

**Results of the 2012 Surveillance of HIV, Sexually Transmitted Infections and Associated Risk Behaviors: The Second Generation PDA-based HIV Surveillance among Venue-based Female Sex Workers in 12 Selected Provinces of Thailand**

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## **Preamble**

The Ministry of Public Health by Bureau of Epidemiology has conducted an HIV surveillance survey among Mattayom 5 (Grade 11) students, venue-based male and female sex workers, pregnant women, and military-conscripted men since 1995. It was developed to project sexual risk behavior trends of vulnerable populations, including female sex workers, young people and men who have sex with men (MSM). This includes HIV risk behavior surveillance survey, integrated with sero-surveillance survey or also known as ‘Second Generation Surveillance’

The Second Generation Surveillance is very important and useful for epidemiology. It helps inform crucial data that enable us to understand risk behaviors and better describe the HIV epidemic. The data can also be used for monitoring and evaluating the projects on AIDS and STI prevention and alleviation at both provincial and national levels. In addition, they can be used for planning AIDS and STI strategies both at the provincial and national levels.

Surveillance Team  
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# **Results of the 2012 Surveillance of HIV, Sexually Transmitted Infections and Associated Risk Behaviors: The Second Generation PDA-based HIV Surveillance among Venue-base Female Sex Workers in 12 Selected Provinces of Thailand**

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## **Introduction**

The Bureau of Epidemiology has conducted an HIV surveillance among direct and indirect sex workers since 1989 to monitor and control HIV epidemic. This has empowered sex workers and enabled them to negotiate for safer sex and condom use, leading to proactive service delivery and consistent access to STI services.

According to the 2008 Female Sex Worker Survey conducted in Bangkok and in Chiang Rai province by Thailand MoPH – U.S. CDC Collaboration (TUC), applying a snowball method, it was revealed that HIV prevalence was 20 % and 10 % respectively. Chlamydia prevalence was 9 % in both cities. Gonorrhea prevalence was 2 % and 1 % respectively. It was also found that Syphilis among sex workers from 1.5 % in 2007 to 1.8 % in 2008, according to the HIV surveillance conducted during 1999 – 2008.

The 2006 IBBS (Integrated Biological and Behavioral Surveillance) which was conducted in 5 selected provinces showed that there were chlamydia infection among female sex workers, especially those who are relatively young. In this regard, 19.2 % of prevalence were found with those who were 15 – 19 years old and 13 % were those who were 20 – 24 years old but only 7.2 % were found among those who were above 24 years old. The 2007 study in 11 selected provinces indicated that Chlamydia was high among sex workers aged 20 – 24 years interval.

Therefore, the IBBS can inform epidemiological changes of STIs, HIV and associated risk behaviors, including epidemiology of STIs and HIV prevalence in order for improving and planning effective prevention and control.

The Second Generation HIV Surveillance has minimized the disadvantages of traditional surveillance system which cannot predict the current epidemiological trends like it could do at the beginning of the epidemic. The integration of HIV risk behavior surveillance and HIV sero-surveillance can better monitor the current epidemic and the data can be used for problem-solving. Based on the concept of integrating the two surveillances mentioned, this surveillance was later called the Integrated Biological and Behavioral Surveillance (IBBS),

The sero-infection data can be obtained from testing and the data on risk behaviors were the answers to the questionnaire on HIV infection-related behaviors (both preventive and risk behaviors), knowledge and understanding as well as access to HIV testing services.

In addition, the collection of urine specimens for STIs screening helped indicate the level of certain HIV and STI infection risks. This IBBS has led to greater epidemiological benefits by proving that it can better reflect characteristics or factors in association with behaviors and test results leading to epidemiological changes and risk behaviors. This is better than the standalone HIV sero-prevalence data .

### **Objectives**

1. To assess HIV prevalence among venue-base female sex workers (Venue based FSW)
2. To assess HIV and STI-associated risk behaviors among venue-based female sex workers
3. To research the demographic data on venue-base female sex workers

### **Methodology**

1. This IBBS was conducted among venue-based female sex workers in 12 provinces from 12 different public health regions, using simple random sampling. (Provinces that were collecting HIV incidence data were randomly sampled.). There were Bangkok Metropolis, Lopburi, Trat, Ratchaburi, Buriram, Udon Thani, Sri Saket, Nakorn Sawan, Pitsanulok, Chiang Rai, Phuet and Songkhla.
2. The method of IBBS was applied by collecting blood samples of HIV test, urine specimens for STI screening, and answering questionnaire on the behaviours which are associated with the infections of HIV and STIs.
3. 3 different scenarios were considered with the same sampling method but disaggregated by direct and indirect sex work.

Scenario 1: The province had less actual sample size than the calculated sample size; the data were collected from all female sex workers without random sampling.

Scenario 2: If there was no districts in a particular province having a number of direct and indirect female sex workers which was bigger than the calculated sample size, the team would first collect data from the district that had the largest number of female sex workers and then do it from the district having the second largest number and so on until the desirable number of samples was completely collected. The magnitude of HIV epidemic among female sex workers was considered in order to select the districts for surveillance. In case that the entertainment venues in any particular district needed to be randomly sampled, it is suggested to use the instructions from 2.2.1 – 2.2.5 mentioned earlier.

Scenario 3: If in any district and province where the number of female sex workers was greater than the calculated sample size, then

- 3.1 Only one district that had the largest number of female sex workers was selected for surveillance
- 3.2 All entertainment venues were listed and the surveillance was conducted by types of the venue (direct and indirect), indicating the number of female sex workers in each particular venue.
- 3.3 Draw the samples to select the entertainment venues. The name of each entertainment venue was written in a small piece of paper – one name per piece. Then, all the written papers were put into 2 boxes; one

for direct sex work venue and the other one for indirect sex work venue.

3.4 Draw one piece of paper at a time, and calculate the accumulated number of direct and indirect sex worker samples until the number of desirable sample size was reached.

3.5 Collect the data from all sex workers, who were working in the sampled venues.

4. The tool which was used for surveillance was a questionnaire on behaviours related to HIV infections. The questionnaires were disaggregated by the nationality of the population based on the planned surveillance using interview. The questionnaire was designed with 8 components including general information, general sexual behaviors, sexual behaviors by types of partners, alcohol and drug use, sickness, access to HIV and STI services, service coverage, HIV knowledge and attitudes, and self-risk assessments.
5. Data analysis began with a proper check on questionnaire. Completed questionnaires were checked for their completeness. The collected data were entered in the computerized program of the Bureau of Epidemiology. The data were compiled and analyzed to see the dispersion and morbidity by demographics, time, venues and the interpretation of sero-results to investigate the association between behaviors and test results of the specimens. The data were analyzed according to the descriptive statistics and indicators which were appropriate to the types of the data in all sampled provinces. Median was used to report HIV prevalence, drawn from provincial data.

## Results

There were 3,541 venue-based female sex workers (FSW) sampled in the surveillance. 1,433 cases (40.5 %) were direct sex workers and 2,108 cases (59.5 %) were indirect sex workers. According to Table 1, the mean age was 29 years, 21.9 % in the 20 – 24 years of age interval, 13.9 % between 15 – 19 years. 80.4 % came from the cities of origin in Thailand. It was found that 2.1 % of sex workers were still studying. 80.4 % reported to have ever attended schools. 39.0 % finished their secondary schools, 15.0 % had undergraduate degree and 2.6 % had finished their education which were higher than bachelor degree.

**Table 1: Demographic information by direct and indirect sex work in 2012**

Demographic information	Direct sex work (N = 1,433)		Indirect sex work (N = 2,108)		Total (N = 3,541)	
	n	%	n	%	n	%
	Age (years)					
Mean (sd)	29.2	(9.4)	30.3	(9.6)	29.9	(9.6)
Median (min:max)	28(15:60)		29(15:60)		29(15:60)	
Age interval (years)						
15 – 19	235	16.4	257	12.2	492	13.9
20 – 24	308	21.5	466	22.1	774	21.9

Demographic information	Direct sex work (N = 1,433)		Indirect sex work (N = 2,108)		Total (N = 3,541)	
	n	%	n	%	n	%
25 – 29	252	17.6	381	18.1	633	17.9
30 – 34	227	15.8	324	15.4	551	15.6
35 – 39	204	14.2	256	12.6	469	13.2
40 – 44	110	7.7	312	10.1	323	9.9
45 evoba dna	97	6.8	202	9.6	299	8.4
<i>Origination</i>						
Thai	1,041	72.6	1,805	85.7	2,846	80.4
Thai ethnic minorities	87	6.1	83	3.9	170	4.8
Burmese	37	2.6	38	1.8	75	2.1
Lao	252	17.6	104	4.9	356	10.1
Khmer	8	0.6	16	0.8	24	0.7
Others	8	0.6	61	2.9	69	1.9
<i>Student status</i>						
Yes	25	1.7	49	2.3	74	2.1
No	1408	98.3	2059	97.7	3467	97.9
<b>Education attainment</b>						
Never	1227	85.6	1757	83.3	2984	84.3
Ever	206	14.4	351	16.7	557	15.7
<b>Highest education (those who attended)</b>						
Primary	206	14.4	351	16.7	557	15.7
Junior high	25	1.7	49	2.3	74	2.1
High school	465	32.4	917	43.5	1382	39.0
Higher vocational	415	29.0	441	20.9	856	24.2
/Bachelor degree	256	17.9	275	13.1	531	15.0
Higher than bachelor degree	47	3.3	45	2.2	92	2.6

**Table 2: Number and percentage of income, age, duration of transactional sex experience in 2012**

Most venue-based FSW of 49.9 % had the income of 5,000 – 10,000 Baht and 11.8 % had the income of 20,000 – 30,000 Baht and 7.7 % had the income of more than 30,000 Baht. The average age of first transactional sex experience was 23 years. The duration of transactional sex experience (days) was 855 days.

Variable	Direct sex work		Indirect sex work		Total	
	n	%	n	%	n	%
<b>Income</b>						
Less than 5,000 Baht	87	6.1	381	18.2	468	13.3

Variable	Direct sex work		Indirect sex work		Total	
	n	%	n	%	n	%
5,000 – 10,000 Baht	396	27.7	1,045	49.9	1,441	40.9
10,000 – 20,000 Baht	499	34.9	429	20.5	928	26.3
20,000 – 30,000 Baht	261	18.3	156	7.4	417	11.8
More than 30,000 Baht	185	13.0	85	4.1	270	7.7
<b>The age of first transactional sex experience (year)</b>						
Mean(sd)	24.2(7.1)		25.2(8:1)		24.8(7.7)	
Median(min:max)	22.0(2:55)		24.0(1:56)		23.0(1:56)	
<b>Duration of transactional sex experience (days)</b>						
Mean(sd)	1,064.5(661.5)		1,023.3(741.0)		1,050(686.7)	
Median(min:max)	870(390:3,660)		810(390:3,720)		855(390:3,720)	

**Table 3: HIV, Gonorrhea and Chlamydia prevalence in 2012**

HIV prevalence among venue-based FSW was found at 2.12 %, 2.4 % for Gonorrhea and 10.34 % for Chlamydia.

Nationality	Total	HIV positive		Gonorrhea		Chlamydia	
		n	(%)	n	(%)	n	(%)
1. Thai	2,847	55	1.55	59	1.67	260	7.34
2. Thai ethnic minorities	170	5	0.14	3	0.08	16	0.45
3. Burmese	75	2	0.06	1	0.03	10	0.28
4. Lao	356	9	0.25	20	0.56	70	1.98
5. Khmer	24	2	0.06	0	0.00	2	0.06
6. Others	69	2	0.06	2	0.06	8	0.23
Total	3,541	75	2.12	85	2.4	366	10.34

**Table 4: HIV prevalence by province in 2012**

Trad province has the highest HIV prevalence at 4.6 % among venue-based FSW and the second highest was Lopburi province at 4.2 %

Province	Direct sex work		Indirect sex work		Total	
	n (cases)	% of positive	n (cases)	% of positive	n (cases)	% of positive
23Trad	9	33.3	232	3.4	241	4.6
16Lopburi	110	4.5	80	3.8	190	4.2
70Ratchaburi	29	3.4	153	3.9	182	3.8
57Chiang Rai	61	6.6	222	2.7	283	3.5
41Udon Thani	209	2.9	94	2.1	303	2.6
10Bangkok	469	1.1	134	6	603	2.2
65Pitsanulok	60	1.7	131	1.5	191	1.6



83Phuket	210	3.3	291	0.3	501	1.6
90Songkhla	140	2.1	160	0.6	300	1.3
33Sisaket	0	0	273	0.7	273	0.7
31Buriram	0	0	240	0.4	240	0.4
60Nakornsawan	136	0	98	0	234	0
Total	1,443	2.4	2,108	1.9	3,541	2.1

**Table 5 : Gonorrhoea prevalence by province in 2012**

Gonorrhoea prevalence was highest among venue-base sex workers in Sisaket province at 5.1 and the second highest was Burirum province at 5.0 %

Province	Direct sex work		Indirect sex work		Total	
	n (cases)	% of positive	n (cases)	% of positive	n (cases)	% of positive
33Sisaket	0	0	273	5.1	273	5.1
31Burirum	0	0	240	5	240	5.0
41Udon Thani	209	6.2	94	1.1	303	4.6
16Lopburi	110	1.8	80	5	190	3.2
60Nakornsawan	136	2.9	98	3.1	234	3.0
83Phuket	210	2.4	291	2.1	501	2.2
65Pitsanulok	60	1.7	131	1.5	191	1.6
70Ratchaburi	29	0	153	1.5	182	1.6
10Bangkok	469	1.3	134	2.2	603	1.5
57Chiang Rai	61	3.3	222	0.9	283	1.4
23Trat	9	11.1	232	0	241	0.4
90Songkhla	140	0.7	160	0	300	0.3
Total	1,443	2.4	2,108	2.4	3,541	2.4

**Table 6 : Chlamydia prevalence by province in 2012**

Chlamydia prevalence among venue-base sex workers was highest at 17.1 % in Buriram. The second highest was at 15.5 % in Udon Thani province.

Province	Direct sex work		Indirect sex work		Total	
	n (cases)	% of positive	n (cases)	% of positive	n (cases)	% of positive
31Burirum	0	0	240	17.1	240	17.1
41Udon Thani	209	17.7	94	10.6	303	15.5
57Chiang Rai	61	3.3	222	15.3	283	12.7
33Sisaket	0	0	273	12.5	273	12.5
16Lopburi	110	6.4	80	18.8	190	11.6
60Nakornsawan	136	7.4	98	15.3	234	10.7

23Trat	9	0	232	10.8	241	10.4
65Pitsanulok	60	6.7	131	11.5	191	9.9
10Bangkok	469	8.5	134	7.5	603	8.3
70Ratchaburi	29	3.4	153	9.2	182	8.2
90Songkhla	140	12.9	160	3.1	300	7.7
83Phuket	210	6.2	291	5.5	501	5.8
<b>Total</b>	<b>1,443</b>	<b>9.2</b>	<b>2,108</b>	<b>11.1</b>	<b>3,541</b>	<b>10.3</b>

**Table 7: Percentage of sex workers with access to HIV prevention services in the past 12 months**

It was found that 82.1 % reported to know where to get HIV testing. 63.4 % reported to have ever received condoms and 54.7 % reported to have ever known condoms and ever received condoms.

HIV testing	Direct sex work		Indirect sex work		Total	
	n	%	n	%	n	%
<b>Know where to get HIV testing</b>						
• Yes	1,162	83.8	1,595	81.0	2,757	82.1
• No	225	16.2	375	19.0	600	17.9
	<b>1387</b>		<b>1970</b>		<b>3357</b>	
Received condoms						
• Yes	1,097	76.6	1,147	54.4	2,244	63.4
• No	336	23.4	961	45.6	1,297	36.6
	<b>1433</b>		<b>2108</b>		<b>3541</b>	
Ever known and received condoms	<b>952</b>	<b>66.4</b>	<b>987</b>	<b>46.8</b>	<b>1,939</b>	<b>54.7</b>

**Table 8 : Number and percentage of HIV test experience in the past 1 year in 2012**

There was 98.1 % of venue-based FSW reported to have ever had HIV testing in the past 1 year

HIV testing	Direct sex work		Indirect sex work		Total	
	n	%	n	%	n	%
HIV testing with known result						
• Yes	994	92.0	1,226	86.8	2,220	98.1
• No	86	8.0	186	13.2	272	10.9

**Table 9 : Number and percentage of sexual behaviors by direct and indirect sex work types in 2012**

Condom use at the latest sex of the direct sex workers was at 43.9 % and of the indirect sex workers at 16.9 %. The overall condom use was 42.0 %.

Sexual behavior history	Direct sex work		Indirect sex work		Total	
	n	%	n	%	n	%
Condom use at latest sex						
• Yes	1,388	43.9	40	16.9	1,428	42.0
• No	1,772	56.1	196	83.1	1,968	58.0

**Table 9.1: Number and percentage of condom use at latest sex of direct and indirect sex workers in 2012**

Condom use at the latest sex of sex workers with their regular clients was highest at 93.1 % and with non-regular clients at 98.2 % and with other casual men at 83.2 % and with spouse or boyfriend at 34.6 % (Table 9.1)

Sexual Behavior History	Direct sex work		Indirect sex work		Total	
	n	%	n	%	n	%
<b>Condom use at latest sex</b>						
Regular clients	1,388	97.2	1,772	90	3,160	93.1
Non-regular clients	1,140	99.4	1,034	96.9	2,174	98.2
Other casual men	244	85	395	82.1	639	83.2
Spouse or boyfriend	197	34.6	316	3.46	513	34.6

**Table 10 : Number and percentage of sex with regular clients in 2012**

Sexual Behavior History	Direct sex work		Indirect sex work		Total	
	n	%	n	%	n	%
<b>With regular clients in 1 month</b>	10.9(16.9)		5.4(8.5)		8.1(13.6)	
Mean(sd)						
<b>Condom use during sex in the past 1 month</b>						
• Every time	987	93.6	987	90.4	1,974	91.9
• Sometimes	64	6.1	78	7.1	142	6.6
• Never	4	0.4	27	2.5	31	1.4

**Reasons for having sex with regular partners with inconsistent or non condom use**

1. Cannot find condoms in time	3	11.5	18	14.1	21	13.6
2. Do not know where to get condoms	0	0.0	7	5.5	7	4.6
3. Condoms are expensive	0	0.0	6	4.7	6	3.9
4. Do not see condom use necessary	0	0.0	4	3.13	4	2.6
5. Do not know how to use condoms	1	3.9	1	0.8	2	1.3
6. Trust	12	46.2	57	44.5	69	44.8
7. Partner refused to use	8	30.8	12	9.4	20	13.0
8. Do not want to use	0	0.0	1	0.8	1	0.7
9. Difficult or inconvenient	0	0.0	1	0.8	1	0.7
10. Minimized pleasure	0	0.0	1	0.8	1	0.7
11. Drunk	1	3.9	11	8.6	12	7.8
12. The condom was oversized or too small	0	0.0	0	0.0	0	0.0
13. Use other contraceptives i.e. pills, injection etc.	0	0.0	5	3.9	5	3.3
14. External ejaculation	1	3.9	4	3.1	5	3.3

**Condom use at latest sex**

• Yes	1,388	97.2	1,772	90.0	3,160	93.1
• No	40	2.8	196	10.0	236	6.9

**Who decided to use condom at latest sex**

• Myself	832	59.8	90.3	50.0	1,735	54.3
• Partner	464	33.3	651	36.1	1,115	34.9
• Both	96	6.9	251	13.9	347	10.9

**Table 11: Number and percentage of sex with non-regular clients in 2012**

Sex with non-regular clients	Direct sex work		Indirect sex work		Total	
	n	%	n	%	n	%
<b>Number of clients in 1 week</b>	10.4(9.3)		4.3(4.7)		7.4(8.0)	
<b>Mean(sd)</b>	10.4(9.3)		4.3(4.7)		7.4(8.0)	
Condom use with clients in the past 1 week						
• Every time	1,122	97.6	1021	94.4	2143	96.1
• Sometimes	25	2.2	46	4.3	71	3.2
• Never	3	0.3	14	1.3	17	0.8
<b>Reasons for having sex with non-regular partners with inconsistent or non condom use</b>						
1. Cannot find condoms in time	4	40.0	15	16.7	19	19.0
2. Do not know where to get condoms	0	0.0	6	6.7	6	6.0
3. Condoms are expensive	0	0.0	5	5.6	5	5.0
4. Do not see condom use necessary	0	0.0	4	4.4	4	4.0

Sex with non-regular clients	Direct sex work		Indirect sex work		Total	
	n	%	n	%	n	%
5. Do not know how to use condoms	0	0.0	2	2.2	2	2.0
6. Trust	3	30.0	37	41.1	40	40.0
7. Partner refused to use	2	20.0	6	6.7	8	8.0
8. Do not want to use	0	0.0	2	2.2	2	2.0
9. Difficult or inconvenient	0	0.0	1	1.1	1	1.0
10. Minimized pleasure	1	10.0	1	1.1	1	1.0
11. Drunk	0	0.0	5	5.6	6	6.0
12. The condom was oversized or too small	0	0.0	1	1.1	1	1.0
13. Use other contraceptives i.e. pills, injection etc.	0	0.0	2	2.2	2	2.0
14. External ejaculation	0	0.0	3	3.3	3	3.0
<b>Condom use at latest sex</b>						
• Yes	1,140	99.4	1,034	96.9	2,174	98.2
• No	7	0.6	33	3.1	40	1.8
<b>Who decided to use condom at latest sex</b>						
• Myself	774	67.8	655	62.7	1,429	65.4
• Partner	20	1.8	33	3.2	53	2.4
• Both	347	30.4	356	34.1	703	32.2

**Table 12: Number and percentage of sex with other casual men in 2012**

Sex with other casual men	Direct sex work		Indirect sex work		Total	
	n	%	n	%	n	%
<b>Number of other casual men in 12 months Mean(sd)</b>	7.1(9.8)		5.0(7.2)		5.8(8.3)	
<b>Condom use at latest sex in the past 1 month</b>						
• Every time	202	84.2	326	78.2	528	80.4
• Sometimes	20	8.3	48	11.5	68	10.4
• Never	18	7.5	43	10.3	61	9.3
<b>Reasons for having sex with other casual men partners with inconsistent or non condom use</b>						
1. Cannot find condoms in time	7	15.2	16	14.8	23	15.1
2. Do not know where to get condoms	1	2.2	3	2.8	4	2.6
3. Condoms are expensive	1	2.2	3	2.8	4	2.6
4. Do not see condom use necessary	2	4.4	3	2.8	5	3.3
5. Do not know how to use condoms	0	0.0	0	0.0	0	0.0
6. Trust	16	34.8	50	46.3	66	43.4
7. Partner refused to use	11	23.9	11	10.2	22	14.5
8. Do not want to use	1	2.2	0	0.0	1	0.7
9. Difficult or inconvenient	0	0.0	1	0.9	1	0.7
10. Minimized pleasure	1	2.2	0	0.0	1	0.7

Sex with other casual men	Direct sex work		Indirect sex work		Total	
	n	%	n	%	n	%
11. Drunk	3	6.5	9	8.3	12	7.9
12. The condom was oversized or too small	0	0.0	3	2.8	1	0.7
13. Use other contraceptives i.e. pills, injection etc.	1	2.2	3	2.8	4	2.6
14. External ejaculation	2	4.4	6	5.6	8	5.3
<b>Condom use at latest sex</b>						
• Yes	244	85.0	395	82.1	639	83.2
• No	35	12.2	68	14.1	103	13.4
• Not sure	8	2.8	18	3.7	26	3.4
<b>Who decided to use condom at latest sex</b>						
• Myself	174	71.0	264	64.7	438	67.1
• Partner	1	0.4	6	1.5	7	1.1
• Both	70	28.6	138	33.8	208	31.9

**Table 13: Number and percentage of sex with spouse or boyfriend in 2012**

Sex with spouse or boyfriend	Direct sex work		Indirect sex work		Total	
	n	%	n	%	n	%
<b>Having sex with spouse or boyfriend in 12 months</b>						
• Yes	627	44.9	1,000	51.8	1,627	48.9
• No	198	14.2	285	14.8	483	14.5
• No spouse	572	40.9	646	33.5	1,218	36.6
<b>Condom use during sex in the past 1 month</b>	(n= 569)		(n=912)		(n=1,481)	
• Every time	161	28.3	272	29.8	433	29.2
• Sometimes	132	23.2	147	16.1	279	18.8
• Never	275	48.3	490	53.7	765	51.7
• Not answered	1	0.2	3	0.3	4	0.3
<b>Condom use at latest sex</b>						
• Yes	197	34.6	316	34.6	513	34.6
• No	345	60.6	544	59.6	889	60.0
• Not sure	26	4.6	41	4.5	67	4.5
• Not answered	1	0.2	11	1.2	12	0.8

**Table 14 : Number and percentage of alcohol and drug use in the past 12 months in 2012**

Sex workers reported to have ever had alcohol and used drugs in the past 12 months at 22.9 % (heroin, opium, methamphetamine, and ice)

Alcohol and drug use	Direct sex work		Indirect sex work		Total	
	n	%	n	%	n	%
Alcohol and drug use in the past 12 months	1,413	98.6	1,990	94.4	3,403	96.1
• Tobacco	255	18.0	353	17.7	578	17.0
• Alcohol	560	39.6	859	43.2	1,419	41.7
• Methamphetamine	1	0.1	3	0.2	4	0.1
• Ice	34	2.4	57	2.9	91	2.7
• Cough syrup	6	0.4	13	0.7	19	0.6
<b>Injecting drug use in the past 1 month</b>	2	33.3	6	20.7	8	22.9
• Heroin	1	50.0	1	16.7	2	25.0
• Opium	0	0.0	1	16.7	1	12.5
• Methamphetamine	0	0.0	5	83.3	5	62.5
• Ice	1	50.0	3	50.0	4	50.0

**Table 15 : Number and percentage STI symptoms in the past 1 month in 2012**

There were 30.5 % of sex workers, who reported to have STI testing. In the past 12 months, 99.4 % reported to ever have STI symptoms. 30.2 % received the latest treatment at government hospitals/clinics. 24.1 % bought their own medicines.

STI symptoms	Direct sex work		Indirect sex work		Total	
	n	%	n	%	%	n
<b>STI testing in the past 12 months</b>						
• Yes	386	27.5	648	32.6	1,034	30.5
• Never	1,016	72.5	1,337	67.4	2,353	69.5
<b>STI symptoms in the past 12 months</b>						
• Yes	1,413	98.6	2,105	99.9	3,518	99.4
• No	20	1.4	3	0.1	23	0.6
1. Irregular discharge / pus from the genital	101	7.1	132	6.3	233	6.6
2. Difficulty in urination	115	8.1	116	5.5	231	6.6
3. Genital pus	11	0.8	9	0.4	20	0.6
4. Anal pus	1	0.1	2	0.1	3	0.1
5. Genital wounds	36	2.5	39	1.9	75	2.1
6. Anal wounds	1	0.1	8	0.4	9	0.3
7. Genital node / lump / wart	20	1.4	19	0.9	39	1.1
8. Anal node / lump / wart	3	0.2	6	0.3	9	0.3
<b>Latest treatment when symptomatic</b>		(n=305)		(n=367)		(n=672)
1. State hospitals/clinics	68	22.3	135	36.8	2.3	30.2
2. Private clinics	40	13.1	55	15.0	95	14.1
3. Private STI clinics	15	4.9	12	3.3	27	4.0

STI symptoms	Direct sex work		Indirect sex work		Total	
	n	%	n	%	%	n
.4State STI clinics	72	23.6	26	7.1	98	14.6
.5Met with nurses from health facility	1	0.3	2	0.5	3	0.4
.6Buy their own medications	73	23.9	89	24.3	162	24.1
.7Did nothing	36	11.8	48	13.1	84	12.5

**Table 16 : Number of percentage of HIV knowledge and awareness in 2012**

There were 41.7 of sex workers who correctly answered 1 – 5 HIV knowledge and refused incorrect myths about HIV

Knowledge and awareness	Direct sex work (N=1,433)		Indirect sex work (N=2,108)		Total (N=3,541)	
	n	%	n	%	%	n
-Can having sex with only one faithful, uninfected partner reduce the risk of HIV transmission?	1,156	80.7	1,640	78.2	2,796	79.2
-Can using condoms reduce the risk of HIV transmission?	1,366	95.4	1,933	92.3	3,299	93.6
-Can a healthy-looking person have HIV?	1,139	79.5	1,658	79.4	2,797	79.5
-Can a person get HIV from mosquito bites?	1,032	72.1	1,506	71.9	2,538	72.0
-Can a person get HIV by sharing a meal with someone who is infected?	1,167	81.6	1,695	81.0	2,862	81.2
-Correctly answered 1 – 5 questions	608	42.4	868	41.2	1,476	41.7

**Table 17: Number and percentage of sex workers who reported to have barriers in accessing to service in 2012**

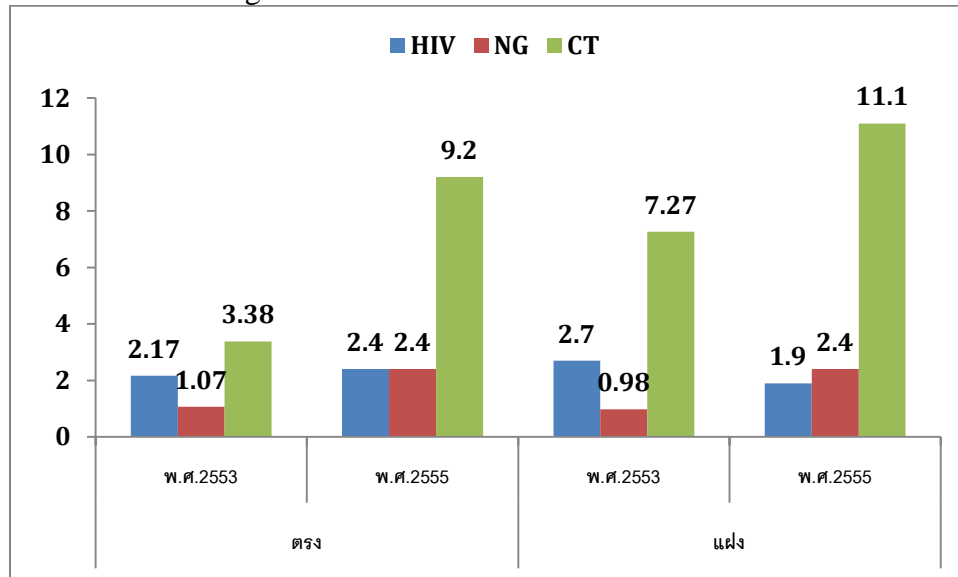
There were 4.3 % of sex workers, who reported to have barriers in accessing to general healthcare services and 4.1 % reported to have barriers in accessing to HIV testing.

Service	Direct sex workers (N= 1,433)		Indirect sex workers (N= 2,108)		Total (N= 3,541)	
	n	%	n	%	%	n
• STI service	93	6.5	197	9.3	29	0.8
• HIV testing	58	4.0	87	4.1	145	4.1
• Antiretroviral therapy	10	0.7	21	1.0	31	0.9
• General disease treatment	62	4.3	89	4.2	151	4.3



## Discussion

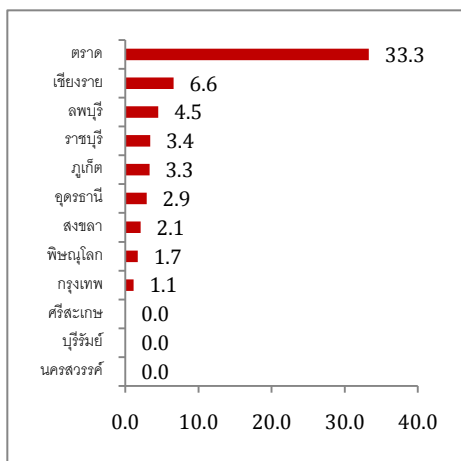
HIV prevalence of direct sex workers was found at 2.4 % and 1.4 % was found among indirect sex workers. STI and Gonorrhea prevalence of both direct and indirect sex workers was found at 2.4 % while Chlamydia prevalence was 9.2 % among direct sex workers and 11.1 % among indirect sex workers.



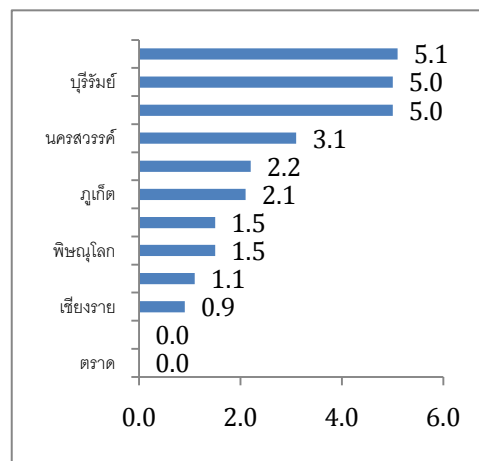
The HIV and STI IBBS conducted between 2010 and 2012 showed that Gonorrhea infection by NG and Chlamydia by CT were increasing.

Charts of HIV, Gonorrhea and Chlamydia prevalence (%) among direct venue-based female sex workers by province

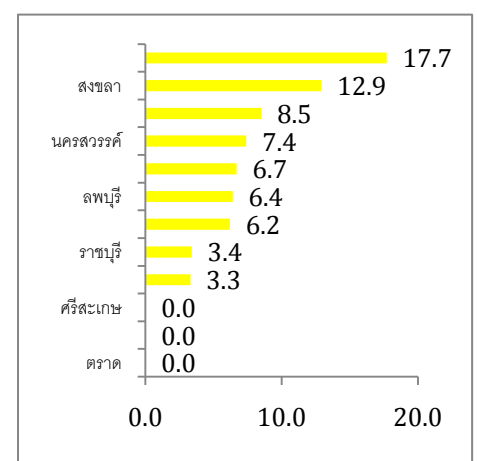
HIV



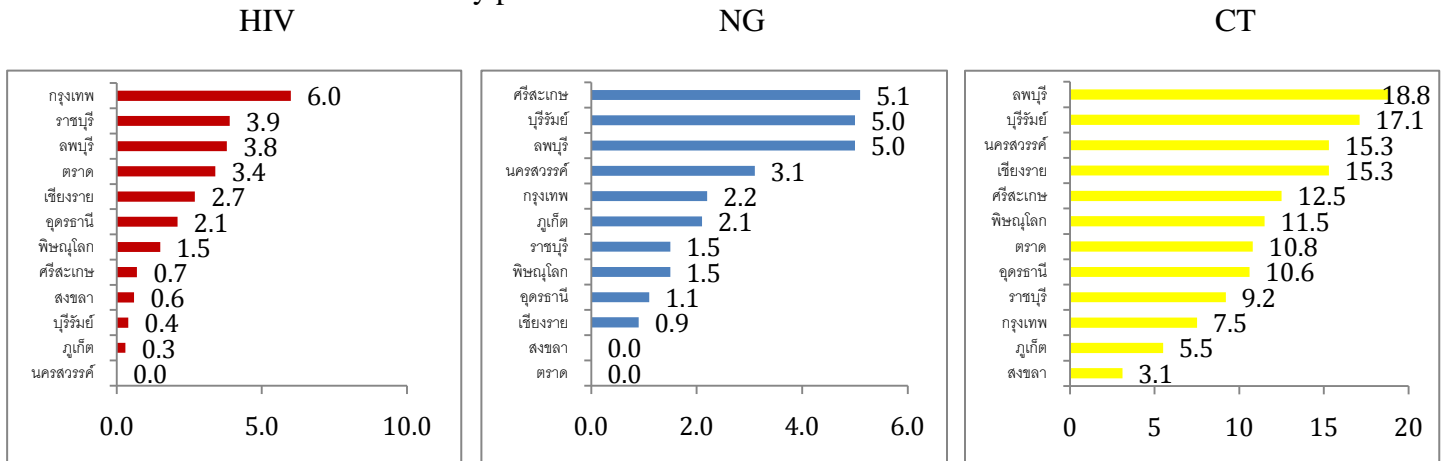
NG



CT



Charts of HIV, Gonorrhea and Chlamydia prevalence (%) among direct venue-based female sex workers by province



**Discussion and Conclusion** Both direct and indirect sex workers had low HIV knowledge based on UNGASS indicators. It is, however, noticeable that both direct and indirect sex workers had low condom use at the latest sex. The problematic attitude was their trust towards their partners and the perception of no needs for condoms. Thus, it was found that Gonorrhea and Chlamydia prevalence in both direct and indirect sex workers was likely increasing, leading to higher HIV prevalence in the future.