

# BEHAVIORAL SURVEY AMONG FEMALE SEX WORKERS & FEMALE SEX WORKERS WHO INJECT DRUGS

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## VIETNAM REPORT 2013

USAID Social Marketing for HIV Prevention Project



**Vietnam (2013): Behavioral study among female sex workers in 7 project provinces and among female sex workers who are injecting drug users in 5 project provinces.**

**USAID Social Marketing for HIV Prevention Project**

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## **RESEARCH TEAM**

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We would like to acknowledge the support provided by the VAAC and the Provincial AIDS Centers (PACs) in facilitating the study design and implementation in 7 provinces. In addition, we would like to express our gratitude to those who participated in this study for their willingness to share their experiences to inform the development and implementation of evidence-based harm reduction interventions serving sex workers and sex worker who inject drugs and other key populations at risk. Finally, we are grateful for financial and technical support from USAID/PEPFAR, which made the study possible.

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## BACKGROUND

Vietnam's HIV epidemic remains concentrated. Key, most affected populations include sex workers (SWs) and their clients, men who have sex with men (MSM) and injecting drug users (SW-IDUs). In June 2012, it was estimated that 204,019 people nationwide are living with HIV/AIDS.<sup>1</sup> In 2012 HIV prevalence among female sex workers was estimated to range from 6.8% to 22% in select provinces surveyed: Hanoi 12.3%, Hai Phong 22%, Can Tho 19.8%, An Giang 8.3%.<sup>2</sup>

Since 2008, PSI has implemented the USAID Social Marketing for HIV Prevention Project with USAID/PEPFAR support. The project has three main objectives: i) increasing use of HIV prevention products and behaviors among most at risk populations (MARP) using social marketing (SM) techniques in the context of a total market approach (TMA); ii) increasing uptake of Voluntary Counseling and HIV Testing (VCT) services among MARP; and iii) engaging with and building the capacity of national and provincial partners in social marketing and behavior change communication. Specific project activities, implemented across 9 provinces in partnership with the Ministry of Health and commercial and civil society partners, include:

- Targeted distribution and promotion of *Number One* social marketing condoms and *Karol* commercial condoms through hotels/guesthouses and other non-traditional outlets.
- Targeted distribution and promotion of *Number One Plus* co-packaged water based lubricant and condoms to pharmacies and non-traditional outlets (NTO).
- Targeted distribution and promotion of *Dream* (female) condoms through pharmacy and fast moving consumer goods (FMCG) outlets accessible to SWs and MSM.
- Evidence-based communication campaigns—including interpersonal communication tools—to promote safer behaviors including “Nho Toi Moi Lan” (Remember me every time), “Co Bao Thi U” (Yes! Condom), “Chan Troi Moi” VCT campaigns.
- *Song Dep* outreach targeting sex workers and sex workers who inject drugs in HCMC, Hai Phong, Nghe An, and Quang Ninh provinces.
- Low dead space syringe (LDSS) SM pilot in Hanoi & HCMC, launched in March 2012 to expand convenient access to and consistent use of LDS syringes among people who inject drugs.
- Advocacy and capacity building to strengthen government, commercial, and civil society partner understanding of, support for, and use of SM techniques.

In 2012, PSI/Vietnam conducted the third and final round of the SW & SW-IDU Behavioral Survey, following previous rounds conducted in 2009 and 2011. The purpose of the survey was to inform and evaluate SW & SW-IDU programming.

### Research Objectives

1. Monitor changes in key HIV prevention behaviors and factors associated with key behavioral indicators over time among SWs and SW-IDUs, as outlined in the USAID Social Marketing for HIV Prevention Project's Performance, Measurement, and Evaluation Plan (PMEP). Specifically:
  - Track levels of condom use with different partner types, including commercial and non-commercial regular partners, among SWs and SW-IDUs;

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<sup>1</sup> Data from HIV/AIDS report in 2012 of VAAC –MOH

<sup>2</sup> Data from Surveillance Sentinel 2011 of VAAC-MOH

- Track injecting practices among SW-IDUs, including knowledge and use of LDS syringes;
  - Track HIV testing behaviors, including knowledge of HIV status, knowledge of partner's status, and use of VCT services.
2. Identify factors associated with risk reduction behaviors among SWs and SW-IDUs, to inform total TMA HIV prevention programming, targeting SWs and SW-IDUs. Specifically:
    - Assess key opportunity, ability, and motivation (OAM) factors associated with consistent condom use with regular and non-regular partners, safer injecting practices such as LDS syringe use, HIV testing and knowledge, and VCT uptake.
  3. Explore associations between exposure to program activities and changes in key risk reduction behavioral indicators. Specifically:
    - Match exposure to SM interventions and other HIV prevention interventions with changes in HIV prevention behaviors. Risk reducing behaviors include consistent condom use with regular and non-regular partners, safer injecting practices such as LDS syringe use, HIV testing and knowledge, and VCT uptake.

## METHOD

### 1. Study Population & Inclusion Criteria

This is a cross-sectional study among female SWs and SW-IDUs in 7 priority PEPFAR provinces: Hanoi, Hai Phong, Quang Ninh, Nghe An, Ho Chi Minh City, Can Tho, and An Giang. The study additionally focuses on a sample of SW-IDUs recruited in 4 provinces where Song Dep outreach has been launched: Hai Phong, Quang Ninh, HCMC, and Nghe An, along with Hanoi, where LDSS piloting is being implemented.

SW participants were recruited in the 7 listed provinces based on the following inclusion criteria:

1. Female
2. 18-35 years old
3. Sold sex for money at least once in the past 1 month
4. Sold sex for at least 3 months
5. Lived in one of the study provinces in the last 3 months
6. Not experienced as a peer educator or outreach worker for an HIV program

SW-IDU participants were recruited in the 4 listed provinces, along with Hanoi, based on the following inclusion criteria:

1. Meet all 6 above criteria for a SW respondent
2. Injected an illicit drug at least once in the past 1 month
3. Injected a drug for at least 3 months previously

### 2. Sampling

Study respondents were recruited through respondent-driven sampling (RDS), a chain-referral procedure whereby samples are selected from social networks of SWs and SW-IDUs. This method was used in order to reach hidden SWs that have not been identified or reached by current intervention programs. RDS relies on the assumption that, given sufficiently long referral chains (i.e. 3-6 waves), the sample composition becomes stable (i.e. reaches "equilibrium"), resulting in a

probability sample of hard-to-reach populations.<sup>3,4</sup> In this study, the longest referral chain was 8 waves and the average was 6 waves.

A sample of this target population living in priority program areas was drawn each time the survey was conducted, in order to ensure comparability of data for trend analysis. Sample calculations were used to determine that 1,400 SWs and 460 SW-IDUs (allowing for 5% non-response) were required for this survey to determine changes in PMEP indicators and measure impacts of PSI interventions on behaviors, based on findings from the last survey.

The sample distribution across study provinces was selected in consideration of four factors:

1. Need to ensure the integrity of RDS samples at the provincial level, so that they are of sufficient size to allow for a minimum of four waves of recruitment from each seed;
2. Estimates of the size and diversity of the SW and SW-IDU population in each sample province;
3. Precision of provincial estimates for key behavioral indicators (+/- 10% assuming a point estimate of 50%);
4. Availability of resources and time needed for the study.

Table 1 displays the sample distribution.

**Table 1: Distribution of SW and SW-IDU sample used in the 2013 study round by province**

Province	SW population size estimates <sup>5</sup>	SW-IDU population size estimates <sup>6</sup>	Sample size SW (2013)	Sample size SW-IDU (2013)
Hai Phong	3500	289	204	81
Quang Ninh	1050	144	151	43
Hanoi	5600	420	251	122
Nghe An	1137	100	159	70
HCMC	35000	8080	355	155
Can Tho	2478	n/a	150	n/a
An Giang	2800	n/a	150	n/a
<b>Total</b>	<b>51565</b>	<b>8613</b>	<b>1420</b>	<b>471</b>

### 3. Respondent Recruitment

Based on the sample size, 4-8 seeds were recruited for each group in each province. Seeds must have special attributes to ensure effective recruitment, including: i) have large network sizes; ii) be respected by members of the target population; iii) be able to convince others to participate in the study; and iv) have some interest in the study goal.<sup>7</sup> Initial seeds were identified with support from

<sup>3</sup> Heckathorn, Douglas D. (1997). "Respondent-Driven Sampling: A New Approach to the Study of Hidden Populations." *Social Problems*. Vol 44, No 2, pp 174-198.

<sup>4</sup> Lisa.G. Johnson and Keith Sabin. (2010). "Hard to reach populations with respondent driven sampling". *Methodological Innovations Online*. Vol 5, No 2, pp 38-48.

<sup>5</sup> Vietnam HIV/AIDS Estimates and Projections 2007-2012

<sup>6</sup> PSI Song Dep MIS data with UIC

<sup>7</sup> Heckathorn, D.D. (2002) 'Respondent driven sampling II: deriving valid population estimates from Chain-Referral samples of hidden populations', *Sociological Problems*, Vol. 49, Suppl. 1, pp. 11-34.



outreach workers and peer educators working with SW and SW-IDU populations. All seeds were required to meet the inclusion criteria for the sample and treated as any other participant.

To ensure diversity among respondents, SW seeds were selected to meet the following additional criteria:

1. Have large social networks of other SWs. In this survey, the average social network size of seeds was around 21.7 people;
2. Be of diverse ages, but below 25-years-old;
3. Have varied exposure to PSI outreach activities;
4. Have lived in the studied provinces for varied periods of time (both new and old residents);
5. Work in a range of venues, ranging from the streets to entertainment establishments (EE), such as karaoke venues, massage venues, beer gardens, restaurants, coffee shops, through the telephone, and through the Internet.

Seeds for SW-IDUs were diversified by the above criteria, and additionally by drug injecting experience. It was required that the sample contain both participants that had injected drugs for less than and above 1 year. An additional consideration that influenced the selection of seeds was an interest in reaching SW-IDUs with a range of injection history practices.

A coupon system was used to facilitate respondent recruitment. Each seed and respondent who was eligible and completed the interview was given maximum of 3 coupons for recruiting other SWs and SW-IDUs. Only individuals who came to an interview site with a coupon were interviewed. Recruitment was stopped when the desired sample size was reached.

#### **4. Analysis Conducted**

Respondent Driven Sampling Analysis Tool (RDSAT) was used to estimate an individual weight for adjusting percentages and 95% confidence intervals for key indicators measured in the study, based on participants' network sizes and recruitment patterns, to account for biases found in conventional chain referral sampling.<sup>8</sup>

All analyses were weighted to reflect estimates of the sizes of SW and SW-IDU populations in each of sample provinces. Estimations across 7 provinces were produced for each sample site. The aggregated estimations across the 7 provinces were calculated with provincial-RDSAT estimates and provincial population weights.<sup>9</sup>

Logistic regression was used to identify factors associated with HIV risk behaviors, and to identify associations between program exposure and behavioral outcomes. UNI-ANOVA was applied to calculate adjusted proportions or means for the variables in final regression models. T-test and Chi-square test were employed to test the statistical significance of differences between estimated proportions.

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<sup>8</sup> Salganik MJ and Heckathorn DD. (2004). "Sampling and Estimation in Hidden Populations Using Respondent-Driven Sampling". *Sociological Methodology*, Vol. 34, pp. 193-239.

<sup>9</sup> Taran, Y; Johnston, L; Pohorila, N; and Saliuk, T. (2011). "Correlates of HIV Risk Among Injecting Drug Users in Sixteen Ukrainian Cities". *AIDS and Behavior*, Vol 15, No 1, pp. 65-74.

## 5. Ethical Issues

This study was initiated only after receiving written approval from the Ethical Review Boards of Hanoi School of Public Health, to which review has been ceded by PSI's own Research Ethics Board. Those implementing this study complied with all policies and procedures of the authorizing Institutional Review Board (IRB).

All study participants gave their time voluntarily and with their informed consent. Before interviews, interviewers read the consent form to participants. This form provided respondents with information about the objectives, confidentiality, and anonymity of the study, their right to refuse or stop the interview at any time without any negative results or punishment, and explained incentives for participation. For this study, an incentive of 100.000VND (5USD) was provided to each person that completed the survey, and an additional 50.000VN (2.5USD) was provided to each participant who met screening criteria and participated in an interview.

PSI ensured respondents' confidentiality and anonymity. All data collected did not include identifiable information, such as names or address of respondents, in order to protect the confidentiality and the identity of study participants.

The ethical issues and procedures for ensuring respondents' voluntary participation, anonymity, confidentiality, and other related ethical issues were included in the training for the survey team.

## SURVEY FINDINGS

### 1. Demographic Profile of SW and SW-IDU Respondents

*Table 2* displays the demographic profile of SW respondents alongside the demographic profile of SW-IDU respondents. Among SW respondents, almost half (43.0%) attended school up to the secondary level, followed by the primary level (26.7%), and finally the high school level and above (21.6%). Among SW-IDU respondents, however, while 44.8% attended school up to the secondary level, the next largest portion attended school up to the high school level and above (22.0%), followed by the primary level (19.0%). SW respondents were most likely to be divorced, separated, or widowed (33.1%) and least likely to be married (8.6%), while SW-IDU respondents were most and equally likely to be divorced, separated, or widowed (30.0%) and single (30.0%), but least likely to be married (8.0%).

In terms of average age, the mean age among SW-IDUs was slightly higher than among SWs (30.2 years and 28.1 years, respectively), and both groups were more likely than not to have used alcohol in the last month (60.0% among SWs and 54.7% among SW-IDUs). While 57.5% of SW-IDUs were street based sex workers, only 30.0% of SW respondents reported the same. The average monthly income of the two groups were comparable (8.1 million VND among SWs and 8.3 million VND among SW-IDUs), but SW-IDU respondents reported having worked as SWs for a longer duration of time than SW respondents (41 months and 30 months, respectively). Finally, on average, SW-IDU respondents had been injecting drugs for 36 months.

**Table 2: Key demographic characteristics of SWs and SW-IDUs, 2013**

Indicators	SW (n=1420)	SW-IDU (n=470)	Sig. <sup>10</sup>
<b>Highest attended level of education</b>			
Primary school	26.7%	19.0%	*
Secondary school	43.0%	44.8%	
High school and above	21.6%	22.0%	
<b>Marital status</b>			
Single (never been married)	25.6%	30.0%	NS
Married	8.6%	8.0%	
Cohabiting (but not married)	14.0%	14.5%	
Have a boyfriend but not living together	18.7%	17.5%	
Divorced/separated/widowed	33.1%	30.0%	
<b>Other</b>			
Mean age	28.1	30.2	NS
Alcohol use in the last 1 month	60.0%	54.7%	*
Average monthly income (million VND)	8.1	8.3	NS
Street based sex worker	30.0%	57.5%	***
Average of sex work duration (months)	30	41	***
Average of injecting duration (months)	NA	36	NS

Table 3 compares the key demographic characteristics of SW respondents between the second and third survey rounds, conducted in 2011 and 2013.

**Table 3: Key demographic characteristics of SWs over surveys in 2011 and 2013**

Indicators	2011 (n=1666)	2013 (n=1422)	Sig. <sup>10</sup>
<b>Highest attended level of education</b>			
Primary school	25.2%	26.7%	NS
Secondary school	43.8%	43.0%	
High school and above	20.0%	21.6%	
<b>Marital status</b>			
Single (never been married)	31.0%	25.6%	NS
Married	8.9%	8.6%	
Cohabiting (but not married)	12.5%	14.0%	
Have a boyfriend but not living together	13.7%	18.7%	
Divorced/separated/widowed	33.9%	33.1%	
<b>Other</b>			
Mean age	27.3	28.1	NS
Alcohol use in the last 1 month	70.0%	60.0%	**
Average monthly income (million VND)	8.0	8.1	NS
Average of sex work duration (months)	NA	30	

<sup>10</sup> Statistical significant level: (\*) p<.05; (\*\*) p<.01; (\*\*\*) p<.001; (NS) Non-significant.

Overall, the highest attended level of education remained relatively consistent between the two rounds, with slightly more respondents only attending school up to the primary level in 2013 than in 2011 (26.7% and 25.2%, respectively), about the same percentage attending school up to the secondary level in 2013 as in 2011 (43.0% and 43.8%, respectively), and slightly more respondents attending school up to the high school level and above in 2013 than in 2011 (21.6% and 20.0%, respectively).

Respondents were most likely to be divorced, separated, or widowed in both 2011 and 2013 (33.9% and 33.1%, respectively), and least likely to be married in both survey years (8.9% and 8.6%, respectively). A noticeable increase, from 13.8% to 18.7%, was seen in the percentage of respondents that had a boyfriend with whom they did not live. Between the two years, there were non-significant different in respondent's age (from 27.3 years to 28.1 years) ,and income (from 8.0 million VND to 8.1 million VND). There was a decrease in the percentage of respondents that reported using alcohol in the last month (70.0% to 60.0%,  $p < .05$ ).

## 2. Condom Use Behavior and Associated Factors

### 2.1. Sexual behaviors & condom use among SWs and SW-IDUs

The overall number of clients and sex acts remained consistently higher among SW-IDUs than among SWs in both survey years. There were changes within each group between 2011 and 2013.

**Figure 1: Average number of clients and sex acts between SWs and SW-IDUs in the last 1 month, 2011 and 2013**

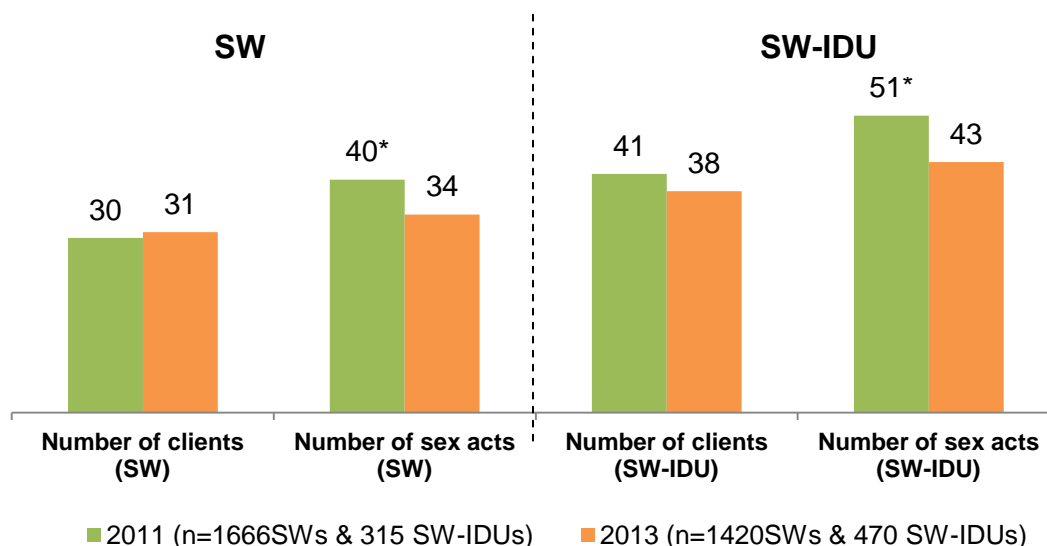


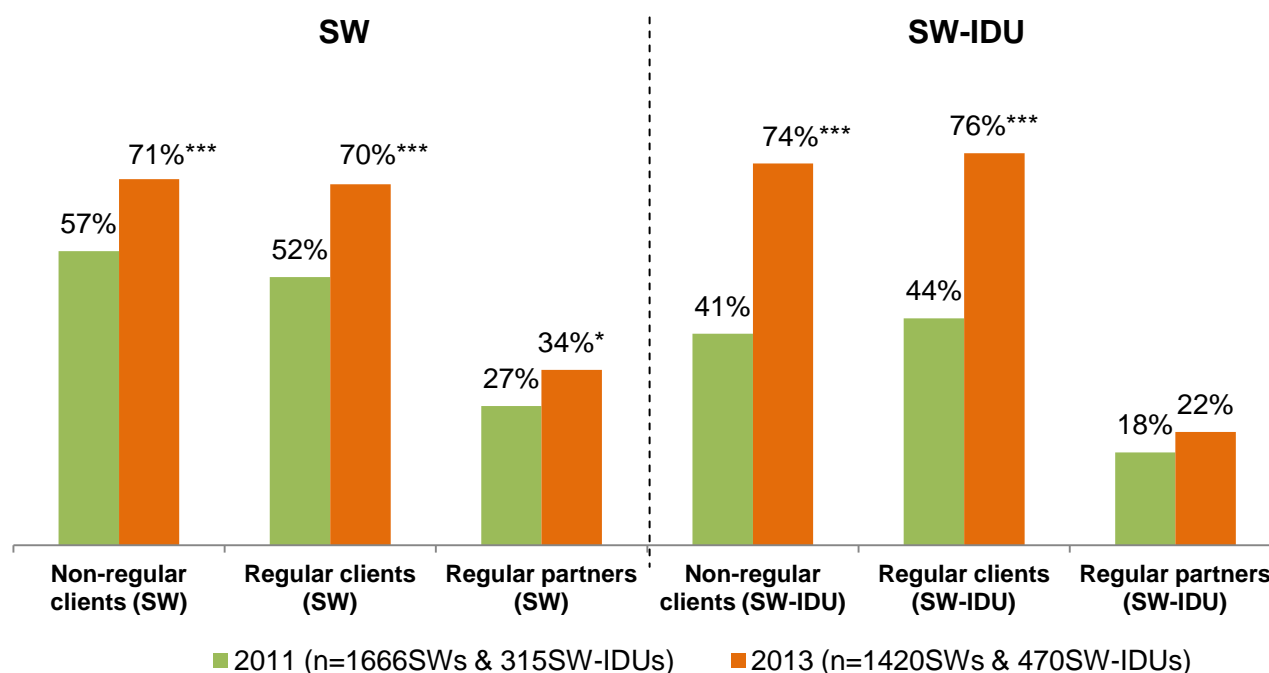
Figure 1 displays the average number of clients and sex acts among SWs and SW-IDUs in the past month, for both the 2011 and 2013 survey rounds. Overall, among SWs and SW-IDUs, minimal change was seen in these behaviors between the two survey years. The monthly average number of SW clients increased slightly from 30 to 31, the monthly average number of SW sex acts decreased significantly from 40 to 34 ( $p < .05$ ), and the monthly average number of SW-IDU clients decreased slightly from 41 to 38. The biggest drop was seen in the average number of SW-IDU sex acts, which dropped from 51 in 2011 to 43 in 2013 ( $p < .01$ ).

Consistent condom use (CCU) was defined as using a condom during every single sex act with commercial clients in the past month. For the purposes of this study, sexual partners were divided

into three categories. Non-regular clients refers to clients who were not known to the respondents; regular clients refers to clients who were known to respondents and with whom they had sex on more than one occasion; and regular partners refers to their non-commercial regular partners, such as boyfriends or husbands

Figure 2 displays changes in CCU with different sexual partners among SWs and SW-IDUs in the last 1 month, over time.

**Figure 2<sup>11</sup>: Consistent condom use with different sexual partners among SWs and SW-IDUs in the last 1 month, 2011 and 2013**

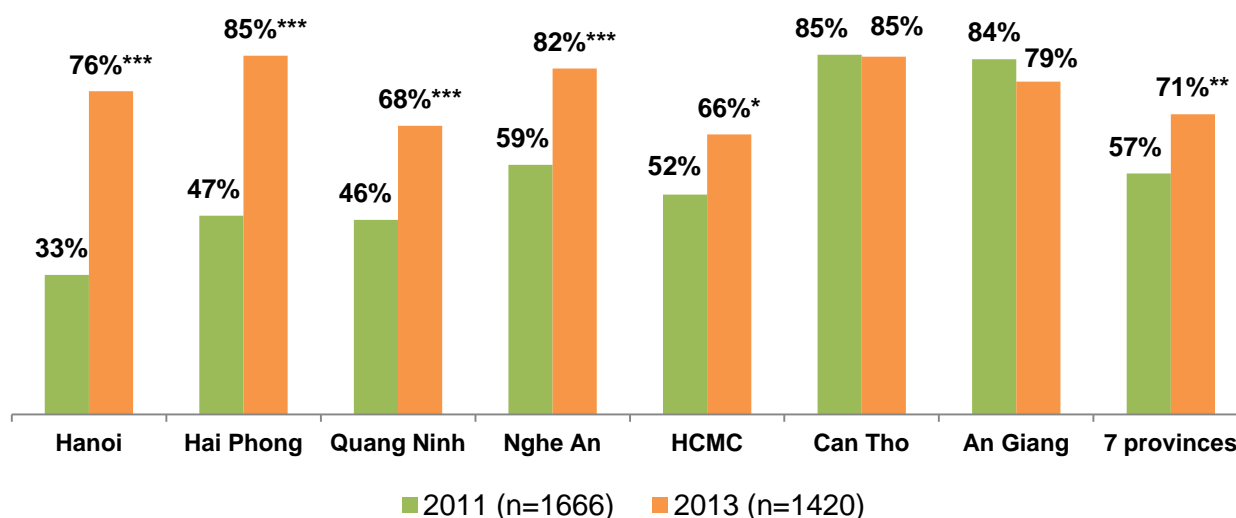


Overall, significant increases in CCU with most partner types were recorded. Specifically, CCU increased from 57% in 2011 to 71% in 2013 ( $p=.001$ ) between SWs and non-regular clients, from 52% in 2011 to 70% in 2013 ( $p=.001$ ) between SWs and regular clients, and from 27% in 2011 to 34% in 2013 ( $p=.002$ ) between SWs and regular partners. Among SW-IDUs, CCU with non-regular and regular clients increased by even greater amounts, from 41% to 74% ( $p=.001$ ) and from 44% to 76% ( $p=.001$ ), respectively. CCU between SW-IDUs and regular partners, however, only increased from 18% to 20% ( $p=.624$ ). In both survey years, CCU between both groups and regular partners was lower than with non-regular and regular clients.

Consistent condom use varies by province. Figure 3 summarizes CCU with clients in the last 1 month among sex workers by province and over time.

<sup>11</sup> Statistical significant level: (\*)  $p<.05$ ; (\*\*)  $p<.01$ ; (\*\*\*)  $p<.001$

**Figure 3<sup>12</sup>: Distribution of consistent condom use with clients in the last 1 month among SWs by province, 2011 and 2013**



In 2013, the percentage of SWs that reported CCU with clients in the last 1 month ranged from 66% to 85% across the 7 provinces. Higher CCU was reported in Hai Phong (85%), Can Tho (85%), and Nghe An (82%), followed by An Giang (79%) and Hanoi (76%), and lower CCU was reported in Quang Ninh (68%) and HCMC (66%). Reported CCU increased significantly in most provinces between 2011 and 2013, but did not in Can Tho or An Giang. In Hanoi and Hai Phong, CCU nearly doubled between 2011 and 2013 (33% vs. 76% and 47% vs. 85%, respectively), and significant increases were recorded in Quang Ninh, Nghe An, and HCMC. No changes were found in Can Tho, and a slight decrease in CCU was experienced in An Giang, from 84% to 79%. In total, reported CCU increased significantly from 57% in 2011 to 71% in 2013 ( $p < .01$ ).

## 2.2. Factors associated with consistent condom use among SWs and SW-IDUs

Figure 4 identifies four factors that were associated with CCU among SWs with commercial partners from the 2013 survey.

**Figure 4: Factors associated with consistent condom use among SWs with commercial partners in the last 1 month, 2013 (n=1420)<sup>13</sup>**

Associated Factor	Odds Ratio	95% CI	Sig.
It is still necessary to use condoms with regular clients	4.3	2.6 – 7.2	$p = .001$
She makes the decision to use condoms with clients	3.2	1.8 – 5.5	$p = .006$
She is able to use condoms even if she is drunk or high	2.3	1.4 – 3.6	$p = .016$
She is confident in her ability to ask clients to use condoms despite the risk of losing clients	2.2	1.4 – 3.6	$p = .027$

**A sex worker is more likely to use condoms every time in the last month with commercial partners, if she agrees that:**

<sup>12</sup> Statistical significant level: (\*)  $p < .05$ ; (\*\*)  $p < .01$ ; (\*\*\*)  $p < .001$

<sup>13</sup> Adjusted for resident area, age, education, marital status, income, and number of clients.

Sex workers that perceived the need to use condoms with regular clients were found to be four times more likely to have used condoms with all clients in the past one month. Those that felt in charge of the decision to use condoms with clients were three times more likely to have used condoms with all clients in the past one month, and those who reported being able to use condoms after consuming alcohol or taking drugs were twice as likely to have used condoms with all clients in the past one month. Finally, sex workers who were not being afraid of the risk of losing a client through insisting on condom use were two times more likely to have used condoms with all clients in the past 1 month.

### 3. Needle Syringe Sharing and Associated Factors

#### 3.1. Drug use and needle syringe sharing

As described in the study method, the SW sample and SW-IDU sample were recruited independently. The study results show that there was still a percentage of SWs reporting drug use and N/S sharing in the last 1 month.

**Figure 5: Drug use and injecting equipment sharing in the last 1 month among SWs, 2013**

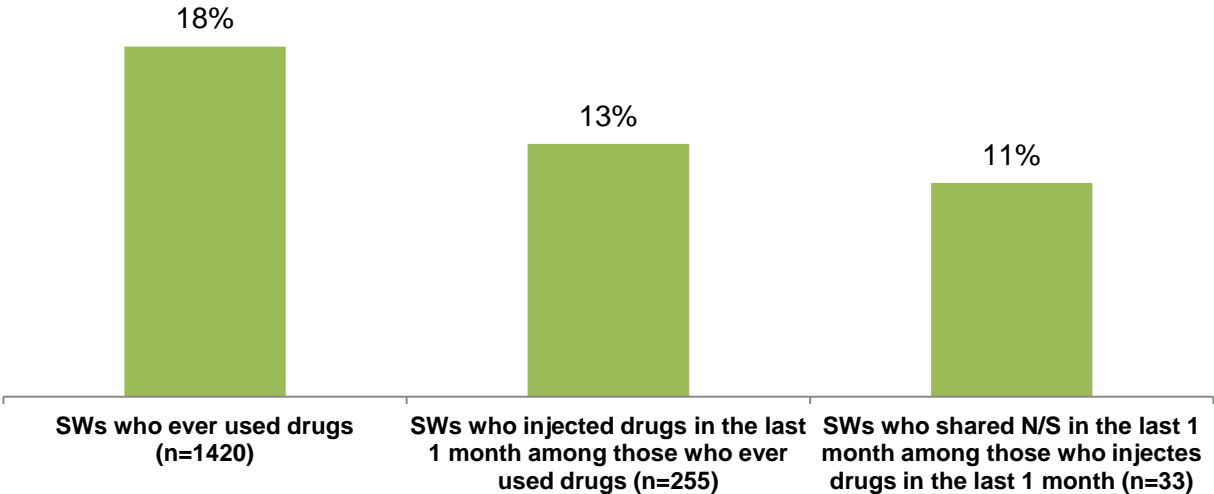
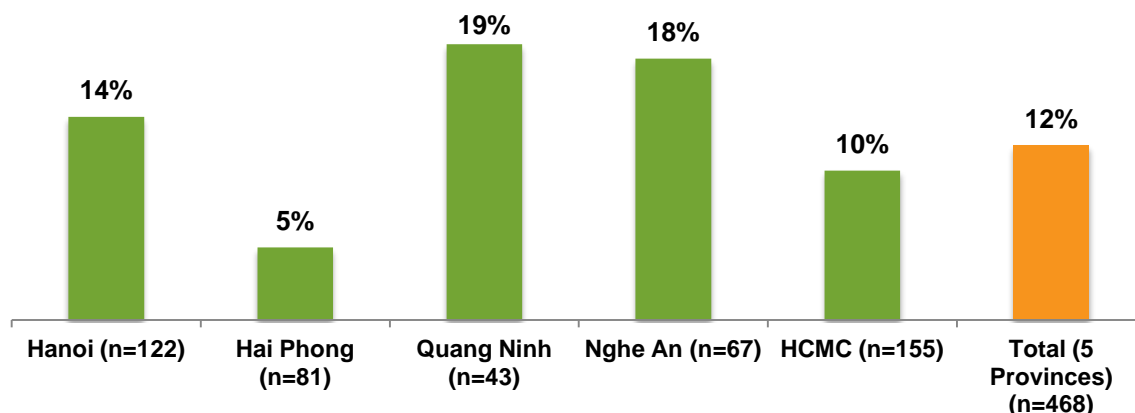


Figure 5 displays indicators on drug use and injecting equipment sharing among SWs measured during the 2013 survey round. Based on survey results, 18% of SWs had ever used drugs before. Among SWs who had ever used drugs, 13% had used injecting drugs in the past 1 month. Finally, 11% of SWs who injected drugs in the last 1 month shared injecting equipment. This percentage was similar to the percentage of SW-IDUs that reported sharing injecting equipment in the last 1 month.

Figure 6 breaks down the percentage of SW-IDUs that reported sharing injecting equipment in the past 1 month by province and in total, based on 2013 survey results.

**Figure 6: Percentage of SW-IDUs reporting sharing injecting equipment within the past 1 month by province and in total, 2013**



The province with the greatest percentage of SW-IDUs that reported sharing injecting equipment within the past month was Quang Ninh, at 19%, followed closely by Nghe An, at 18%. 14% of SW-IDUs in Hanoi reported sharing injecting equipment within the past 1 month, as did 10% of SW-IDUs in HCMC. The province with the lowest reported injecting equipment sharing among SW-IDUs was Hai Phong, at 5% of respondents. In total, 12% of all SW-IDU respondents shared injecting equipment in the past 1 month.

**Figure 7: Percentage of SW-IDUs Reporting Ever Use of LDSS, 2013**

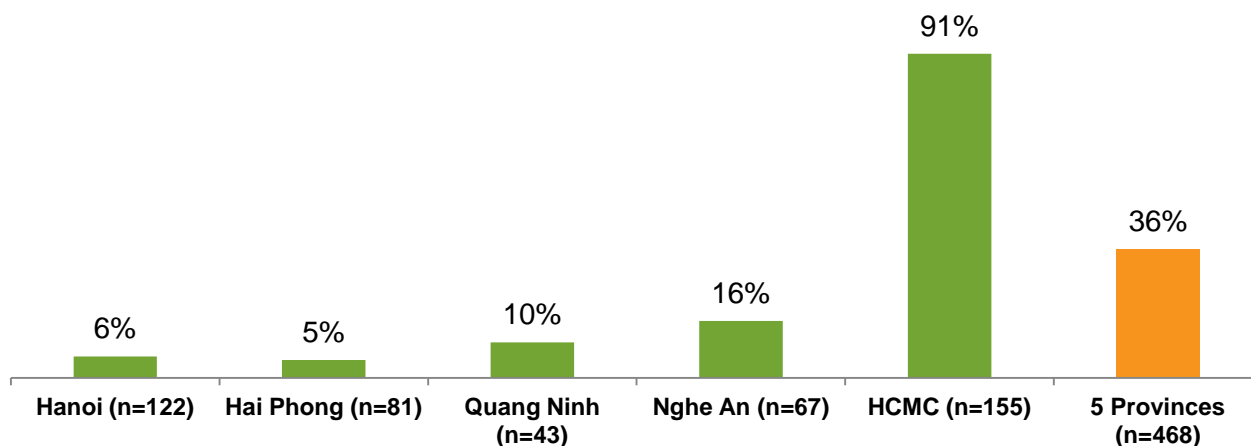


Figure 7 displays the percentage of SW-IDUs that report ever using LDSS by province and in total during the 2013 survey round. The province with the highest reported ever use of LDSS was HCMC, at 91%, which is significantly higher than the province with the next highest reported ever use of LDSS, Nghe An, at 16%. In Quang Ninh, 10% of SW-IDUs reported ever using LDSS, followed by 6% in Hanoi and 5% in Hai Phong. In total, 36% of surveyed SW-IDUs reported ever use of LDSS.



### 3.2. Factors Associated with Needle Syringe Sharing

Figure 8: Factors associated with N/S sharing in the last 1 month, among SW-IDUs, 2013<sup>14</sup>

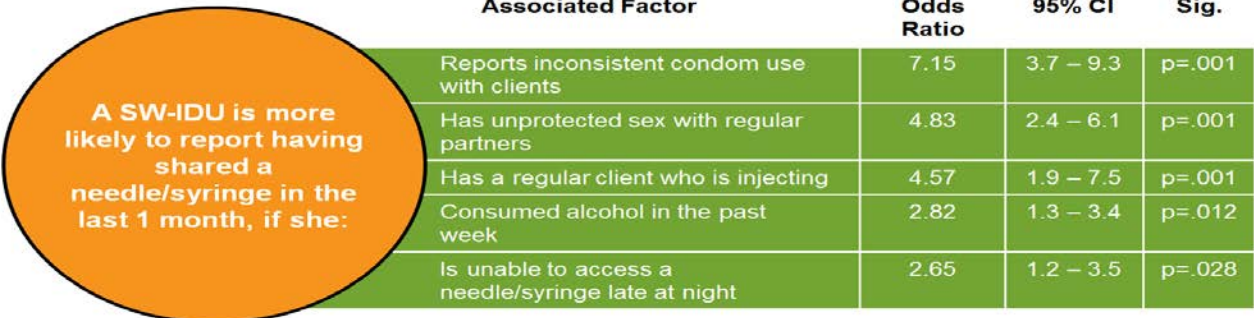


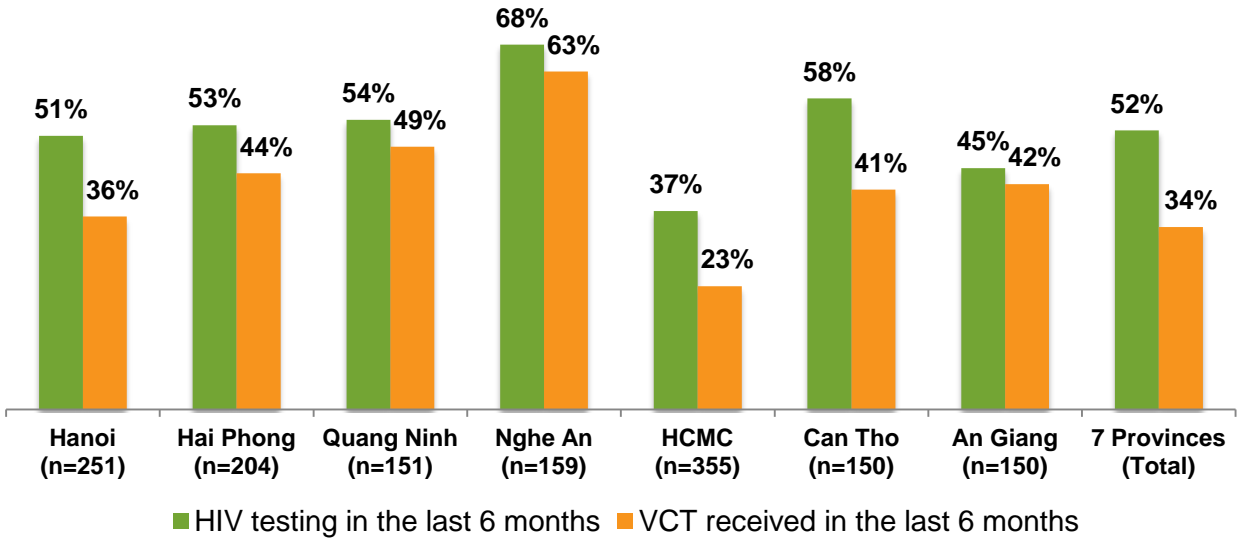
Figure 8 identifies four factors that were associated with needle/syringe sharing in the last 1 month among SW-IDUs, from the 2013 survey.

SW-IDUs that reported inconsistent condom use with clients were seven times more likely to have shared a needle/syringe in the past one month. Those SW-IDUs that reported unprotected sex with regular partners were almost five times more likely to have shared a needle/syringe, and those that reported having a regular client that was also an injector were over four times as likely to have shared a needle/syringe in the past 1 month. The risks of having shared a needle/syringe also increased if alcohol had been consumed in the past week – almost three times more likely to have shared a needle/syringe in the past 1 month – or if they reported not being able to access clean needles/syringes late at night – two times more likely to have shared a needle/syringe in the past one month.

### 4. VCT Uptake and Associated Factors

#### 4.1. HIV testing and VCT uptake

Figure 9: HIV testing and VCT received in the last 6 months among SWs by province, 2013

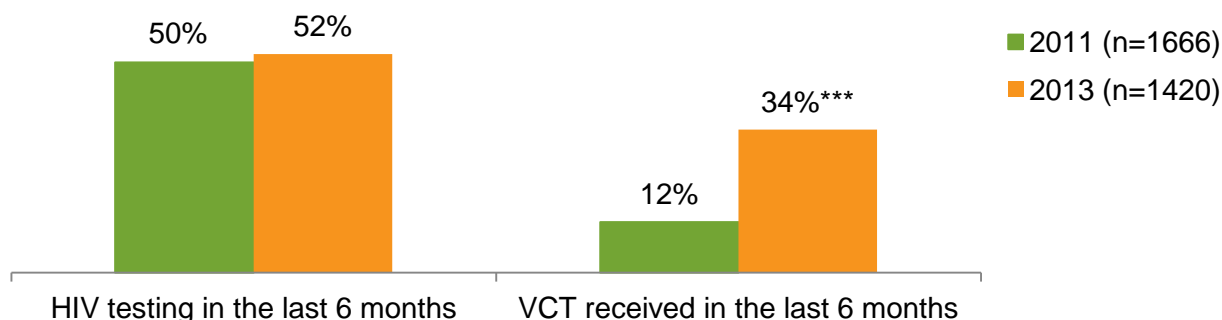


<sup>14</sup> Adjusted for resident area, age, education, marital status, and income.

Figure 9 displays percentages of SWs who reported receiving HIV testing in the last 6 months and who reported receiving VCT in the last 6 months, across 7 provinces. The percentage of SWs who received HIV testing in the last six months ranged from 37% to 68% in 2013, with the highest percentage being in Nghe An (68%) and the lowest percentage being in HCMC (37%). Approximately half of SWs in the other surveyed provinces reported receiving HIV testing in the last 6 months, including Hanoi (51%), Hai Phong (53%), Quang Ninh (54%), Can Tho (58%), and An Giang (45%). Only about 2 out of 10 SWs in HCMC received VCT in the last 6 months (23%), and about 4 out of 10 SWs in each of the other provinces reported use of VCT in the last 6 months. The province with the highest percentage of SWs reporting receiving VCT in the last 6 months was Nghe An, at 63%. In total, 52% of respondents surveyed received HIV testing in the last 6 months, and 34% of respondents surveyed receive VCT.

The percentage of SWs that reported receiving HIV testing and VCT in the last 6 months increased between the 2011 and 2013 surveys. Figure 10 reflects an increase in VCT uptake among SWs over time.

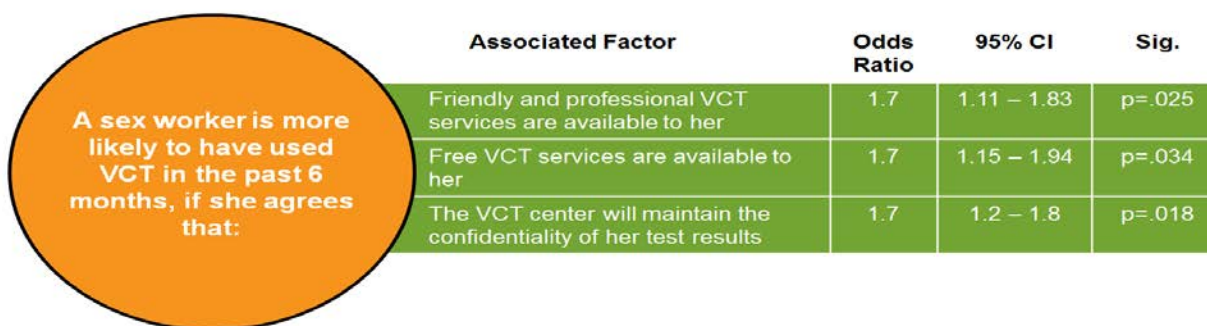
**Figure 10<sup>15</sup>: HIV testing and VCT received in the last 6 months among SWs, 2011 and 2013**



Between 2011 and 2013, there was no significant change in the percentage of respondents that reported having received HIV testing in the last 6 months (50% in 2011; 52% in 2013). However, there was a significant increase in the percentage of SWs who reported receiving VCT in the last 6 months between 2011 and 2013 (12% in 2011; 34% in 2013,  $p=.008$ ).

#### 4.2. Factors associated with HIV testing & VCT uptake

**Figure 11: Factors associated with VCT uptake among SWs, 2013<sup>16</sup>**



<sup>15</sup> Statistical significant level: (\*)  $p<.05$ ; (\*\*)  $p<.01$ ; (\*\*\*)  $p<.001$

<sup>16</sup> Adjusted for resident area, age, education, marital status, income, and consistent condom use.

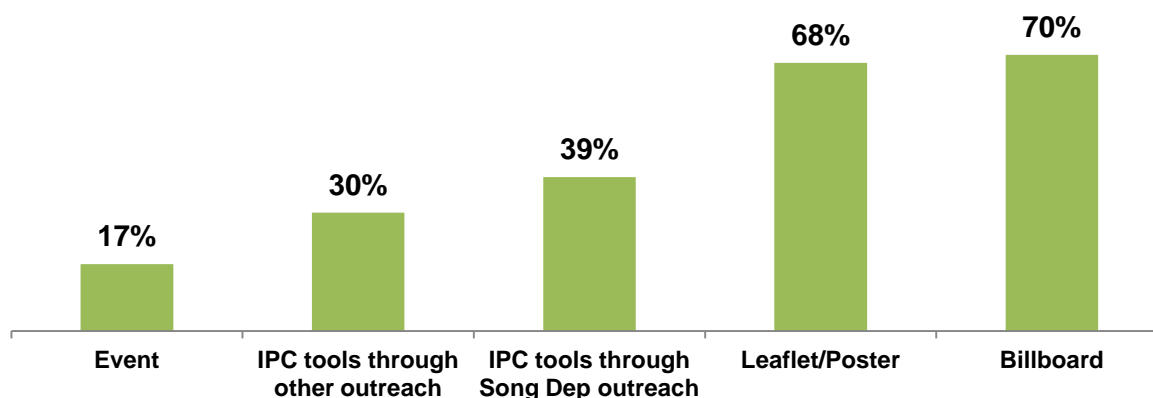
Figure 11 displays key factors associated with VCT uptake in the past 6 months among SWs, based on 2013 survey results. Three key factors were found to directly relate to VCT uptake. First, it was found that a SW was more likely to have used VCT in the past 6 months if she agreed that friendly and professional VCT services were available to her. A SW was also more likely to have used VCT in the past 6 months if she understood that free VCT services were available to her. Finally, the likelihood of VCT service use was higher among SWs who believe that VCT centers would maintain the confidentiality of her test result.

## 5. Exposure to HIV Prevention Programming and Association with Risk Behaviors

### 5.1. Exposure to HIV prevention programming

SW-focused behavior change communication (BCC) campaigns implemented by the SM Project in the year prior to the survey included billboards, print materials, targeted events and IPC tools used by Song Dep (4 provinces) and other outreach teams (7 provinces.) Figure 12 reflects exposure to BCC messages/materials designed by the SM Project, by channel based on 2013 survey results.

**Figure 12: Exposure to BCC among SWs in the last 6 months by channel, 2013 (n=1420)**

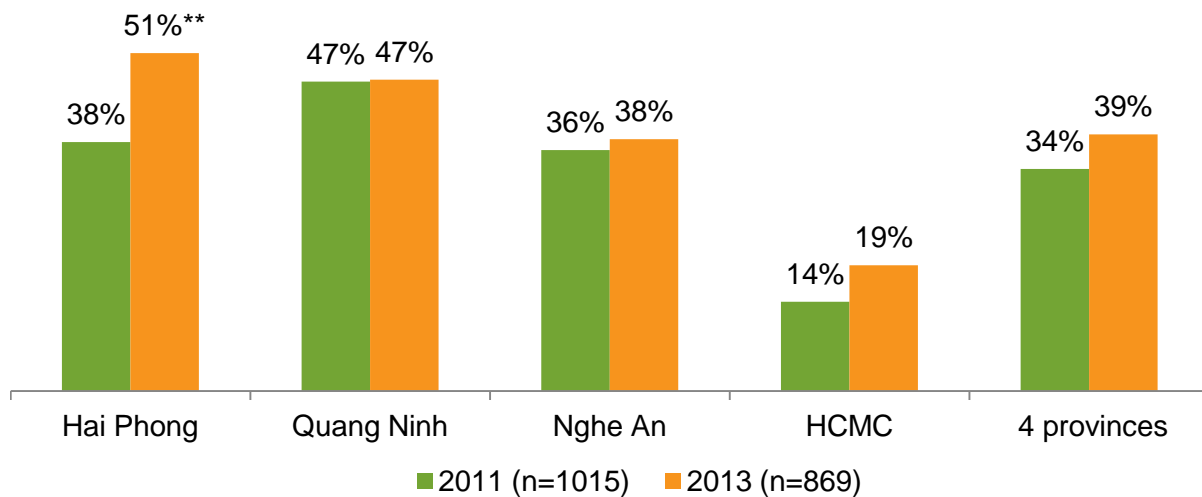


Overall, billboards achieved the highest coverage, with an estimated 70% of SWs reported seeing a project-supported BCC billboard in the previous 6 months followed by print materials. Close to 4 out of 10 SWs in the Song Dep provinces were exposed to IPC tools through Song Dep outreach<sup>17</sup> and 30% of respondents were exposed to IPC tools through other outreach. 14% of respondents were exposed to a BCC event.

Song Dep was the primary social marketing campaign focused on SW and SW-IDU populations conducted in 4 provinces – Hai Phong, Quang Ninh, Nghe An, and HCMC. This program employed peer educators to approach target groups and conduct outreach sessions and interpersonal communication on condom promotion, safe injecting behaviors, and VCT uptake, using tools designed for the project. Results of the Song Dep program were analyzed based on a sample from the 4 project provinces (n=869 SWs and 249 SW-IDUs). Figure 13 displays ever exposure to Song Dep programming across 4 project provinces, between 2011 and 2013. There was a significant increase (p<.01) in coverage of Song Dep in Hai Phong (38% to 51%), whereas no significant increase in coverage was found across the other three provinces. In 2013, among those ever exposed to Song Dep, 93% of SWs were exposed within the last 6 months.

<sup>17</sup> This figure was estimated based on the sample from 4 Song Dep provinces (n=869SWs)

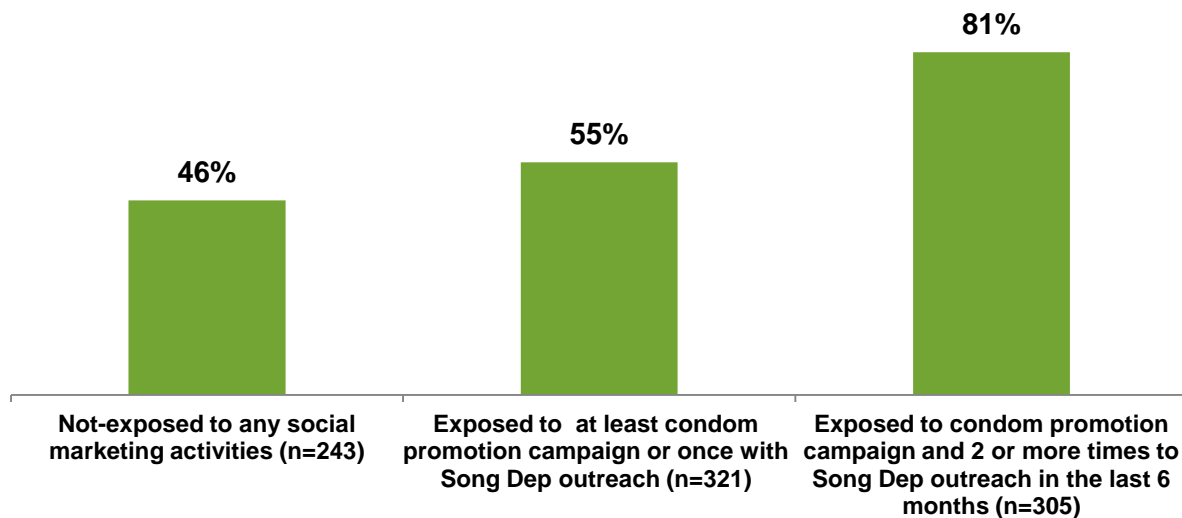
**Figure 13<sup>18</sup>: Ever exposed to Song Dep program among SWs, 2011 and 2013**



## 5.2. Association between social marketing program and key risk behaviors

Multivariate analysis was conducted to assess differences in CCU between SW-IDUs who reported contact with HIV intervention programs and those with no reported contact.

**Figure 14: CCU with clients in the last 1-month among SWs by program exposure status, 2013**



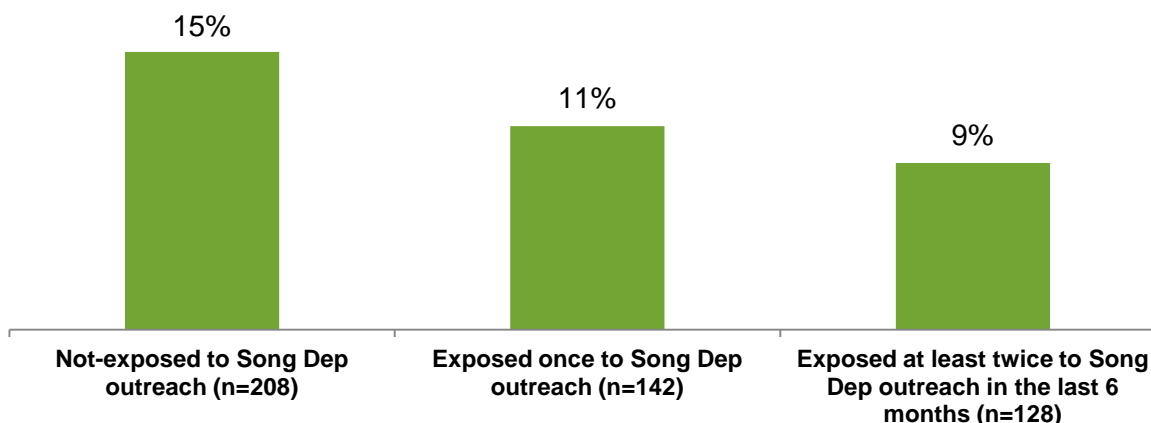
Based on 2013 survey results, *Figure 14* displays the association between Song Dep program exposure in the last 6 months and CCU in the last 1-month among SWs.

Repeat exposure to HIV prevention messaging through multiple channels was found to increase the likelihood of consistent condom use. SWs who were exposed to Song Dep activities at least twice in the last 6 months, together with behavior change campaigns promoting condom use, were

<sup>18</sup> Statistical significant level: (\*) p<.05; (\*\*) p<.01; (\*\*\*) p<.001

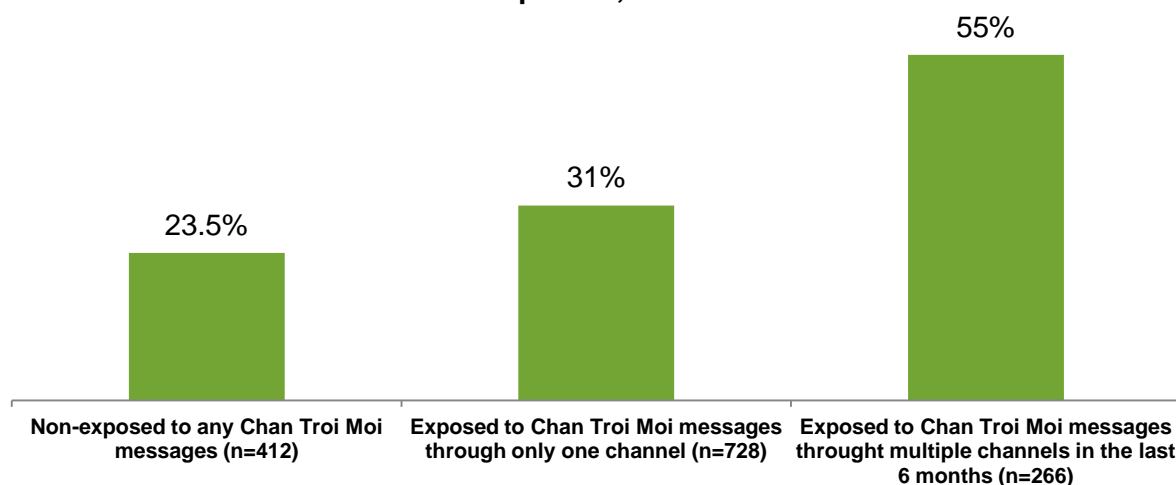
1.8 times more likely to use condoms consistently with their clients in the last 1 month than SWs who were not exposed to any social marketing activities (OR=1.8, CI=1.4-2.3, p=.032).

**Figure 15: Needle/syringe sharing in the last 1 month among SW-IDUs by program exposure, 2013**



Repeat exposure to Song Dep outreach was found to increase the likelihood of using a clean needle/syringe for every injection in the past 1-month. *Figure 15* displays the correlation between Song Dep exposure in the last 6 months and needle/syringe sharing in the last 1-month. SW-IDUs who were exposed to Song Dep outreach focusing on needle/syringe sharing reduction messages two or more times in the past 6 months were 1.6 times less likely to report sharing needles/syringes in the last 1 month than SW-IDUs who were not exposed to Song Dep outreach.

**Figure 16: VCT uptake in the last 6 months among SWs by Chan Troi Moi program exposure, 2013**



Multivariate analysis was conducted to assess differences in VCT use between SWs who reported exposure to the Chan Troi Moi campaign and those with no reported exposure. Based on 2013 survey results, *Figure 16* displays the association between Chan Troi Moi message exposure in the last 6 months and VCT use in the last 6 months among SWs. It was found that SWs who were exposed to Chan Troi Moi VCT uptake messages through multiple channels in the last 6 months were 2.36 times more likely to report using VCT in the last 6 months than SWs who were not exposed (OR=2.36, p=.012, CI=1.4-3.8).

## SUMMARY

- 1. Despite significant increases in consistent condom use since 2011, over one quarter of SWs and SW-IDUs still do not use condoms consistently.**

While there are substantial variations in reported CCU rates among SWs by province – ranging from 66% in HCMC, to 85% in Can Tho – overall levels of CCU remain lower than required to prevent HIV transmission among SWs and their partners. There is a need for continued promotion of CCU among SWs and SW-IDUs to further reduce new HIV infections.

- 2. Approximately 10% of SW-IDUs reported needle/syringe sharing within the past month, with variation by province.**

Needle and syringe sharing in the past 1-month among SW-IDUs ranges from 5% in Hai Phong to 19% in Quang Ninh. Ongoing efforts to motivate safer injecting behaviors are essential to reducing new HIV infections among SW-IDUs.

- 3. Although there have been substantial increases in the percentage of SWs receiving VCT in recent years, one third of SWs and almost half of SW-IDUs have never used VCT.**

In light of these findings, increasing regular HIV testing and counseling service uptake among SWs and SW-IDUs should be a key part of future HIV prevention and harm reduction programming.

- 4. The following factors are associated with safer behaviors among SWs & SW-IDUs: self efficacy to negotiate condom use, motivation to use condoms even with familiar clients, awareness of the connection between alcohol use and HIV risk, understanding of risks associated with sharing N/S with familiar and sexual partners, and access to confidential, friendly and affordable HIV testing and counseling services, as well as late night access to sterile injecting equipment.**

The findings from this study suggest that future HIV prevention programs targeting SWs and SW-IDUs should focus on these factors associated with behavior change to achieve optimal results.

- 5. Exposure to evidence-based behavior change communication, through multiple contacts and channels is needed to change HIV risk behaviors among SWs & SW-IDUs.**

Multiple contacts with Song Dep outreach together with exposure to HIV prevention campaign messages almost doubled the likelihood that a sex worker used a condom consistently in the last 1-month. Similarly, multiple contacts with Song Dep outreach decreased the likelihood of having shared a needle/syringe in the past 1-month. Exposure to the Chan Troi Moi mass media campaign through multiple channels also doubled the likelihood of having used VCT in the past 6 months.