICEF	United Nations Children Fund
UNSW	University of New South Wales
WABHA	Women Affected by HIV and AIDS
WHO	World Health Organization
WHP	Western Highlands Province

## **Executive Summary**

In 2008, a bio-behavioural surveillance survey was conducted at the Friends Lae STI Clinic by the NDoH Surveillance Unit and the NRI Behavioural Surveillance Unit. The National Research Institute supported the collection of behavioural data during sentinel surveillance at the Lae STI clinic for a period of seven weeks from the 2<sup>nd</sup> September to the 17<sup>th</sup> October 2008.

Of the 300 STI clients interviewed and tested, the majority (55.3%) come from the Highlands, with 39.7% coming from Momase and very few from Southern (3.3%) and Islands (1.7%) regions. Participants ranged between 15 years to 68 years old. Only a quarter of the sample was in the 15-24 age range; with 6.3 % between 15-19 years old and 18.7% between 20-24 years. A third of STI clients were in their thirties and close to a fifth were over the age of forty, with close to five percent (4.3%) of STI clients fifty years or older.

Close to half (48.0%) had primary education, with nearly a quarter (24.0%) having secondary education, with a fifth (19.6%) who had never been to school. The majority (68.6%) reported that they did not have paid employment; with only around a third (31.4%) with a salary job. Of those who had no salaried job: 59.7% were unemployed or dependant; 34.1% were involved in the informal sector and 6.3% were students.

Most (86.0%) were married, with 40 (13.3%) who had never been married; 20.9% who said that they were separated, widowed or divorced, and 32.3% who were involved in polygamous marriages. Close to 5.7% of those who were married were not living with their spouses; with some involved in other living and sexual relationships.

First sexual debut happened at a young age, with thirty-two (11.4%) having sex before the age of 15; with a median age of nineteen for first sexual debut. A total of 30 STI clients reported having had anal sex, and there were more women who reported having experienced anal sex. Of these, there were only 8 (5M, 5F) who reported condom use at last anal sex. A quarter (24.7%) of STI clients had experienced oral sex, and of these there were more men (60.8%) who had oral sex than women (39.2%). Of male clients, 20.3% reported full circumcision; 42.5% had dorsal slits and 16.4% had inserts.

While the majority (57.3%) had one partner; 36.7% reported between 2-20 sexual partners in the last year. Generally men had less belief that their partners were having other partners; while more women thought that their male partners were having other sexual partners. Polygamy, with a number of other wives creates another layer to other regular and non-regular concurrent partnerships. This creates broad sexual networks which can facilitate the spread of HIV.

Some (14.3%; 16) men reported paying money or other goods (money, gifts, drinks or food) for sex in the past 12 months. Only 2 men said they used a condom at last paid sex. Some (17; 11.6%) women reported being paid money or receiving other goods (money gifts, drinks or food) for sex in the last 12 months and third (33.3%) had used a condom at last paid sex.

Of all STI clients, close to ninety percent (86.7%; 80M, 106F) did not use a condom at last sex with a regular partner. Very few women 18 (7.2%) reported they had used a condom at last sex with their husband and only 12 (4.8%) men said they used a condom at last sex with their wives and 3.8% did not use a condom at last sex with non-regular partner.

Over three quarters (76.0%) of women reported that they had been forced to have sex by their husbands when they did not want to; while 42.6% of men said they had forced their wife to have sex with them. Over a third (35.0%) of women also reported being forced to have sex by primarily other individuals (87%), and few by a group (13%).

Three quarters of those interviewed said that they did not know symptoms of STI in women and sixty percent did not know the symptoms in men. An extremely low percentage of the sample was able to identify STI symptoms in men and women when asked. Of those, 202 who had experienced 506 occurrences symptoms in the past 3 months; 65.8% or 133 (M91; F42) said that they had sought treatment.

The majority knew a healthy looking person could have HIV. The majority had never known a person who had HIV and became sick and died of AIDS. Around half would look after a family member if they were diagnosed positive, but around a half would also want the status of their family member to be maintained as a secret – illustrating continuing issues with stigma and discrimination for those living with HIV.

While most knew that they could protect themselves by having sex with only one uninfected person (77.8%) and that abstinence was protective (80.3%); just over half 55.3% (166) agreed that people can protect themselves from HIV by using a condom correctly every time they have sex and 11.7% were unsure.

While most (84.3%) understood that food sharing could not transmit HIV; 48.0% of STI clients are still not clear that mosquito bites will not transmit HIV. Most said that a pregnant woman could give HIV to her unborn baby during pregnancy (85.0%), through breast feeding (78.3%) and during delivery (85.0%).

Over half (59.0%) of participants in the survey reported it was possible in their community to get a test and that no one would know. Of those tested, 15 (5.0%) tested positive for syphilis and twelve (4.0%) tested positive for HIV, with two (0.6%) having indeterminate tests.

## **Background**

Research has shown that untreated sexually transmitted infections (STI) are a co-factor in HIV transmission, increasing the risk of acquiring HIV. Sexually transmitted infections can be high in PNG in both rural and urban areas, and in higher and lower risk populations, and most reported STI are found in younger age groups, particularly younger women (Hughes 1991, 2002; Mgone et al. 1999a, 1999b; Mgone et al. 2002; NDoH and NACS, 2007; Passey et al. 1998).

In Papua New Guinea, STI syndromic categories (genital ulcers and genital discharge) are monitored through the NHIS monthly reporting, with over 50,000 reported cases of discharge and ulcers in 2007. In 2007, close to double more genital discharge was diagnosed syndromically in female youth and women; with around 10% more ulcers diagnosed syndromically in men and male youth. Similar gendered STI trends with ulcers more prevalent in men and discharge more prevalent in women are seen in the data from STI routine and sentinel surveillance.

While most STI are reported from the Highlands region where HIV prevalence is also high; at the end of 2007, Morobe had the next highest STI prevalence to Enga and Chimbu, and has greater STI diagnosis than the National Capital District. At the end of 2008, there was an HIV prevalence of 5.0% from testing at STI clinics; furthermore, Morobe has the third highest number of cumulative reported diagnosis of HIV in PNG, with an increasing trend (NDoH 2008a). The Lae Friends STI Clinic in Morobe was strategically chosen because of these factors.

While the HIV epidemic continues to increase at a fast pace in some areas of PNG, there is a lack of a clear understanding of what is 'driving' increasing STI and HIV prevalence in some areas such as in the Morobe Province, and in particular age groups and not in others.

It is recognized by surveillance that the monitoring and treatment of STI is important to preventing the further spread of HIV, particularly in provinces with high STI prevalence and high and low prevalence of HIV. This integrated bio-behavioural sentinel surveillance study contributes to a growing body of data that can be used for monitoring and understanding the HIV epidemic in PNG, and the role of STI and other factors to that contribute to this.

## **Supporting Surveillance and Policy Objectives**

Integrated bio-behavioural sentinel surveillance at STI clinic sites supports the PNG National Strategic Plan on HIV/AIDS 2006-2010 (Section 3: Epidemiology and Surveillance) to epidemiologically monitor the epidemic, and supports the Health Sector Strategic Plan for STI, HIV and AIDS (2008-2010). It most specifically supports the National HIV, AIDS and STI Surveillance Plan 2007 - 2010 to collect and provide information on HIV and STI

prevalence and behavioural characteristics among men and women attending selected STI clinics through integrated sentinel surveillance surveys.

This information is valuable for the National Department of Health to monitor the epidemic in PNG and for the STI program to understand the behavioural profile of this population in relation to STI and HIV prevalence data. BSS data can help to create more standardized information for STI clients that focus on gaps in knowledge, on stigma and discrimination and to create prevention messages that are tailored for reducing HIV transmission and preventing other sexually transmitted infections in this population group.

### **Lae Friends Clinic STI Sentinel Site and Sample**

The bio-behavioural sentinel survey was conducted in Lae at the Friends clinic among STI clients. This study is the first integrated Bio-Behavioural Sentinel Surveillance Survey conducted between the NDoH and the NRI at an STI clinic among new enrolments of women and men. The NRI collected behavioural surveillance surveys (BSS) during annual sentinel surveillance data collection with women and men consenting to the interview and to both STI and HIV testing, during the STI clinic from Monday to Friday from 8:30 a.m. to 4:30 p.m. week days.

### **Survey Development**

The behavioural survey was developed after a meeting with staff from NRI, CBSC and NDoH in Port Moresby, to review the validated BSS STI clinic survey used during annual sentinel data collection with STI clients in 2004 in other Pacific Island countries done by the SPC, WHO and the UNSW. Feedback was used for the development of the pilot survey tool at NRI, with adaptations being made based on these discussions and recommendations, and a BSS survey was developed by NRI for piloting.

### **Method, Survey Piloting, Flow and Ethics**

#### ***Piloting***

The two initial BSS pilot surveys at STI clinics in Port Moresby were done at Heduru Clinic (5 days) and Lawes Road clinic (3 weeks), in an integrated manner with surveillance sentinel forms and biological data collection. However, lack of sufficient numbers of STI clients did not allow for the sentinel survey to proceed at these locations, and the Friends STI clinic in Lae was further identified by the National Department of Health.

In Lae, NRI interviewers and researchers participated in sentinel training done by NDoH and conducted observation and piloting at the STI clinic. The training discussions and hands on applications and piloting of the survey occurred on the 1<sup>st</sup> and 2<sup>nd</sup> of September. On the 1<sup>st</sup> of September 2008 the BSS casual interviewers, Dr. Holly Aruwafu (NRI) and Paik Tade (NDoH) met with the Sister in Charge and other staff at Lae Friends Clinic. A briefing and discussions were held on: the protocols of sentinel data collection; sentinel research in the

context of the clinic routine and space, and established two spaces for interviewing; need for information sessions on the research that stressed the benefits, individual choice and right to consent or refuse; ethics for bio and behavioural data collection; and review of forms. Interview staff also spent time to observe the flow of patients and the routine of the clinic.

Recommendations from the pilots at STI clinics in Port Moresby were included in the revisions made to the STI survey prior to it being piloted at Friends clinic in Lae. During the only day of piloting on September 2<sup>nd</sup>, the NRI BSS team met with 3 women and 1 man. The team resolved the flow of the interviewing, space considerations and the filling of the sentinel forms by NRI interviewers and clinic staff.

A meeting was held between NDoH and NRI in the late afternoon and evening of September 2<sup>nd</sup> to discuss the day, complete revisions to the survey and discuss coordination and communication. The pilot survey was revised primarily for skip patterns and flow of questions, with slight revisions done for clarity of translations. While the pilot is small, previous pilots at Heduru and Lawes Road helped to resolve earlier revisions to the survey tool and the pilot day at Friends Clinic helped to resolve mostly the flow of clients in that environment.

### ***Flow and Methods***

The flow of clients was established and only new enrolments (aged 15 and older) were offered interviewing and HIV and STI testing after they were:

- Registered
- All participants were informed through initial pre-counselling *toksave* with group information about HIV, STI and sentinel surveillance research and team given by a clinic health worker
- Each person was approached by NRI interviewer, a description of the research and ethics statement read, with confidentiality, privacy and anonymity stressed before and during interviewing, as well as the right to refuse and informed consent;
- After women and men gave their informed consent for HIV and STI testing and interviewing:
  - They were interviewed, and gender specific interviewing was made available by the three NRI interviewers on site and an office space and the conference room was used for interviewing
  - Tested for Syphilis and HIV
  - Received results and Post Test Counselling, and
  - Saw a health worker for follow-up and STI treatment

- Condoms were given after testing and treatment was completed

Staffing for this sentinel surveillance included three NRI interviewers and four clinic staff (1 lab technician, 3 clinical staff) and 2 trained volunteer counselors. A debrief was held every two days between clinic and NRI staff, and this helped in the organization and flow of clients, sentinel research and service delivery.

### ***Ethics and Data Security***

The protocol for collection of bio-behavioural surveillance data and ensuring strong ethics is guided through adherence to the NDoH Sentinel Surveillance Protocol 2008 (NDoH, 2008c), particularly the sentinel protocol Standard Operating Procedures (SOP) that NRI interviewers used as their guide.

During this study each man or woman was clearly and individually explained about the study and a statement of ethics was read from the survey tool that stressed consent, confidentiality and anonymity, and the right to refuse at any point in time. NRI interviewers documented consent and refusals, and these were given to clinic staff to inform if consent for testing had been given. NRI interviewers documented consent and refusals, and these were relayed to clinic staff to inform if consent for testing had been given for each client.

All surveys were verified and locked off site on a daily basis. Surveys were transported by air by NRI staff during and at the end of collection. All surveys taken to the NRI were locked in a cupboard when not in use during data entry. Computers at NRI are password protected and are programmed to go back to password authorization after 60 seconds of non-use.

The sentinel forms were locked in the clinic, and the sentinel form data was inserted into an Excel database on a computer at the clinic that was locked in the office of the Sister in Charge. The sentinel forms were taken from the site after the sentinel research and locked at the Department of Health, and Excel Files inserted into a national database that is password protected. Data was used during data verification and analysis and for the integration of the bio-behavioural dataset by NDoH and NRI staff.

## **Integrated BSS Survey with HIV and STI Testing – The Findings**

### ***Survey Sample***

The integrated Sentinel Bio-Behavioural Surveillance Survey was conducted among STI clients at Lae Friends (STI) Clinic, Angau Hospital. The survey was conducted for a period of 7 weeks (2<sup>nd</sup> Sept-17<sup>th</sup> Oct 2008) and 397 men (175; 44.1%) and women (222; 59.5%) were approached. From these 397; 300 men and women consented and completed interviews, HIV and Syphilis tests. Of the sample of 300; 128 (42.7%) were male and 172 (57.3) were female.

## Refusals

NRI interviewers documented consent and refusals, and these were given to clinic staff to inform if consent for testing had been given. As later discussed, there were 24.4% refusals at varying stages of the sentinel collection, and the team's tracking of this information shows varied patterns of refusals for interviews, but particularly for STI and HIV testing.

**Table 1. Composition of Refusals during STI sentinel data collection by gender**

Status	Sex		Total
Refusals	male	female	
Refused interview	6 6.2%	4 4.1%	10 10.3%
Refused interview and testing	1 1.0%	0 .0%	1 1.0%
Refuse HIV testing when first approached	20 20.6%	20 20.6%	40 41.2%
Refuse testing after interview	2 2.1%	0 .0%	2 2.1%
Refuse testing after counseling	13 13.4%	12 12.4%	25 25.8%
Refuse STI testing when first approached	0 .0%	1 1.0%	1 1.0%
Refuse both testing when first approached	1 1.0%	8 8.2%	9 9.3%
<b>Subtotal</b>	<b>43</b>	<b>45</b>	<b>88</b>
<b>Other categories</b>			
Cease interview/did not complete	1 1.0%	0 .0%	1 1.0%
HW not available to do tests	1 1.0%	2 2.1%	3 3.1%
Tested against consent	1 1.0%	2 2.1%	3 3.1%
Not included. Test done 2 weeks prior to survey	1 1.0%	1 1.0%	2 2.1%
<b>Total</b>	<b>47</b> 48.5%	<b>50</b> 51.5%	<b>97</b> 100.0%

A total of 397 participants were approached to take part until 300 STI clients were recruited within a 7 week period, and a quarter (24.4%) of all clients who were approached, refused to be tested and or interviewed. Of these 97 participants: most (88;90.7%) were categorized as refusals, and the others (11; 9.3%) were excluded from the sample for a variety of reasons, such as, the health worker not being available, HIV test done in last 2 weeks, or being tested without consent. More refused testing (87.5%) than interviews (12.5%). People refused testing at a number of points: most refused testing when first approached (51.5%); after interview (2.1%), after counseling (25.8%), and some left after counseling or while waiting for the test. The others, one person (1.0%) ceased interview, while 3 persons (3.1%) could

not get a test due to health worker not being available, (3.1%) were tested against consent and (2.1%) were not included because they had been tested two weeks earlier before the survey was being conducted. This degree of informed refusals indicates that the environment created allowed for choice to take place; while unconsenting testing indicates that choice is not always respected.

### *Demographics*

Most STI clients came from provinces of higher prevalence and were concentrated in the Momase and Highlands regions: Morobe (27.7%); Simbu (21.0%); EHP (16.0%); SHP (8.7%); ESP (7.0%); WHP (6.0%); Madang (4.3%); and Enga (3.7%). The rest were distributed across other provinces in the Southern and Islands regions (see Table 2 below). The majority (55.3%) came from the Highlands, with another 39.7% coming from Momase and very few from Southern (3.3%) and the Islands (1.7%) regions.

### **Province and Region of Origin**

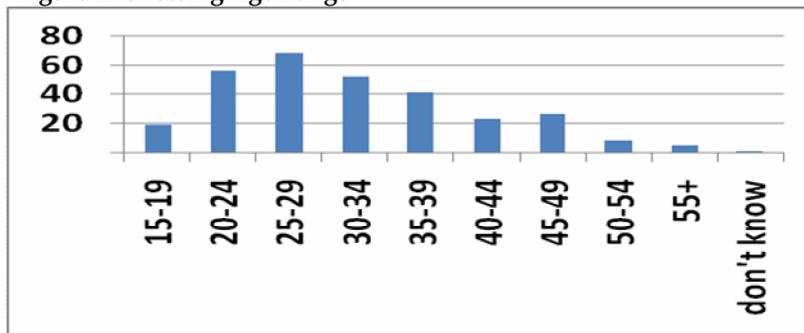
**Table 2. Province and region of origin by gender**

Region	Sex				Total	%
	male	%	female	%		
<b>Southern</b>	<b>6</b>	<b>2%</b>	<b>4</b>	<b>1.3%</b>	<b>10</b>	<b>3.3%</b>
Gulf	2	0.7%	1	0.3%	3	1.0%
Central	1	0.3%	2	0.7%	3	1.0%
Oro	3	1.0%	1	0.3%	4	1.3%
<b>Highlands</b>	<b>66</b>	<b>22%</b>	<b>100</b>	<b>33.3%</b>	<b>166</b>	<b>55.3%</b>
Southern Highlands	15	5.0%	11	3.7%	26	8.7%
Enga	3	1.0%	8	2.7%	11	3.7%
Western Highlands	11	3.7%	7	2.3%	18	6.0%
Simbu	20	6.7%	43	14.3%	63	21.0%
Eastern Highlands	17	5.7%	31	10.3%	48	16.0%
<b>Momase</b>	<b>52</b>	<b>17.3%</b>	<b>67</b>	<b>22.3%</b>	<b>119</b>	<b>39.7%</b>
Morobe	30	10.0%	53	17.7%	83	27.7%
Madang	6	2.0%	7	2.3%	13	4.3%
East Sepik	14	4.7%	7	2.3%	21	7.0%
Sandaun	2	0.7%	0	0.0%	2	0.7%
<b>Islands</b>	<b>4</b>	<b>1.3%</b>	<b>1</b>	<b>0.3%</b>	<b>5</b>	<b>1.7%</b>
Manus	1	0.3%	1	0.3%	2	0.7%
East New Britain	1	0.3%	0	0.0%	1	0.3%
West New Britain	1	0.3%	0	0.0%	1	0.3%
AR Bougainville	1	0.3%	0	0.0%	1	0.3%
<b>Total</b>	<b>128</b>	<b>42.7%</b>	<b>172</b>	<b>57.3%</b>	<b>300</b>	<b>100.0%</b>

## Age Range and Gender

Participants' ages ranged from 15 years to 68 years old. Only a quarter of the sample was in the 15-24 age range; with 6.3 % between 15-19 years and 18.7% between 20-24 years old. Close to a third of the sample were in their thirties. Over twenty percent (20.6%) of the sample was over the age of forty, with 16.3% in their forties and just over four percent (4.3%) fifty years and older.

Figure 1: Showing Age Range



More STI clients (58.7%) were between the ages of 20 and 34 years old. One third more female than male youth, and slightly more women (57.3%) than men (42.7%) overall participated in the sentinel research. The wide spread of ages illustrate the range of ages of men and women accessing STI services and treatment, and the need for a variety of information.

Table 3: Percentage distribution of age, by sex

Characteristics	STI Sample Distribution					
	% Male	(n)	%Female	(n)	%Total	(n)
<b>Five yr age group</b>						
15-19	1.7 %	(5)	4.7 %	(14)	6.3 %	(19)
20-24	8.0 %	(24)	10.7 %	(32)	18.7 %	(56)
25-29	10.0 %	(30)	12.7 %	(38)	22.7 %	(68)
30-34	6.3 %	(19)	11.0 %	(33)	17.3 %	(52)
35-39	7.3 %	(22)	6.3 %	(19)	13.7 %	(41)
40-44	4.3 %	(13)	3.3 %	(10)	7.7 %	(23)
45-49	3.3 %	(10)	5.3 %	(16)	8.6 %	(26)
50+	1.3 %	(4)	3.0 %	(9)	4.3 %	(13)
Don't Know	0.3 %	(1)	0.0 %	(0)	0.3 %	(1)
Missing	0.0 %	(0)	0.3 %	(1)	0.3 %	(1)
<b>Total</b>	<b>42.7 %</b>	<b>(128)</b>	<b>57.3 %</b>	<b>(172)</b>	<b>100.0 %</b>	<b>(300)</b>

## Education

A total of 80.1% of those interviewed reported they had been to school. Close to half (48%) reported primary school as the highest level of education they had attended. Close to a quarter (24.0%) reported secondary school as the highest level of education they had completed, and 4.7% reported that they had gone to vocational school. Less (3.4%) had completed tertiary, college or university education. A range of literacy and education were evident, with a concentration of close to two thirds (64.4%) that had either no education (19.6%) or only primary levels (48.0%); indicating the need for tailoring of information through different mediums.

**Table 4a. Percentage distribution of level of education**

Level of Education	Male		Female		Total	
Haven't gone to school	5.3	% (16)	14.3	% (43)	19.6	% (59)
Primary education	19.3	% (58)	28.7	% (86)	48	% (144)
Secondary school	12.3	% (37)	11.7	% (35)	24	% (72)
Vocational/technical	3.0	% (9)	1.7	% (5)	4.7	% (14)
Tertiary/college	1.7	% (5)	1.0	% (3)	2.7	% (8)
University	0.7	% (2)	0.0	% (0)	.7	% (2)
Missing	0.3	% (1)	0.0	% (0)	.3	% (1)
<b>Total</b>	<b>42.7</b>	<b>% (128)</b>	<b>57.3</b>	<b>% (172)</b>	<b>100.0</b>	<b>% (300)</b>

**Table 4b. Percentage distribution of level of education by age group**

Age group	Level of education completed												Total	
	never attended school		primary school		secondary school		vocational/technical		tertiary/college		university			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
15-19	3	1.0%	10	3.4%	6	2.0%	0	.0%	0	.0%	0	.0%	19	6.4%
20-24	9	3.0%	23	7.7%	21	7.0%	3	1.0%	0	.0%	0	.0%	56	18.8%
25-29	13	4.4%	28	9.4%	18	6.0%	5	1.7%	2	.7%	2	.7%	68	22.8%
30-34	5	1.7%	32	10.7%	12	4.0%	2	.7%	1	.3%	0	.0%	52	17.4%
35-39	5	1.7%	27	9.1%	6	2.0%	3	1.0%	0	.0%	0	.0%	41	13.8%
40-44	6	2.0%	8	2.7%	5	1.7%	1	.3%	3	1.0%	0	.0%	23	7.7%
45-49	12	4.0%	9	3.0%	3	1.0%	0	.0%	1	.3%	0	.0%	25	8.4%
50-54	2	.7%	5	1.7%	0	.0%	0	.0%	1	.3%	0	.0%	8	2.7%
55+	3	1.0%	1	.3%	1	.3%	0	.0%	0	.0%	0	.0%	5	1.7%
don't know	1	.3%	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%	1	.3%
<b>Total</b>	<b>59</b>	<b>19.8%</b>	<b>143</b>	<b>48.0%</b>	<b>72</b>	<b>24.2%</b>	<b>14</b>	<b>4.7%</b>	<b>8</b>	<b>2.7%</b>	<b>2</b>	<b>.7%</b>	<b>298</b>	<b>100.0%</b>

## Marital Status

The majority of the participants reported ever being married (258; 86.0%); with 13.3% (40) who had not yet married. The mean age at marriage was 21. Of those married, just over a

quarter (25.4%) were married by the age of 19; with the majority (62.7%) married by the age of 24. While 13.8% married between the ages of 25 and 29; only 7.4% married over the age of thirty. Of these, more men (16.2%) than women (1.8%) married later, and two times more women married younger. Overall, 41.0% of the sample had no children; of those 59% who had children, close to all, except for four people, were married.

**Table 5: Sample distribution by ever been married, age at first marriage, and ever been widowed, separated or divorced**

Characteristics	Distribution in percentage by sex					
	Male		Female		Total	
	%	(n)	%	(n)	%	(n)
<b>Ever been married</b>						
Yes	76.6	(98)	93.0	(160)	86.0	(258)
No	22.7	(29)	6.4	(11)	13.3	(40)
Missing	0.8	(1)	0.6	(1)	0.7	(2)
<b>Total</b>	<b>100.0</b>	<b>(128)</b>	<b>100.0</b>	<b>(172)</b>	<b>100.0</b>	<b>(300)</b>
<b>Age at first marriage</b>						
< 15	3.0	(3)	3.1	(5)	3.1	(8)
15 – 19	11.1	(11)	29.2	(47)	22.3	(58)
20 – 24	45.5	(45)	32.3	(52)	37.3	(97)
25 – 29	24.2	(24)	7.5	(12)	13.8	(36)
30 – 34	15.2	(15)	0.6	(1)	6.2	(16)
35 – 39	1.0	(1)	1.2	(2)	1.2	(3)
40 – 44	0.0	(0)	0.0	(0)	0.0	(0)
Not sure	0.0	(0)	25.5	(41)	15.8	(41)
Missing	0.0	(0)	0.6	(1)	0.4	(1)
<b>Sub-total</b>	<b>100.0</b>	<b>(99)</b>	<b>100.0</b>	<b>(161)</b>	<b>100.0</b>	<b>(260)</b>
Never married		(29)		(11)		(40)
<b>Total</b>		<b>(128)</b>		<b>(172)</b>		<b>(300)</b>
<b>Ever been widowed, separated, divorced</b>						
Widowed	1.0	(1)	4.3	(7)	3.1	(8)
Separated	6.1	(6)	16.1	(26)	12.4	(32)
Divorced	3.0	(3)	6.8	(11)	5.4	(14)
None	88.9	(88)	72.0	(116)	79.1	(204)
Missing	1.0	(1)	0.6	(1)	0.8	(2)
<b>Sub-total</b>	<b>100.0</b>	<b>(99)</b>	<b>100.0</b>	<b>(161)</b>	<b>100.0</b>	<b>(258)</b>
Never Married		(29)		(11)		(40)
<b>Total</b>		<b>(128)</b>		<b>(172)</b>		<b>(300)</b>

Of those who were married, 12.4% reported being separated and 5.4% divorced, with a few who were widowed (3.1%). A third of the sample (84; 32.3%) was in polygamous marriages, and considerably more women (71; 83.5%) than men (14; 16.5%) reported being in marriages with more than one wife. Of those in polygamous marriages, most men (13; 92.8%) had 2

wives and one had three; while 59.2% (42) of women in polygamous relationships reported that their husband had only 2 wives. A large number 39.4% (28) had husbands who had 3 to 10 wives, with most having 3 to 5 wives. Of those in polygamous marriages, most identified their denomination as: Lutheran (33.7%); SDA (22.9%); Pentecostals (13.3%), Evangelical (10.8%), Revivalist (9.6%), and Catholic (7.2%), with less (1.2%) in both Jehovah Witness and United churches.

Certainly polygamy indicates that messages of being faithful to only one partner would not be the best targeted prevention message for polygamous couples, and requires consideration in the formulation of tailored prevention and behaviour change messages.

**Table 6a: Sample distribution of number of spouses and polygamous marriages**

Number of spouses currently have	# wives you have	# wives husband has	Total
0	1.0% (1)	0.0% (0)	0.4% (1)
1	84.8% (84)	55.9% (90)	66.9% (174)
2	13.1% (13)	26.1% (42)	21.2% (55)
3	1.0% (1)	9.3% (15)	6.2% (16)
4	0.0% (0)	4.3% (7)	2.7% (7)
5	0.0% (0)	2.5% (4)	1.5% (4)
8	0.0% (0)	0.6% (1)	0.4% (1)
10	0.0% (0)	0.6% (1)	0.4% (1)
Missing	0.0% (0)	0.6% (1)	0.4% (1)
<b>Sub-Total</b>	<b>100.0% (99)</b>	<b>100.0% (161)</b>	<b>100.0% (260)</b>
Never Married		(11)	(40)
<b>Total</b>	<b>(128)</b>	<b>(172)</b>	<b>(300)</b>

**Table 6b. Polygamous distribution by gender**

Characteristics	Distribution in percentage by sex		
	Male % (n)	Female % (n)	Total % (n)
<b>Number of spouses currently have</b>	<b># wives you have</b>	<b># wives husband have</b>	<b>Total</b>
2	92.9 % (13)	59.2 % (42)	64.7 % (55)
3	7.1 % (1)	21.1 % (15)	18.8 % (16)
4	0.0 % (0)	9.9 % (7)	8.2 % (7)
5	0.0 % (0)	5.6 % (4)	4.7 % (4)
8	0.0 % (0)	1.4 % (1)	1.2 % (1)
10	0.0 % (0)	1.4 % (1)	1.2 % (1)
Missing	0.0 % (0)	1.4 % (1)	1.2 % (1)
<b>Sub-Total</b>	<b>100.0 % (14)</b>	<b>100.0 % (71)</b>	<b>100.0 % (85)</b>

**Table 7: Christian Denomination by number of spouse**

Christian denomination	Number of spouses										Total			
	2		3		4		5		8				10	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Lutheran	18	21.7%	7	8.4%	2	2.4%	0	0.0%	0	0.0%	1	1.2%	28	33.7%
Catholic	5	6.0%	0	0.0%	0	0.0%	1	1.2%	0	0.0%	0	0.0%	6	7.2%
United	1	1.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.2%
Pentecostals	9	10.8%	0	0.0%	1	1.2%	0	0.0%	1	1.2%	0	0.0%	11	13.3%
SDA	11	13.3%	5	6.0%	2	2.4%	1	1.2%	0	0.0%	0	0.0%	19	22.9%
Jehovah Witness	0	0.0%	1	1.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.2%
Revival Churches	3	3.6%	2	2.4%	2	2.4%	1	1.2%	0	0.0%	0	0.0%	8	9.6%
Evangelical churches	7	8.4%	1	1.2%	0	0.0%	1	1.2%	0	0.0%	0	0.0%	9	10.8%
<b>Total</b>	54	65.1%	16	19.3%	7	8.4%	4	4.8%	1	1.2%	1	1.2%	83	100.0%

Two thirds (66.0%) were currently married and living with a spouse with whom they were having a sexual relationship. A few men (3.7%; 11) reported that they were married but were living with another sexual partner, and a few others (2.0%; 6) said that they were married and neither living with a spouse or other sexual partner. Some (9.0%; 27) said that they were not married but were living with a sexual partner, but more (19.0%; 57) said that they were not married or living with a partner.

**Table 8: Marriage, living and sexual partner relationships**

Distribution by sex of STI clients current marriage, living and sexual partner relationships						
	Males		Females		Total	
	%	n	%	n	%	n
currently married, live with spouse	60.9%	(78)	69.8%	(120)	66.0%	(198)
currently married, but living with other sexual partner	8.6%	(11)	0.0%	(0)	3.7%	(11)
currently married, not living with spouse or other sexual partner	1.6%	(2)	2.3%	(4)	2.0%	(6)
not married but living with a sexual partner	11.7%	(15)	7.0%	(12)	9.0%	(27)
not married and not living with a sexual partner	17.2%	(22)	20.3%	(35)	19.0%	(57)
Missing	0.0%	(0)	0.6%	(1)	0.3%	(1)
<b>Total</b>	100.0%	(128)	100.0%	(172)	100.0%	(300)

Of those who answered that they were living with a sexual partner, 16.3% had been with partner for less than a year; 25.6% for between 0-3 years; 32.2% less than 5 years, and 33.2% were in relationships that had lasted for more than 10 years. Only men reported that they were married but living with a sexual partner, and slightly more men than women were not married but living with a sexual partner.

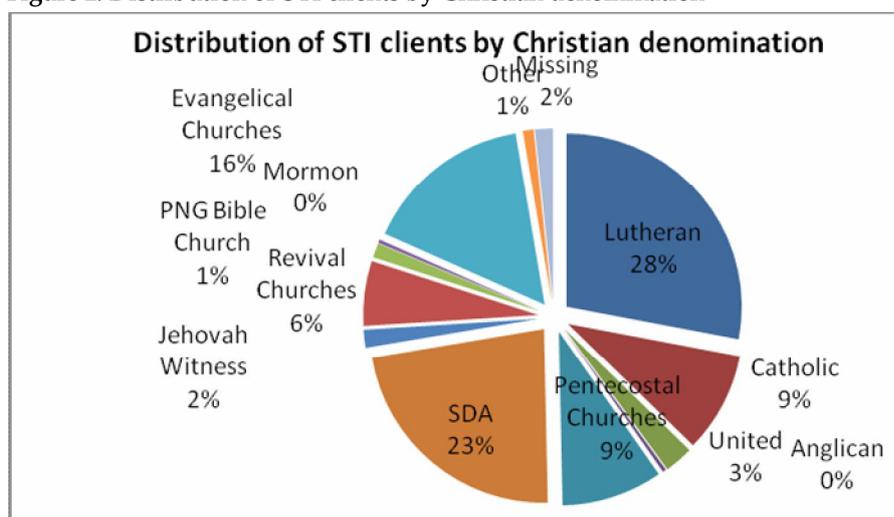
## Employment Status

The majority (68.6%) reported that they did not have paid employment; with only around a third (31.4%) with a salary job. Of those who had no salaried job: 59.7% were unemployed or dependant; 34.1% were involved in the informal sector and 6.3% were students.

## Religion

The majority were Lutheran (28.0%), SDA (22.7%) and Evangelical (15.7%); with some Pentecostal (9.3%), Catholic (9.3%) and Revivalist. Small numbers were spread across the United, Jehovah Witness, PNG Bible, Mormon and Anglican Churches.

**Figure 2: Distribution of STI clients by Christian denomination**



**Table 9: Distribution of STI clients by Christian denomination**

Christian denomination	Percent (%)	(n)
Lutheran	28.0	(84)
Catholic	9.3	(28)
United	2.7	(8)
Anglican	0.3	(1)
Pentecostal Churches	9.3	(28)
SDA	22.7	(68)
Jehovah Witness	1.7	(5)
Revival Churches	6.0	(18)
PNG Bible Church	1.3	(4)
Mormon	0.3	(1)
Evangelical Churches	15.7	(47)
Other	1.0	(3)
Missing	1.7	(5)
<b>Total</b>	<b>100.0</b>	<b>(300)</b>

## Alcohol

Over half (52.5%) reported that they drank alcohol and the greatest majority of these (93.6%) drank beer. Less drank spirits (4.5%) or wine (0.6%). Of those who drank, 6.4% drank more than twice a week, with half drinking every day, and 18.5% drank once or twice a month. Half (50.3%) drank 10 or more drinks on a typical day when drinking and 32.5% drank between 5 to 9 drinks on a typical drinking day. People drank often, with 30.0% drinking weekly or fortnightly and most people drank a lot, with half drinking 10 or more drinks on a typical day when they were drinking. Close to a quarter identified that they sporadically drink when the opportunity arises.

**Table 10: Distribution of STI clients who consume alcohol**

Characteristics	STI clients Sample Distribution		
	Male % (n)	Female % (n)	Total % (n)
<b>Drink alcohol</b>			
Yes	70.9 (90)	39.0 (67)	52.5 (157)
No	29.1 (37)	61.0 (105)	47.5 (142)
<b>Total</b>	<b>100.0 (127)</b>	<b>100.0 (172)</b>	<b>100.0 (299)</b>
<b>Type of alcohol usually drink</b>			
Beer	97.8 (88)	88.1 (59)	93.6 (147)
Wine	0.0 (0)	1.5 (1)	0.6 (1)
Hard-stuff/Spirits	1.1 (1)	9.0 (6)	4.5 (7)
Other	0.0 (0)	1.5 (1)	0.6 (1)
missing	1.1 (1)	0.0 (0)	0.6 (1)
<b>Total</b>	<b>100.0 (90)</b>	<b>100.0 (67)</b>	<b>100.0 (157)</b>
<b>Number of drinks</b>			
1-2 drinks	1.1 (1)	16.4 (11)	7.6 (12)
3-4 drinks	3.3 (3)	16.4 (11)	8.9 (14)
5-6 drinks	16.7 (15)	28.4 (19)	21.7 (34)
7-9 drinks	6.7 (6)	16.4 (11)	10.8 (17)
10 or more drinks	71.1 (64)	22.4 (15)	50.3 (79)
missing	1.1 (1)	0.0 (0)	0.6 (1)
<b>Total</b>	<b>100.0 (90)</b>	<b>100 (67)</b>	<b>100.0 (157)</b>

**Table 11a: Number of times alcohol is consumed**

	Frequency	Percent	Valid %
every day	5	1.7	3.2
once or twice a week	18	6.0	11.5
3 or more times a week	5	1.7	3.2
once or twice a fortnight	19	6.3	12.1
once or twice a month	29	9.7	18.5
Never	2	0.7	1.3
Other	79	26.3	50.3
<b>Total</b>	<b>157</b>	<b>52.3</b>	<b>100.0</b>
Missing	143	47.7	
	300	100.0	

**Table 11b. Number of drinks containing alcohol taken on a typical day**

	Frequency	Percent	Valid Percent
1-2 drinks	12	4.0	7.7
3-4 drinks	14	4.7	9.0
5-6 drinks	34	11.3	21.8
7-9 drinks	17	5.7	10.9
10 or more drinks	79	26.3	50.6
Total	156	52.0	100.0
Missing	144	48.0	
	300	100.0	

**Drugs**

Over a quarter of the sample (27.0%) reported ever taking drugs. Of those who had used drugs, more were male (69.1%) than female (30.9%). Close to half (48.8%) had taken marijuana or 1.3% ice, and the other half said they had used another type of drug in the last 12 months, but the names or specified the drug taken are unknown.

**Table 12: Distribution of STI clients who had consumed drugs**

STI Clients who have taken drugs					
Take drugs	Sex				
	male%	(n)	female%	(n)	Total% (n)
Yes	43.8%	(56)	14.5%	(25)	27.0% (81)
No	56.3%	(72)	85.5%	(147)	73.0% (219)
<b>Total</b>	<b>100.0%</b>	<b>(128)</b>	<b>100.0%</b>	<b>(172)</b>	<b>100.0% (300)</b>
<b>Injecting drug users</b>					
Yes	0.0%	(0)	0.6%	(1)	0.3% (1)
No	100.0%	(123)	99.4%	(171)	99.7% (294)
<b>Total</b>	<b>100.0%</b>	<b>(123)</b>	<b>100.0%</b>	<b>(172)</b>	<b>100.0% (295)</b>

Of these who had taken drugs, one female STI client reported injecting a drug not prescribed to them during the past 12 months; however she did not answer if she used a clean needle. She was aware that a person could get HIV by using a needle already used by somebody else. Cross analysis indicates that she also had exchanged sex. A condom was used at last sex and last paid sex. She was negative for both HIV and syphilis. Injecting practices rarely ever happen in isolation and injecting practices requires more research in the geographic areas and groups where it is reported. Further questions will be developed to optimize information on surveillance BSS surveys on injecting drug practices when reported.

## Sexual Practice

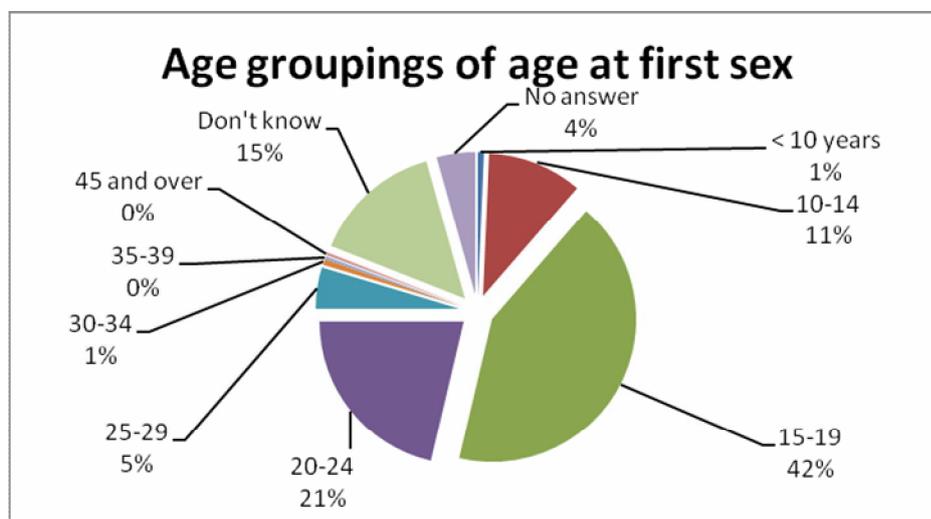
### Sexual Debut

Age of sexual debut was early in this sample with 11.4% (32) having sex before the age of 15; with some reporting their first penile vaginal sex at an extremely young age. The median age of first sex was 19 years of age. Close to half (42.3%) had sex between the ages of 15-19; and by 19, 161 (53.7%) had already had sex. Between 20 and 24 years old: 21.3% had had sex, and by the age of 24 - 75% of the entire sample had already had sex. By the age of 30, all except for four people had already had sex; while 44 (14.7%) could not remember when they first had sex.

Table 13: Age of first sex, by sex

Age groupings of age at first sex	Sex				Total	
	male		female			
	n	%	n	%	n	%
< 10 years	2	.7%	0	.0%	2	.7%
10-14	17	5.7%	15	5.0%	32	10.7%
15-19	52	17.3%	75	25.0%	127	42.3%
20-24	25	8.3%	39	13.0%	64	21.3%
25-29	6	2.0%	8	2.7%	14	4.7%
30-34	1	.3%	1	.3%	2	.7%
35-39	0	.0%	1	.3%	1	.3%
45 and over	0	.0%	1	.3%	1	.3%
Don't know	14	4.7%	30	10.0%	44	14.7%
No answer	11	3.7%	2	.7%	13	4.3%
<b>Total</b>	<b>128</b>	<b>42.7%</b>	<b>172</b>	<b>57.3%</b>	<b>300</b>	<b>100.0%</b>

Figure 3: Age Distribution at first sexual debut by age group



## Oral and Anal Sex

Almost a quarter (24.7%) of the sample reported that they had had oral sex, and of these more men (60.8%) than women (39.2%) had experienced oral sex. Thirty people reported that they had had anal sex in the last twelve months. Of those 30 who had had anal sex, 43.4% of both men (11) and women (19) reported having anal sex within the last 12 months; and in the past year only 11.5% (8) (5M; 3F) used a condom at last anal sex. The majority of those who had anal sex were women. Three men reported male to male anal sex in the last 3 months and two had three partners each.

**Table 14. Ever had oral sex by gender**

Ever had oral sex	Sex				Total	
	male		female			
	n	%	n	%	n	%
yes	45	15.0%	29	9.7%	74	24.7%
no	83	27.7%	143	47.7%	226	75.3%
<b>Total</b>	128	42.7%	172	57.3%	300	100.0%

**Table 15. Ever had anal sex in the last 12 months by gender**

Ever had anal sex in last 12 months	Sex				Total	
	male		female			
	n	%	n	%	n	%
yes	11	15.9%	19	27.5%	30	43.5%
no	18	26.1%	21	30.4%	39	56.5%
<b>Total</b>	29	42.0%	40	58.0%	69	100.0%

**Table 16. Condom use at last sex by gender**

Condom use at last anal sex	Sex				Total	
	male		female			
	n	%	n	%	n	%
yes	5	7.2%	3	4.3%	8	11.6%
no	24	34.8%	37	53.6%	61	88.4%
<b>Total</b>	29	42.0%	40	58.0%	69	100.0%

**Table 17. Condom used at last sex with male partner**

Condom used at last anal sex	Number of male sexual partners												Total	
	0		1		2		3		4		10			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
yes	4	5.8	1	1.4	1	1.4	2	2.9	0	.0	0	.0	8	11.6
no	25	36.2	27	39.1	5	7.2	2	2.9	1	1.4	1	1.4	61	88.4
<b>Total</b>	29	42.0	28	40.6	6	8.7	4	5.8	1	1.4	1	1.4	69	100.0

### **Sexual Partners and Numbers of Sex Partners**

In the last 12 months, 57.3% reported having only one partner. Some (17; 5.7%) said they had not had sex in the last year; the rest 36.7% had more than one partner. In the last 3 months, 41.7% females said they had only one male partner and 21.1% of male respondents reported having only one female partner. No women reported having a female partner; while one man (0.3%) reported having one male sexual partner in the past three months. Close to half (45.0%) reported that they did not have any sexual partners within the last three months.

Of those who had more than one partner in the last three months: 8.4% of men and only 0.7% of women had more than one regular spouse or live-in sexual partner. Both men and women (12.6%) reported that they had 2 or more non-regular partners in last 3 months. Of these 16.1% of men and 12.3% of women reported having sex with more than 1 partner in the last 3 months with different types of regular and non-regular partners. In the past year, 22.6% of men and 13.5% of women had 2 or more partners with 36.7% overall reporting between 2-20 sexual partners in the last year. Polygamy, with a number of other wives creates another layer to other regular and non-regular concurrent partnerships. This creates broad sexual networks which can facilitate the spread of HIV.

Generally men had less belief that their partners were having other partners; while more women thought that their male partners were having other sexual partners. When asked if they think that their partners had other sexual partners, some (9.7%) men thought their wives were having other sexual partners, while (35.5%) more were not sure. More (55.6 %) women said that their husbands had other partners, while 22.5% were not sure. This data illustrates socio-culturally expected and accepted patterns of female fidelity and male infidelity.

### **Exchange of Sex**

Some (14.3%; 16) men reported paying money or other goods (money, gifts, drinks or food) for sex in the past 12 months. Only 2 (15.4%) of the men said they used a condom at last paid sex. Some (17; 11.6%) women reported being paid money or receiving other goods (money gifts, drinks or food) for sex in the last 12 months. A third (33.3%) of those women who exchanged sex reported that they had used a condom at last paid sex. More women than men reported using a condom when exchanging sex for money or goods. Half of those women being paid for sex were married women. Of these, only 3 had used a condom at last paid sex; while no woman who had exchanged sex had used a condom at last sex with their husbands. This lack of condom use with husbands and clients creates bridges between different sexual networks.

**Table 18. Marital status by condom used at last paid sex**

Sex			Condom used at last paid sex				Total	
			yes		no			
			n	%	n	%	n	%
male	Married	yes	2	6.1	11	33.3	13	39.4
		no	0	0.0	3	9.1	3	9.1
female	Married	yes	3	9.1	5	15.2	8	24.2
		no	3	9.1	6	18.2	9	27.3
Total All			8	24.2	25	75.8	33	100.0

**Table 19. Condom used at last paid sex by condom used with husband at last sex**

Sex			Condom used at last sex with husband/wife				Total	
			yes		no			
			n	%	n	%	n	%
Male	Condom used at last paid sex	yes	1	3.2	1	3.2	2	6.5
		no	2	6.5	11	35.5	13	41.9
female	Condom used at last paid sex	yes	0	0.0	6	19.4	6	19.4
		no	4	12.9	6	19.4	10	32.3
All Total			7	22.6	24	77.4	31	100.0

### Forced Sex

Over three quarters (76.0%) of women interviewed said that they had been forced by their husband to have sex when they did not want to; while 42.6% of men said that they had forced their wife when she did not want to.

Close to a fifth (17.2%) of men said that they had forced a woman to have sex when she didn't want to; and over a third (35.0%) of women said that they had been forced to have sex when they didn't want to. Of these women, 39 (87.0%) reported that they were forced by an individual, while 6 (13.0%) said that they were forced by a group of men. This degree of sexual violence against women is high and indicates the importance of addressing sexual violence in the context of HIV in PNG.

### Condom Use and Preferences

Of all STI clients, close to ninety percent (86.7%; 80M, 106F) did not use a condom at last sex with a regular partner. Very few women 18 (7.2%) reported they had used a condom at last sex with their husband and only 12 (4.8%) men said they used a condom at last sex with their wives and 3.8% did not use a condom at last sex with non-regular partner.

### Circumcision, Inserts and Cutting

Male STI clients were asked if they had ever been circumcised. Of the 128 male respondents, a fifth (26; 20.3%) said they were circumcised. Over half of those circumcised had it done by

a friend, with a fifth being done at both a clinic or by a relative; only one person reported circumcising himself.

More (54; 42.5%) male STI clients reported that they had slit their penile fore-skin. Most (36; 66.7%) had it done by a friend, a third of those reported having a penile slit were done by a relative or at a clinic. Of those who reported having had their penile fore-skin slit, more than three quarters (42; 77.8%) used a razor blade and less than a quarter (12; 22.2%) reported either using scalpel or by other methods.

Male STI clients were also asked if they had inserted small objects under their penis foreskin and 16.4% said they had inserts. Of these, a quarter had left them in for a month and three quarters still had them.

### *Sexually Transmitted Infections*

#### **Knowledge of Symptoms**

Participants interviewed were asked to identify symptoms of sexually transmitted infections STI in men and women. Three quarters of those interviewed said that they did not know symptoms of STI in women and sixty percent not know symptoms in men. An extremely low percentage of the sample was able to identify STI symptoms in men and women when asked. However, as discussed below, over two thirds of the sample when prompted identified that they had had particular STI symptoms over the last three months. Of all surveyed, 40.7% (122; 62M, 60F) had previously been treated for an STI. This indicates ongoing lack of condom use, repeat STI infections and increase risk of HIV.

Around three quarters (222; 74.0%) of those interviewed said that they did not know symptoms of STI in women and 2 people gave no answer. From the quarter (76) who knew of any symptoms of STI in women; 67.1% reported genital discharge; 38.2% identified abdominal pain; 22.4% answered with burning pain on urination; 13.2% identified genital sores and ulcers and 13.2% identified genital itchiness; 7.9% said foul smelling discharge; and 7.9% reported swelling in the groin area as a symptom of STI in women. Other STI symptoms reported included: 9 people said pain during sex, 3 people said backache, 1 diarrhea and weight loss.

**Table 21: Knowledge of STI Symptoms in Women**

<b>STI Symptoms</b>	<b>Yes (n = 76)</b>	<b>(%)</b>
<b>Genital Discharge</b>	51	67.1%
<b>Foul smelling discharge</b>	6	7.9%
<b>Abdominal pain</b>	29	38.2%
<b>Burning pain when urinating</b>	17	22.4%
<b>Genital Sores and Ulcer</b>	10	13.2%
<b>Swelling in the groin area</b>	6	7.9%
<b>Itching</b>	10	13.2%.

\* Multiple Responses

Sixty (178; 59.3%) percent did not know symptoms in men, and 4 (1.4%) persons did not answer. Of those 112 participants reporting knowing STI symptoms in men: 25.9% genital sores/ulcers; 83% reported genital discharge in men; 47.3% identified burning pain on urination; 16.9% participants said swelling in the groin area; and another 8.9% reported genital itching” as STI symptoms in men. Other knowledge of STI symptoms in men reported included loss of weight, abdominal pain, backache, fungi type growth, pain in groin area, yellow urine, swelling of penis and smelly breath. The data illustrates that STI clients had low knowledge of STI symptoms.

**Table 22: Knowledge of STI Symptoms in Men**

Symptoms in Men	Yes	
	(n = 112)	(%)
Genital Discharge	93	83.0%
Burning pain when urinating	56	50.0%
Genital Sores and Ulcer	29	25.9%
Itching	10	8.9%
Swelling in the groin area	19	16.9%

Knowledge of STI was gendered, in that women were more familiar with symptoms in women and men more familiar with symptoms in men. However, more men (51.0%) knew about symptoms in women, than women (14.0%) knew about symptoms in men. Discharge, abdominal pain, burning pain during urination and were more often mentioned by women as symptoms for women; and discharge, pain during urination, ulcers and sores and swelling in the groin were most identified by men as symptoms of men.

### Experience of STI Symptoms

Over two-thirds (67.3%; 202) of those interviewed said that they had experienced 506 occurrences of symptoms of STI over the past three months, and many reported multiple symptoms. Of those that had symptoms in the past three months: over two-thirds had experienced genital itchiness (67.3%) and/or had burning pain when urinating (64.9%); and over half had genital ulcers or sores (53.0%) and/or pain during sex (52.5%). This indicates the need to increase condom use and to understand why people are presenting earlier with their STI symptoms. Unfortunately most who reported having symptoms did not understand what the symptoms of STI were.

**Table 23: Proportion of STI symptoms experienced in the last 3 months**

Symptoms	Number STI clients (n = 202)	Percentage (%)
Pain during sex	81	(52.5)%
Genital Ulcer	107	(53.0%)
Burning pain during urination	131	(64.9%);
Genital Itching	136	(67.3%)

\*Multiple responses

### **Treatment Seeking for STI**

Of those 202 who had experienced symptoms in the past 3 months; 65.8% or 133 (M91; F42) said that they had sought treatment. When asked what was done for treatment: 67.7% sought advice from a STI clinic or health facility; 21.1% took STI medication from friends/relatives; 0.8% sought medical treatment from a pharmacy, and 11.3% later said that they did not seek treatment.

### **Knowledge of HIV and Stigma Attitudes**

Majority of women 127 (42.3%) and men 118 (39.3%) knew that a healthy looking person could have HIV. Over a third (31.6%) had ever had a close relative or friend who had become sick or died from AIDS. Of these, 63 (21.4%) reported that they had a close relative who has become sick or has died of AIDS; while 30 (10.2%) reported they knew a close friend.

Over half (63.7%) said that if they had a family member became ill with HIV that they would not want it to remain a secret; while a third (32.3%) said they would keep a family member's positive status a secret. The rest (4.0%) were unsure about what they would do. The reported continued secrecy about the HIV status of loved ones illustrates the continued stigma around people living with HIV. Most (68.5%) of this sample had not experienced the death of a close relative or friend from AIDS.

The majority said that they could protect themselves by having only one uninfected faithful partner (77.8%); that abstaining would protect (80.3%); and that sharing needles would transmit HIV (89.7%). Only just over half (55.3%;166) agreed that people can protect themselves from HIV by using a condom correctly every time they have sex, 11.7% were unsure. A third (33.0%) did not know the importance of the protective effect condoms have in relation to protection from sexually transmitted infections and HIV transmission. This is evident throughout the data.

In terms of HIV transmission: 35.7% thought that HIV could be transmitted by mosquitoes and 12.3% were unsure; indicating that 48.0% of the STI clients are still not clear that mosquito bites will not transmit HIV. Of these 84.3% said that you could not get HIV by sharing a meal.

Most said that a pregnant woman could give HIV to her unborn baby during pregnancy (85.0%), through breast feeding (78.3%) and during delivery (85.0%).

Analysis of the UNGASS indicator for knowledge of prevention indicates that 68 (22.6%) of 300 had comprehensive knowledge of HIV transmission. More men than women had comprehensive knowledge of HIV. Knowledge is low and when queried about their exposure to intervention and health service delivery, only 19% reported that they had someone come to their community to talk about STI or HIV and AIDS.

### *Testing for STI and HIV*

Over half (59.0%) of participants in the survey reported that it was possible in their community for someone to get a HIV test and no one would know the results unless the person wanted them to know. A quarter (23.9%) had taken a HIV test in the past year and knew their results.

Of those men and women sampled: 15 (5.0%) tested positive for syphilis; 12 (4.0%) tested positive for HIV and two (0.6%) HIV tests were indeterminate. There is 5.0% prevalence of HIV and 4.0% prevalence of syphilis in this sample; only one person diagnosed with HIV was also diagnosed with syphilis.

**Table 24: Results of STI and HIV testing by sex**

<b>Syphilis prevalence</b>						
<b>Syphilis prevalence</b>	<b>Sex</b>				<b>Total</b>	
	<b>Male</b>		<b>female</b>			
	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>
<b>negative</b>	121	40.3%	164	54.7%	285	95.0%
<b>positive</b>	7	2.3%	8	2.7%	15	5.0%
<b>Total</b>	128	42.7%	172	57.3%	300	100.0%
<b>HIV Prevalence</b>						
<b>HIV prevalence</b>	<b>Sex</b>				<b>Total</b>	
	<b>Male</b>		<b>female</b>			
	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>
<b>Indeterminate</b>	1	0.3%	1	0.3%	2	0.7%
<b>negative</b>	127	42.3%	159	53.0%	286	95.3%
<b>positive</b>	0	.0%	12	4.0%	12	4.0%
<b>Total</b>	128	42.7%	172	57.3%	300	100.0%

Of those 12 people who tested HIV positive: 3 (25%) did not believe that condoms used correctly every time would reduce risk of HIV transmission and 7 thought that HIV was transmitted by mosquitoes. Two persons (16.7%) who tested positive would eat a meal cooked by a person living with HIV or AIDS, and 50% (6) said they would not want to keep it secret if a family was positive.

The ages of those 12 who were positive for HIV ranged from 15 to 49: however two thirds of these were young people between the ages of 15-24; 4 were in the 15-19 year group and 4 in the 20-24 age groups. Only one person was in the 25-29 year range, 2 in the 30-34 year range and one was in the 45-49 year range. Most who were diagnosed with HIV came from

Eastern Highlands (33.3%; 4), 25% (3) from Morobe, 2 (16.7%) each from Simbu and Southern Highlands and 1 (8.3%) from Western Highlands.

The ages of those who were positive for syphilis ranged from 15-54, with 1, age not stated; 2 were between the ages of 20-29, 3 between 15-19 years; and 1 in the 30-34, 35-39 had 3, 45-54 had 4 cases. Most who were diagnosed with syphilis came from Morobe (4) and Simbu (4), 3 each from Western Highlands and Eastern Highlands and 1 from East Sepik.

Five of the eight people positive for syphilis had not used a condom at last sex with their husband. Drawing conclusions about the associations between infection and behavioural factors are limited due to the low numbers and the basis for these.

### UNGASS, Universal Access and NSP Indicators

A number of indicators have been analyzed in relation to this data and are compiled below. UNGASS Indicator 7 is defined as the percentage of STI Clients who received an HIV test in the last 12 months and who know their results. Data from this indicator shows that 23.9% (68/285) of STI clients aged 15-49 surveyed had received an HIV test in the last 12 months and knew their results. More men than women had tested for HIV.

**Table 25: UNGASS Indicator 7. Percentage of STI clients aged 15-49 who received a HIV Test in the last 12 months and who know their results.**

Indicator 7	Disaggregation	Value
Indicator Value: Percentage of men and women aged 15-49 who received an HIV test in the last 12 months and who know their results	STI Participants age 15-49	23.90%
	Males	34.14%
	Females	16.04%
	15-19	21.05%
	20-24	30.35%
	25-49	22.38%
Numerator: Number of respondents aged 15-49 who have been tested for HIV during the last 12 months and who know their results	STI Participants age 15-49	68
	Males	42
	Females	26
	15-19	4
	20-24	17
	25-49	47
Denominator: Number of all respondents aged 15-49	STI Participants age 15-49	285
	Males	123
	Females	162
	15-19	19
	20-24	56
	25-49	210

UNGASS Indicator 13 is defined as the percentage of young people aged 15-24 who both correctly identify ways of preventing sexual transmission of HIV and who reject major misconceptions about HIV transmissions. Data shows that young people's comprehensive knowledge about HIV prevention is only 30.67% (23/75) of young women between the ages of 15-24 had comprehensive knowledge of HIV transmission. Comprehensive knowledge broken down by other age ranges shows that only 21.05% in the 15-19 age range and 33.05% in the 20-24 age range.

**Table 26: UNGASS Indicator 13 Percentage of young people aged 15-24 who both correctly identify ways of preventing sexual transmission of HIV and who reject major misconceptions about HIV transmissions.**

Indicator 13.	Disaggregation	Value
Indicator Value: Correct answer to all five questions	STI Participants age 15-24	30.67%
	Males	24.40%
	Females	23.91%
	15-19	21.05%
	20-24	33.05%
Numerator: Number of respondents age 15-24 who gave the correct answers to all questions	STI Participants age 15-24	23
	Males	12
	Females	11
	15-19	4
	20-24	19
Denominator: Number of all respondents 15-24	All STI Participants age 15-24	75
	Males	29
	Females	46
	15-19	19
	20-24	56

**Table 27: UNGASS Indicator 15. Percentage of young men and women aged 15-24 who have had sexual intercourse before the age of 15.**

Indicator 15	Disaggregation	Value
Indicator Value: Percentage of men and women aged 15-24 who have had sexual intercourse before the age of 15	STI Participants age 15-24	14.67%
	Males	24.14%
	Females	8.69%
	15-19	10.53%
	20-24	16.07%
Numerator: Number of respondents (aged 15-24 years) who reported the age at which they first had sexual intercourse as under 15 years	STI Participants age 15-24	11
	Males	7
	Females	4
	15-19	2
	20-24	9
Denominator: Number of all respondents aged 15-24 years	All STI Participants age 15-24	75
	Males	29
	Females	46
	15-19	19
	20-24	56

UNGASS Indicator 15 is defined as the percentage of young men and women aged 15-24 who have had sexual intercourse before the age of 15. Data from this indicator shows that 14.67% had sex before the age of 15.

UNGASS Indicator 16 is defined as the percentage of men and women aged 15-49 who have had sexual intercourse with more than one partner in the last 12 months. Data from this indicator shows that 37.54% of STI clients aged 15-49 had sexual intercourse with more than one partner in the last 12 months. More men (55.28%) than women (24.7%) had had sex with more than one partner in the past year.

**Table 28: UNGASS Indicator 16 Percentage of men and women aged 15-49 who have had sexual intercourse with more than one partner in the last 12 months**

Indicator 16	Disaggregation	Value
Indicator Value: Percentage of men and women aged 15-49 who have had sexual intercourse with more than one partner in the last 12 months	STI Participants age 15-49	37.54%
	Males	55.28%
	Females	24.7%
	15-19	63.16%
	20-24	33.93%
	25-49	36.19%
Numerator: Number of respondents aged 15-49 who have had sexual intercourse with more than one partner in the last 12 months	STI Participants age 15-49	107
	Males	68
	Females	39
	15-19	12
	20-24	19
	25-49	76
Denominator: Number of all respondents aged 15-49 years	All STI Participants age 15-49	285
	Males	123
	Females	162
	15-19	19
	20-24	56
	25-49	210

UNGASS Indicator 17 is defined as percentage of men and women aged 15-49 who have had more than one partner in the last 12 months who used a condom during their last sexual intercourse. This indicator shows that 21.49% of STI clients aged 15-49 who had more than one sexual partner in the last 12 months also used a condom during their last sexual intercourse. More women (25.64%) than men (19.12%) who had more than one sexual partner in the last 12 months had also used a condom during their last sexual intercourse.

**Table 29: UNGASS Indicator 17. Percentage of men and women aged 15-49 who have had more than one partner in the last 12 months who used a condom during their last sexual intercourse**

Indicator 17	Disaggregation	Value
Indicator Value: Percentage of men and women aged 15-49 who have had sexual intercourse with more than one partner in the last 12 months who used a condom during their last sexual intercourse	STI Participants age 15-49	21.49%
	Males	19.12%
	Females	25.64%
	15-19	41.67%
	20-24	15.79%
	25-49	19.74%
Numerator: Number of respondents (aged 15-49) who reported having had more than one sexual partner in the last 12 months who also reported that a condom was used the last time they had sex	STI Participants age 15-49	23
	Males	13
	Females	10
	15-19	5
	20-24	3
	25-49	15
Denominator: Number of respondents (15-49) who reported having had more than one sexual partner in the last 12 months	All STI Participants age 15-49	107
	Males	68
	Females	39
	15-19	12
	20-24	19
	25-49	76

UNGASS Indicator 20 is defined as the percentage of injecting drug users reporting the use of a condom the last time they had sexual intercourse. As there was only one woman who reported injecting, and she had used a condom at last sex, the 100% value for this indicator in this instance should be taken with caution.

	sex	Use Condom at last sex
# IDU	Male	0
	Female	1
	Total	1

UNGASS Indicator 21 defined as the percentage of injecting drug users reporting the use of sterile injecting equipment the last time they injected, was not available as she did not answer this question.

## **Lessons Learnt and Recommendations**

It takes time to fit into the clinic routine in an integrated fashion for the smooth flow of sentinel surveillance interviews, testing, and STI clinical diagnosis and treatment. It is at times inevitable that protocols, interviews and sentinel forms create disruptions in routines and the regular use of clinic space. However, the team easily integrated into the clinical routine at the Friends Clinic and limitations of space were worked out easily. Debrief meetings every second day helped to promote team integration and provide opportunities for communication and co-ordination to resolve any issues arising.

Cooperation at level of interviewers and staff contributed to the smooth flow of clients, facilitated data collection as per the protocol, and created more consistency between the forms and the surveys. NRI interviewers filled out the demographic and other behavioural data prior to testing. A daily review of completed surveys and forms identified any problems in data collected early, decreasing potential for missing data and errors, and allowed for the monitoring and documentation of those who had refused. This was the first level of integrated data verification that occurred during sentinel field collection.

While a quarter of people who were approached, refused either interviewing and or testing for HIV and STI; a well formulated introduction, information about the sentinel surveillance, that stressed confidentiality, anonymity, and the right to refuse or consent, created an environment where people exercised their choices. Privacy ensured confidentiality of behavioural and testing data and service provision. The Friends Clinic staff members had a positive approach and were friendly; while the services for their clients are free.

It is stressed that the surveillance research ethics of confidentiality and consent for testing is vital to maintain for the rights of STI clients during sentinel surveillance data collection. Despite rigour in documenting consent or refusal for both interviewing and testing; three people in the study was tested by clinic staff, but had not given consent. They were removed from the sample.

It is recommended to review why people were tested without consent. There is a need to ensure increased HIV testing; but with informed consent and confidentiality to maintain the rights of Papua New Guineans. At the same time, it is evident that there is a need for more support for increased VCT counsellors at the clinic and staff acknowledge this area of need.

Review of the HAMP Act and the directive by the NDoH on PICT (WHO 2007) and how these relate to provider initiated counselling and testing in the context of STI clinics could be helpful for health workers to ensure human rights and confidentiality are maintained during HIV testing. There is a need for a broader policy discussion about the HAMP Act around testing, and access to ART. There is no discussion on ART in the HAMP Act.

The data reflects the need for tailored prevention messages to be given to STI clients about HIV testing and prevention when they attend the clinic. This sentinel data provides a basis for development of education for women and men attending STI clinics based on the findings for knowledge, attitudes and practices that can influence the transmission of HIV and the perpetuation of stigma. Certainly polygamy indicates that messages of being faithful to only one partner would not be the best targeted prevention message for polygamous couples, and requires consideration in the formulation of tailored prevention and behaviour change messages. Condom efficacy, symptoms of STI, the relationship between STI and HIV as a cofactor and misconceptions about mosquitoes and HIV transmission require addressing.

There is a need to do more qualitative research with STI clients around treatment seeking and how to improve people's use of services at health facilities for HIV testing and STI treatment. Assessment of services by STI clients, for monitoring and evaluation, is well placed to improve attendance at STI clinics for treatment of STI and HIV testing and support service and referrals.

Qualitative data on why people diagnosed with repeat STI are not using condoms, using drugs and injecting, and around the dynamics of polygamy and concurrency of partnerships would help to guide behaviour change programs for men and women to reduce STI and HIV infections.

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