



# MALAYSIA

## Integrated Biological and Behavioral Surveillance Survey 2017



**HIV/STI/Hepatitis C Sector**

Disease Control Division  
Ministry of Health Malaysia

2019

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## ACRONYMS AND ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
ART	Anti-Retroviral Therapy
ARV	Anti-Retroviral drugs
DIC	Drop-In Centre
DRC	Drug Rehabilitation Centre
FSW	Female Sex Worker
CBT	Community-Based Testing
HIV	Human Immunodeficiency Virus
CM	Case Management
IBBS	Integrated Biological Behavioural Surveillance
JAKIM	Department of Islamic Development
MAC	Malaysian AIDS Council
MDG	Millennium Development Goals
MMT	Methadone Maintenance Therapy
MoH	Ministry of Health
MSM	Men having Sex with Men
MTCT	Mother to Child Transmission
NADA	National Anti-Drug Agency
BSS	Behavioural Surveillance Survey
CBOs	Community-Based Organizations
PWID	Person/People Who Inject Drugs
KP	Key Populations
MREC	Medical Research Ethics Committee
NGOs	Non-Government Organizations
NSEP	Needle and Syringe Exchange Programme
NSP	National Strategic Plan
PLHIV	People Living with HIV
POs	Partner Organisations
RDS	Respondent Driven Sampling
SPSS	Statistical Package for the Social Sciences
STI	Sexually Transmitted Infection
VCT	Voluntary Counselling and Testing
WHO	World Health Organization

# EXECUTIVE SUMMARY

## INTRODUCTION

Since the first case of HIV/AIDS was reported in Malaysia in 1986, Malaysia's epidemic is concentrated among key population (KPs) with infection rates exceeding 5% especially among people/person who inject drugs (PWID), female sex worker (FSW), transgender people (TG) and men who have sex with men (MSM). Through the years, total numbers of new infection are on steady decline and this is contributed significantly by reduction of new HIV infections through injecting drug use. However, there is concern today that the changing trend of HIV infection in Malaysia from predominantly injecting drug use to more sexual transmission has led to rebound HIV epidemic in near future.

To trace the trend and pattern of the HIV epidemic, Malaysia has incorporated Integrated Biological and Behavioural Surveillance (IBBS) survey since 2009 to compliment the National HIV surveillance system. Conducted every 2 to 3 years, this survey aims to assess the local trend of HIV epidemic in the country and to identify the factors that may impact the course of the epidemic in a specific geographic and population being studied. The findings from this survey will be used to project and estimate the epidemic and disease progress over time which is crucial for better planning of preventive activities among KPs.

IBBS 2017 was conducted via cross-sectional method using Respondent Driven Sampling (RDS) between April 2017 and September 2017 involving 12 states in Malaysia. A total of 3,614 respondents participated in the survey including PWID (n=1,413), MSM (n=682), FSW (n=630) and TG (n=889). Respondents were recruited and interviewed in drop-in centres and site offices of related non-government organisations (NGOs) and Health Care Centres. Some of the study sites supplied services to more than one KP. Participation in the study was voluntary and contingent upon eligibility criteria in the screening process, which then included a structured interviewer administered questionnaire. Unlinked anonymous HIV testing using HIV rapid test with informed consent was performed during this survey to measure the HIV prevalence. Results were not disclosed to respondents; instead they were referred to the nearest health clinic for proper testing and counselling.

## KEY FINDINGS

Summary of key findings are presented in Table 1.

### a) People Who Inject Drug

Majority of the PWID respondents were above 30 years of age (91%) with median age of 40 years, Malay (88.6%), Muslim (90.9%), had attained at least secondary school level education (79.5%), and not married (51.2%). While almost one third of the respondents had secured job

with monthly income (29.9%), more than half of the PWID respondents reported to be independent worker engaged in odd jobs (59.6%). The respondents had stayed in the city for a median of 31 years. A large proportion of the respondents were chronic injectors who have been injecting for more than 5 years (79.8%) with heroin remaining as the most commonly injected drug (97.3%). The median duration of injecting was about 25 years.

The overall HIV prevalence continued to decline from 18.9% in 2012 to 16.3% in 2014 and 13.4% in 2017 with constantly low injection frequency and high percentage of safe injecting practice at last injection in the last 5-6 years. Kelantan and Terengganu continued to be the states with highest HIV prevalence recorded at 31% and 24.7% respectively. The third highest prevalence was recorded in Kuala Lumpur (24.6%).

Majority of the PWID respondents had tested for HIV and were informed of their result in the last 12 months (90%). Approximately 38.4% of the respondents were enrolled in MMT. Regarding sexual practice, an alarming percentage of 74.3% did not use condom during last sex.

#### **b) Female sex workers**

Majority of the female sex workers were aged 30 and above (70.5%) with median age of 37 years. They were predominantly Malay (46%), Muslim (66.8%), had attained at least secondary school level education (54.6%) and were divorced (40.6%). Also, more than two-thirds worked exclusively as sex workers (67.6%) and often met their clients in hotels or motels (45.8%) followed by street (22.5%) and brothels (10.8%).

The mean age of sex debut was 18.8 years old and mean age of first sex in exchange for money was 24 years old. The median duration of sex work was nine years while median number of clients served per week was four. Condom use with clients in the past 12 months as well as with recent client have remained reasonably high in all three rounds of the IBBS (2012, 2014 and 2017). Also, condom use with recent boyfriend or husband has substantively improved in 2017 to 47.9% after a drastic drop from 53.9% in 2012 to 29.6% in 2014. However, an alarming drop in client's preference for protected sex was observed. The percentage declined from 54.7% in 2012 to 13.7% and 8.7% in 2014 and 2017 respectively.

Although alcohol consumption before sex has declined in 2017, a sizeable proportion of the FSW respondents shared that they continued to consume alcohol before having sex in the past one month (34%) and thus increasing the probability of unprotected sex accompanied by heightened risk for contracting HIV. Similarly, a substantive percentage of FSWs continued to use syabu/ice before sex in the current survey just as recorded in the previous two rounds of the IBBS.

Progressively, more FSW reportedly had undergone HIV test and were informed of their result in 2017 (81.4%) than they had in 2014 (79.4%) and 2012 (32.8%), indicating an impressive progress as the country works towards achieving the Ending AIDS goal by 2030. The most recent innovative approach of training outreach worker to provide community-based HIV screening contributed greatly to this increase in HIV test among the FSW. However, proportion of FSW PLHIV on ART was rather low at only 3.2% in 2017. Health seeking behaviour in the context of STI was also low with under one fifth of the respondents in 2017 reporting to have visited an STI clinic in the last three months (18.5%).

Overall, the HIV prevalence among FSW has declined from 7.3% in 2014 to 6.3% in 2017. Highest prevalence rate is consistently observed in Kuala Lumpur 16.9% and 15% in 2017 and 2014 respectively. Some states were observed to experience a declining trend including Perak, Pahang and Sarawak. Sabah recorded a lower prevalence rate in 2017 when compared to 2014 but the figure is slightly higher compared to the percentage recorded in 2012. Penang recorded an upward trend in its HIV prevalence between 2012 and 2017.

### **c) Transgender**

The TG respondents were mainly in the 20-39 age group (72.7%) with median age of 32, of Malay ethnicity (63%), Muslim (79.4%) and had attained at least secondary school level education (69.5%). The median age of transgender debut was 13 years while sexual debut was 16 years.

Sex work remained as one of the top three source of income among the TG respondents after a significant increase from just 2% in 2012 to 27.4% in 2014. Majority of the TG respondents reported to have a male permanent partner in all three rounds of the surveys (2012 – 98.1%, 2014 – 96.4% and 2017 – 99.1%). Condom use with most recent male client and male consensual partner improved in 2017 when compared to 2014. However, condom use with recent male consensual partner remained consistently lower than reported condom use with recent male client.

Substance abuse seemed to have decreased among the TG respondents. Alcohol consumption before sex has decreased in the recent survey (2014 – 38.7% and 2017 – 28.5%). However, a sizeable percentage of respondents continued to use syabu/ice before sex in the current survey just as observed in the previous two rounds (2012 – 17.9%, 2014: 19.3% and 2017 – 19.2%).

Health seeking behaviour reflected by STI check-up showed an overall downward trend while the opposite was observed for HIV testing. Increasing number of TG respondents were observed to have undergone HIV testing in the last five to six years. In 2012 only 57.8% reported to have undergone HIV testing but this percentage increased to 78% in 2017. Contrariwise, percentage of TG respondents who have had HIV test and informed of their

result has remarkably decreased in 2017 (43%) when compared to 2014 (71.7%). Also, less than half of the TG population have adequate knowledge on HIV prevention and risk although the scoring had slightly improved in the last three years (40.6% in 2012, 38.9% in 2014 and 47.1% in 2017).

Overall the national HIV prevalence among TG continued to increase from 4.8% in 2012 to 6.3% in 2014 and 10.7% in 2017. Kuala Lumpur in the West region consistently recorded the highest HIV prevalence followed by Negeri Sembilan and Johor in the South region.

#### **d) Men who have sex with men**

The MSM respondents were mostly young, with 41% being below the age of 24 and 62.2% below the age of 30 with median age of 26 years. Overall, majority of the respondents were Malay (49.7%), Muslim (71.6%), had attained at least secondary level education (52.8%), unmarried (86.5%) and were employed (69.4%).

The median age of anal sex debut was 17 years. Almost three quarter of the respondents had anal sex in the last one month (71.9%) with median number of different men for sex at 2. Reported use of condom was generally high with 85.2% respondents sharing that they have used a condom during sex. However, for anal sex, a lower percentage of respondents shared that they had used condom during last sex (65.4%). Also, frequency of consistent condom use was highest with paid partners (53%) and lowest with casual partner (37.6%).

In regard to health seeking behaviour, only 12.8% attended STI check-up, while slightly more than half of the respondents had anal examination as part of their check-up (57.5%). For HIV testing, more than two third of the respondents reported to have been tested (67.7%). A similar substantive percentage of 66.9% of the respondents had tested and were informed of their result in the past 12 months.

A large proportion of the MSM (68.9%) commented that they were not contacted by any NGO outreach worker or healthcare worker. Similarly, 62.6% of the respondents shared that they did not receive condoms, or any information related to HIV/STI. Comprehensive knowledge and risk perception on HIV also remained low with only 49.6% having adequate knowledge. A small percentage of the MSM respondents admitted having participated in chemsex in the past 12 months (4.1%). While slightly less than half said they consumed alcohol at chemsex (42.9%), a larger proportion shared that they consumed drugs at chemsex (60.7%), increasing the probability of not using a condom during sex and hence heightening their risk for contracting HIV. Syabu/ice (11.4%) was the most commonly used drug followed by heroin (5.1%) which recorded a slight upward trend in its use in 2017.

The overall prevalence among MSM has increased by more than twofold from 8.9% in 2014 to 21.6% in 2017. This increasing trend is mirrored by all states, particularly by Kuala Lumpur and Johor in which the prevalence in Kuala Lumpur doubled from 22% in 2014 to 43.3% in 2017. Similarly, HIV prevalence in Johor increased from 15.6% in 2014 to 31.1% in 2017. These two are also the most urbanised states in the country.

## CONCLUSION AND RECOMMENDATION

HIV prevalence among PWID has declined steadily in the last 5 years from 22.1% (2009) to 18.9% (2012), 16.3% (2014) and 13.4% (2017). This finding concurs with the high prevalence of safe injecting practices (above 90%) coupled with low injecting frequency. Nevertheless, states in the East Region are still facing with highest prevalence such as Kelantan (31.0%) and Terengganu (24.7%). Scaling up Harm Reduction Programmes in the East Region states will eventually cease the HIV epidemic among PWID.

Unlike PWID, HIV prevalence among other KPs (MSM, FSW and TG) have increased significantly between 2012 and 2014 - 7.1% to 21.6% for MSM, 4.2% to 6.3% for FSW and 4.8% to 10.7% for TG. This is comparable with our surveillance data which show the share of new infections attributed to sexual transmission had increased to more than 80% of the annual total. High prevalence of unprotected sex substantiated by increasing trend of substance abuse prior to having sex offer a valid explanation. Behaviour change communication focusing on persistent condom use among KPs was either ineffective, inadequate or not reaching the target groups. Way forward to reach the key population is to make use of “digital age” as entry point to get a broader coverage to most at risk populations and to use this platform to link them to HIV care.

Overall antiretroviral therapy (ART) coverage among KPs did not improve over time. There is a grave need to explore reasons for not initiating ART from both perspectives – health care provider and KPs and effort to accelerate coverage cannot be delayed any longer.

**Table 1: Summary findings of IBBS 2017**

PWID	2017 (n=1413)
HIV Prevalence	13.4%
Duration of injecting (median year)	15
Median number of injection/days	2
Used sterile needle during last injection	79.5%
Received N/S in the past 12 months	70.8%
Condom use with most recent partner	25.8%
Knowledge on modes of transmission	54.4%
Tested in the past 12 months and knew results	38.9%
Reached with prevention program	65.5%
Received ARV	4.7%
Had enrolled in MMT program	38.4%

FSW	2017 (n=630)
HIV Prevalence	6.3%
Duration of sex work (median year)	24
Number of day work/week (median)	5
Number of client(s) in the past 1 week (median)	4
Condom use with most recent client	83.5%
Received free condom in the last 12 months	78.7%
Used psychotropic drugs before sex	27.5%
Consumed alcohol before sex	34.0%
Injected drugs in the last 12 months	2.7%
Had been diagnosed with STI in the past 12 months	3.2%
Knowledge on modes of transmission	41.0%
Tested in the past 12 months and knew results	35.1%
Reached with prevention program	42.7%
Received ART	1.4%
MSM	2017 (n=682)
HIV Prevalence	21.6%
Duration of risk behavior (median year)	
Ever being paid for anal sex in the last 12 months	34.0%
Condom use with most recent partner	65.4%
Received free condom in the last 12 months	36%
Used psychotropic drugs before sex	NA
Consumed alcohol before sex	32.1%
Injected drugs in the last 12 months	0.9%
Had been diagnosed with STI in the past 12 months	14.7%
Knowledge on modes of transmission	49.6%
Tested in the past 12 months and knew results	43.3%
Reached with prevention program	37.4%
Received ART	13.5%
TG	2017 (n=889)
HIV Prevalence	10.9%
Duration of risk behavior (median year)	13
Had received money for sex with man	80.0%
Condom use with most recent client	83.3%
Received free condom in the last 12 months	63.1%
Used psychotropic drugs before sex	NA
Consumed alcohol before sex	28.5%
Injected drugs in the last 12 months	1.4%
Had been diagnosed with STI in the past 12 months	4.6%
Knowledge on modes of transmission	47.1%
Tested in the past 12 months and knew results	43.0%
Reached with prevention program <sup>1</sup>	65.5%
Received ART	3.7%

<sup>1</sup> Reached with prevention programmes refers to the KPs who received free condom in the last 12 months and know where to go for HIV test



## INTRODUCTION

### BACKGROUND

Malaysia is a country with concentrated HIV epidemic with infection rates remain high (above 5%) among key populations (KPs) especially people who inject drugs (PWID), female sex workers (FSW), transgender people (TG) and men who have sex with men (MSM). PWID was the main driver bearing the brunt of about 70-80% of all new reported cases, yet the trend has started to decline constantly beginning 2004 and reached 4% in 2016.

About 92,895 people living with HIV (PLHIV), in which 90,603 (97.5%) have been notified through the surveillance system at the end of 2015. Five (5) states – Johor, Selangor, Kelantan, Pahang and Terengganu contributed almost two-thirds (62%) of all PLHIV in Malaysia (1) . PLHIV in Malaysia is generally predominant among males (89%) but the trend progressively shifted towards increasing prevalence rates among female with male/female ratio decreasing from 9.6 in 2000 to 5.5 in 2015 (1).

Results from IBBS 2014 survey showed a slowly reducing infection rates among PWID at the national level, yet the highest prevalence demonstrated in Kelantan (44.7%), Terengganu (30.0%), Johor (27.1%) and Kuala Lumpur (21.3%), while the lowest incidence rate illustrated in Melaka (1.7%) and Pulau Pinang (1.6%) (2) . HIV prevalence among FSW was the highest in Kuala Lumpur (17.1%) and Pahang (14.5%) and the lowest in Perak (0.6%). However, rapidly increasing HIV prevalence was reported in Sabah (from 1.1% in 2012 to 6.7% in 2014) and Sarawak (from 0.7% to 6.7%) in FSW group. The highest HIV infection rates was in Johor (15.7% among MSM and 10.6% among TG) and significantly escalated in Kuala Lumpur among MSM (from 10.2% in 2012 to 22.0% in 2014) and TG (from 4.8% in 2012 to 19.3% in 2014).

The national surveillance system reported that the new HIV infection has declined by 50%, while HIV/AIDS related death incidence has stabilised from 2000 to 2015 (1) . Malaysia had been significantly making progress in expanding antiretroviral (ARV) availability and accessibility as it became the integral component of care continuum, treatment and prevention back in 1990. While approximately 25,700 PLHIV were on life-saving antiretroviral therapy (ART), the proportion of women (70%) getting ART was higher than that of men (23%) by the end of 2015 (1) .

The implementation of NSP 2011-2015 has come to its end and currently replaced with the new National Strategic Plan for Ending AIDS 2016-2030. While the targets of previous NSP (2011-2015) to prevent and reduce the risk and spread of HIV infection, improve life quality of PLHIV, and reduce the social and economic impact due to HIV and AIDS on the individual, family and society have been achieved, there are still significant areas that need to be reformed to close the AIDS chapter in Malaysia, particularly on ARV coverage and prevention

programmes among key populations (3). Summary of achievements according to five focus areas in National Strategic Plan for Ending AIDS 2016-2030 are detailed below (4) .

- a) Improving the quality and coverage of prevention programmes among most at risk and vulnerable populations
  - i. Prevention of HIV transmission through sharing of needles and syringes
  - ii. Prevention of HIV transmission through unprotected sex – partnership with NGO
  - iii. Prevention from mother to child transmission of HIV (PMTCT)
- b) Improving the quality and coverage of testing and treatment
  - i. Provide free HAART to patients with CD4 count < 400
  - ii. Bring prices of HIV drugs down through negotiations with patent holder
  - iii. Encourage local production of HIV drugs that are not patented in Malaysia
  - iv. Consider the use of ‘Right of Government’ under the Patents Act 1983 (i.e. the ‘Government Use’ option)
- c) Up-scaling access to care, support and social impact mitigation programmes for PLHIV and those affected
- d) Maintaining and improving an enabling environment for HIV prevention, treatment, care and support
- e) Improving the quality of strategic information through monitoring, evaluation and research

The IBBS 2014 revealed that HIV prevalence among MSM substantially increased over the years with increase in alcohol consumption prior to sex and decrease in condom use with most recent partner over the last five years. The pattern of alcohol consumption before sex slightly increased, yet the percentage of condom use increased, and the incidence rate of HIV reduced among TG group. Meanwhile, over 90% of PWID respondents used sterile injecting equipment and a reduction of HIV prevalence for the last five years was illustrated.

The IBBS 2017 is conducted as part of surveillance that not only to determine the HIV prevalence, but also behavioural components of KPs that helps to predict the future trend of the epidemic. This is crucial to guide intervention development and provide policymakers with reliable information on intervention successes and areas of continued need and focus.

## RATIONALE OF STUDY

Surveillance of HIV/STI and behavioural risk factors should be the cornerstone of a country’s response to HIV. Unfortunately, the formal surveillance system is insufficient to adequately monitor the epidemic and risk trends in the country as it lacks the behavioural component. IBBS surveys need to be done periodically to reassess and adjust the surveillance system based on the information generated as well as assisting in impact assessment. By comparing

data with the previous rounds, the IBBS 2017 survey could assist in determining the epidemiologic pattern of the disease and risk behaviours trend in the country. The findings could also help the country to project and estimate the epidemic and disease progress over time which is crucial for better planning of preventive activities among KPs.

## OBJECTIVES OF STUDY

The primary objective of IBBS 2017 is to determine HIV prevalence and related behaviour among KPs.

The specific objectives of this study are to identify the socio-demographic characteristics; risk behaviours practices; knowledge of HIV/AIDS, prevalence of HIV and STI, and attributes of HIV prevalence among KPs. The study would also reveal exposure to available HIV/STI services among KPs including antiretroviral treatment.

## METHODOLOGY

### STUDY POPULATION

This study was conducted among key populations who are at risk for HIV in Malaysia – PWID, FSW, TG and MSM.

Inclusion criteria:

PWID	Current injectors aged 18 years or above and had been injecting drugs for at least six months prior to the date of survey
FSW	Women aged 18 years or above reporting having been paid in cash or in kind for penetrative sex within the last three months with more than 1 client
MSM	Individual who is biological male aged 18 years or older, who had engaged in anal penetrative sex with men at least once in the previous six months
TG	Individuals who is biologically male aged 18 years or above, but with female identity and had anal penetrative sex at least once in the previous six months

Exclusion criteria:

- a) Had already participated in the study (e.g. using a different recruitment coupon). [To minimise repeat respondents, clear instructions were given to recruiters and screening of respondents was carried out by researchers on site using screening questions];
- b) Unable to converse in the languages used in the interviews;
- c) Member of the IBBS research team; and
- d) Paid staff of the site organisations.

## SAMPLE SIZE

Sample size for each study population is calculated by first calculating the sample size required for a simple random sample (SRS) using StatCalc (Epi Info) and then adjusted by design effect of 4 (5) (Table 2). For each study site, sample size assigned is proportionate to KPs based on service coverage mapping (Table 3) with minimum size of 120 for ease of analysis. As for MSM, the distribution of sample size is based on service coverage in respective partner organizations.

**Table 2: Estimations and parameters for calculation of sample size**

<b>Study Population</b>	<b>Estimated population size</b>	<b>Expected HIV prevalence</b>	<b>Confidence limit</b>	<b>Sample size (CI 95%)</b>
PWID	170,000	18%	4%	1,416
FSW	40,000	4.0%	3%	808
TG	20,000	5.0%	3%	804
MSM	170,000	7.0%	4%	624
Total samples				3,652

**Table 3: Sample size distribution for each study population by state**

<b>Study Population</b>	<b>Study sites</b>	<b>State</b>	<b>Proportion size of MARPs (%)</b>	<b>Sample size</b>
PWID	1. Insaf Murni	Selangor	14.4	210
	2. Ikhlas	KL	12.1	180
	3. Intan Life Zone	Johor	9.5	140
	4. CAKNA	Terengganu	8.2	150
	5. Mawar	Melaka	3.7	120
	6. DIC	Pahang	11.7	170
	7. Sahabat	Kelantan	7.4	150
	8. Cahaya Harapan	Kedah	5.0	150
	9. Payong	Penang	3.7	120
		<b>Total sample</b>	<b>75.7</b>	<b>1,390</b>
FSW	1. PAMT	KL	12.1	120
	2. Payong	Penang	24.7	160
	3. PKI	Perak	28.5	180
	4. DIC	Pahang	8.5	120
	5. SAGA	Sabah	11.5	120
	6. SACs	Sarawak	5.3	120
		<b>Total sample</b>	<b>90.6</b>	<b>820</b>
TG	1. SEED	KL	13.3	150
	2. Payong	Penang	13.4	150
	3. Intan Life Zone	Johor	20.3	160
	4. PKI	Perak	13.3	150
	5. ReHak	Kelantan	10.5	120
	6. SAGA	Sabah	11.7	150
	7. SACs	Sarawak	8.5	150
		<b>Total sample</b>	<b>91.0</b>	<b>1,030</b>
MSM	1. KLASS	KL	29.4	200
	2. PHDA	Penang	20.6	140
	3. ILZ	Johor	20.6	140
	4. SAGA	Sabah	29.4	200
		<b>Total sample</b>	<b>100</b>	<b>680</b>
			<b>Grand total</b>	<b>3,920</b>

## STUDY DESIGN

This survey was conducted between March 2017 and June 2017 involving 17 study sites in 12 states depending on study population. We are using the respondent driven sampling method. Respondents were recruited and interviewed at the drop-in centres or site office of related NGOs or Health Clinics. A team consisted of nurses, Medical Assistants, Health Inspector and community staffs were placed in all study sites for data collection.

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### RESPONDENT DRIVEN SAMPLING

Respondent-driven sampling (RDS) employs a variant of a link-tracing network sampling strategy to collect data from hard-to-reach populations. By tracing the links in the underlying social network, the process exploits the social structure to expand the sample and reduce its dependence on the initial sample (seeds). RDS has been shown to be an effective sampling method for hidden and 'hard-to-reach' populations which has no sampling frame and it is especially designed to avoid many of the biases and problems of other chain referral systems such as snowballing (6).

We start with a set of initial respondents (seeds), who refer their peers; these in turn refer their peers, and so on, as the samples expands from wave to wave.

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### SELECTION OF SEEDS

For each study site (Table 2), about three to five seeds are pre-identified by the community but only two seeds will be planted at a time to start the recruitment chain. New seed will be planted if there are no more recruits or the recruitment speed is too slow. To ensure diversity, seeds are selected, as far as possible, based on geographic, demographic and key outcome variables such as HIV status, locations where clients are solicited (venue or street), socio-economic status, age, gender and their acquaintance with diverse people. Prior to selection of seeds, formative research through discussion with the NGOs and the communities on KPs networks and locations are determined.

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### RECRUITMENT OF RESPONDENT

Every respondent was screened for eligibility using screening question prior to enrolling to remove respondents who are not fulfilling the inclusion and exclusion criteria of this study.

After participating in the study, three coupons were given to each seed for recruiting the first wave of respondents among his/her peers in his/her network. Each wave of respondents

would recruit the next wave of respondents until the desired sample size is reached. The coupons of subsequent recruits are valid within 3-10 days of recruiter's own interview date depending on the level of wave and capability of the interviewers to manage large numbers of respondents.

For each successful interview and blood test, an incentive of RM40 (USD 12.5) was given to each respondent and RM10 (USD 3.1) for each eligible individual they recruited (up to maximum of three) and who consented to participate in the survey. To ensure confidentiality, no name is documented, and mother's initial will be used instead.

## STUDY INSTRUMENT AND DATA COLLECTION

Adopted from Family Health International (FHI) Guidelines for Repeated Behavioural Surveys in Population at Risk of HIV (7), the questionnaires were constructed in two main languages – Malay and English. However, the interviewer can conduct the survey in other local languages including Tamil and Mandarin. The questionnaire includes questions on socio demographic characteristics, sexual and drug use behaviours, STI symptoms, HIV knowledge and respondents' social network. Information is collected through face-to-face interview in a private room after which a sample of blood for HIV will be taken via finger prick and tested on-site using rapid test kit.

## DATA MANAGEMENT AND ANALYSIS

Data collection and management was managed at each site by the site manager using REDCap electronic data capture tools. REDCap (Research Electronic Data Capture) is a secure, web-based application designed to support data capture for research studies, providing 1) an intuitive interface for validated data entry; 2) audit trails for tracking data manipulation and export procedures; 3) automated export procedures for seamless data downloads to common statistical packages; and 4) procedures for importing data from external sources. Whereas, coupon management was done manually at the study site. The RDS Analysis Tool (RDSAT) software version 6.0 (Cornell University, Ithaca, NY, USA) was used to generate adjusted proportion estimates weighted by degree (i.e. network size). Characteristic estimates that could not be generated by RDSAT were performed using SPSS software version 16.0 (SPSS Inc, 2009, Chicago, Illinois).

## ETHICAL REVIEW

The IBBS 2017 study was conducted in compliance with both ethical and human rights standards and approved by National Research Committee (NMRR-17-998-33876 (IIR)). These



standards include respondent anonymity as well as referral to free Voluntary Counseling Testing (VCT). The respondents were fully informed about the nature of the study. HIV test result was not disclosed; however, respondents were offered referrals to the nearest VCT centre for proper counselling and testing.

## LIMITATIONS

This survey had several limitations. First, the finding we based on self-reported responses. Some data may possibly subject to socially desirability bias as participants were still needed to answer the questionnaire through face-to-face interview with a survey staff. Nevertheless, our staff is well trained and the promise to keep their confidentiality may have helped to reduce this bias. Secondly, since we gave an incentive for each successful interviews and blood test, there was a possibility of having participants not from the target KP. To reduce the possibility of having participants not from targeted KP, we are cooperating with the NGOs that represents the targeted KP to help the survey staff with the screening. Lastly, RDS survey data should be analysed using RDSAT to adjust proportion estimates based on participants network size, however since we conducted this survey at multiple sites depending on KP, adjusted proportions for national could not be calculated. In which case, only crude (i.e. unadjusted) proportions were reported instead.

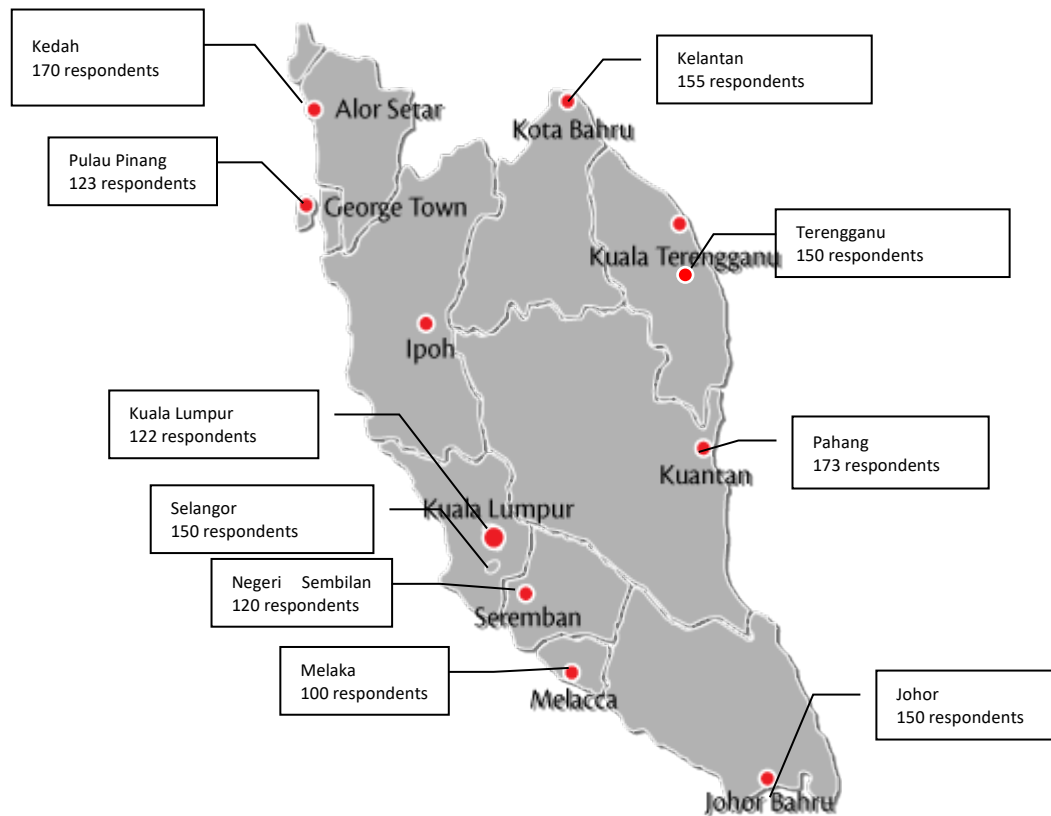
## PEOPLE WHO INJECT DRUGS (PWID)

IBBS 2017 among the PWID community recruited a total of 1,413 PWID (including seeds) from ten different states in the country. Recruitment was initiated with 13 seeds with decently long recruitment waves for all the states (Table 4).

**Table 4: Distribution of respondents and seeds by Region/State**

Region	State	No of seed	No of wave	No of respondents
<b>North</b>	Pulau Pinang	2	7	123
	Kedah	1	8	170
<b>West</b>	WPKL	1	8	122
	Selangor	1	6	150
<b>South</b>	Johor	2	8	150
	Melaka	1	7	100
	Negeri Sembilan	2	10	120
<b>East</b>	Kelantan	1	7	150
	Terengganu	1	7	150
	Pahang	1	9	173
Total samples		13		1,413

Geographical distribution of respondents is depicted in Figure 1: Geographical distribution of study sites for PWID and respondents (n=1,413). These states, except Negeri Sembilan, were also included in the previous round (IBBS 2014), allowing review and analysis of trends over time.



**Figure 1: Geographical distribution of study sites for PWID and respondents (n=1,413)**

## SOCIO-DEMOGRAPHIC CHARACTERISTICS

Table 5 presents selected socio-demographic characteristics of PWID respondents. Majority were aged between 30 to 49 years (71.8%), with median age of 40 years. Most respondents were Malay (88.6%), Muslim (90.9%), had attained at least secondary school level education (81.6%), and not married (51.2%). Slightly more than half of the PWID respondents reported to be independent worker engaged in odd jobs (59.6%) and had stayed in the city for a median of 31 years.

**Table 5: Socio-demographic characteristics of PWID respondents (N=1,413)**

	N	%
<b>Age</b>		
≤ 24	49	3.5
25 – 29	79	5.6
30 – 39	526	37.2
40 – 49	489	34.6
≥ 50	270	19.1
Median age (years)	40 (18 – 75)	
<b>Ethnic</b>		
Malay	1252	88.6
Chinese	89	6.3
Indian	53	3.8
Others	19	1.3
<b>Education</b>		
No school	20	1.4
Primary	240	17.0
Secondary	1124	79.5
Tertiary	29	2.1
<b>Marital status</b>		
Unmarried	723	51.2
Married	366	25.9
Divorced/widow	324	22.9
<b>Source of income</b>		
Job with salary	423	29.9
Independent worker (odd jobs)	842	59.6
Student	3	0.2
Unemployed	145	10.3
<b>Faith</b>		
Muslim	1285	90.9
Buddhism	61	4.3
Hinduism	43	3.0
Christianity	20	1.4
Sikhism	2	0.1
No religion	2	0.1
<b>Duration of living in the city</b>		
Median duration (years)	31 (1– 75)	

## DRUG USE AND INJECTING PRACTICES

Table 6 refers to drug use and injecting practices among the PWID respondents. Majority of the PWID had been using drugs and injecting drugs for more than 5 years (79.8%). Median duration of drug use was about 19 years while the median duration of injecting was about 25 years. Heroin was reported as the commonly injected drug (97.3%). Average daily injecting frequency was calculated based on self-reported injecting frequency in the past seven days.

Majority of the respondents injected drugs between 8 and 28 times in a week (54.5%). Approximately 79.5% and 79.7% of PWID reported to have used clean needle and syringe at last injection and in the past 12 months, respectively. Majority of the PWID respondents reported that they had no problem in accessing sterile needles and syringes (93.5%).

**Table 6: Drug use and injecting practices among PWID respondents (N=1,413)**

	N	%
Median duration of drug use (years)	19 (10-50)	
<b>Duration of injecting drug</b>		
< 2 years	52	3.7
2 - 5 years	231	16.5
> 5 years	1117	79.8
Median duration of injecting drug (years)	25 (11-58)	
<b>Type of drug injected*</b>		
Heroin	1375	97.3
Amphetamine (Syabu/ice)	269	19.0
Methamphetamine / Ecstasy	199	14.1
Ketamine	20	1.4
Subutex / Methadone	17	1.2
Diazepam (Valium)	14	1.0
LSD	1	0.1
Opium	9	0.6
Codeine	2	0.1
Others (Cannabis/dormicum/ketum)	4	0.3
<i>(*multiple response)</i>		
<b>Average weekly injection frequency</b>		
≤ 7 times	478	33.8
8 – 28 times	770	54.5
> 28 times	165	11.7
Median injection per day	2.0 (1-10)	
<b>Injecting practices past 12 months</b>		
Shared needle and syringe with friends	287	20.3
<b>Injecting practices at last injection</b>		
Used needle that had been previously used by others	290	20.5
<b>Had problem getting sterile needles and syringes</b>		
Yes	92	6.5

## SEXUAL PRACTICES

Table 7 refers to sexual practices among the PWID respondents. The percentage of PWID respondents who ever had sex (anal or vaginal) was 85.8% and majority of the respondents did not use condom during last sex (74.3%). Unprotected sex with regular partner in the past month was highest with a transgender person (85.7%) followed by female spouse (79.1%) and female partner (64.2%).

**Table 7: Sexual practices among PWID respondents (N=1,413)**

	N	%
<b>Ever had sex (anal/vaginal)</b>		
Yes	1212	85.8
No	201	14.2
<b>Condom used during last sex</b>		
Yes	311	25.7
No	901	74.3
<b>Number of times have sex in the past month</b>		
Median	0 (0 – 30)	
<b>Having sex with regular sex partner in the past month</b>		
Female spouse	296	24.4
Male	11	0.9
Female partner	137	11.3
TG	7	0.6
<b>Unprotected sex with regular partner in the past month</b>		
Female spouse (n =296)	234	79.1
Male (n = 11)	5	45.5
Female (n= 137)	88	64.2
TG (n = 7)	6	85.7

## PATTERN OF HIV SERVICES UTILIZATION

Table 8 provides information on coverage of HIV services to which the PWID respondents were exposed to in the last twelve months. Approximately 76.2% of the PWID respondents claimed they had ever attended health talks. Health department (53.1%) and NGO/CBO (53%) were reported as the two most common organisers of the health talks. Almost half of the respondents have participated in face-to-face discussions (43.7%) in the past one year while 43.8% reported to have participated in group discussions. In addition to health talks, only 36.6% of the PWID respondents had ever been contacted by an NGO field worker, health care worker or friend to discuss about HIV in the last 3 months. Sexual activity, proper use of

condom and spiritual awareness were among the issues mostly discussed at 91.9%, 91.7% and 90.9% respectively.

As for STI, a very low proportion of the PWID respondents reported to have visited STI clinic in the last three months (1.6%). Of those who had visited the clinic, about 43.5% had anal examination as part of check-up and 0.9% were diagnosed with STI in the past 12 months. The respondents were also asked to recall if they ever had any STI symptom. The most common STI symptoms experienced by the respondents were dysuria (2.4%), followed by penile discharge (0.8%) and penile ulcer (0.5%) Figure 2. A worrying percentage of 54.8% admitted that they did not seek any treatment for their symptoms while only 23.8% shared that they sought treatment from government facilities Figure 3.

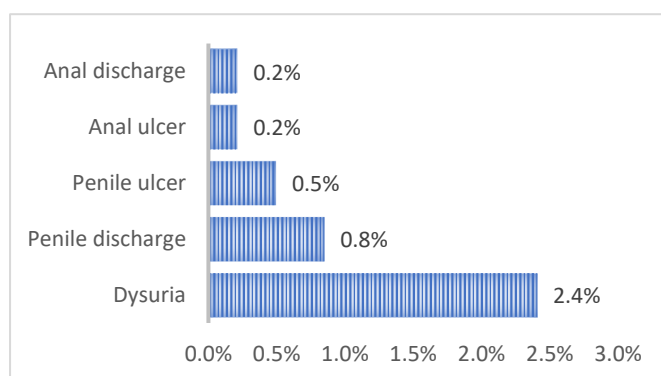
The proportion of PWID respondents who ever had their blood tested for HIV was 86.8%. About 43.2% of the respondents had their test in the past twelve months and out of those, 90% of them had their test and were informed of the result in the past twelve months. About 38.7% had informed their permanent partner, friend or family of their HIV test result.

With regard to enrolment in methadone programme, a total of 38.4% reported to have enrolled in Methadone Maintenance Therapy (MMT) Programme.

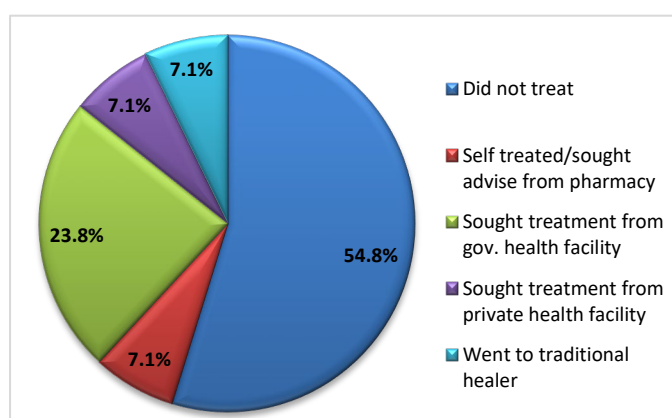
**Table 8: Services exposure and utilization among PWID respondents (N=1,413)**

	N	%
<b>Have ever attended health talk</b>		
Yes	137	76.2
No	336	23.8
<b>Health talk Organizer</b>		
Health Department	572	53.1
NGO / CBO	571	53.0
Other government department	168	15.6
Community program	146	13.6
<b>Last participated in face-to-face discussion</b>		
Never participated	465	32.9
More than 1 year ago	330	23.4
In the past 4 months – 1 year	212	15.0
In the past 3 months	406	28.7
<b>Last participated in group discussion</b>		
Never participated	488	34.5
In the past 3 months	379	26.8
In the past 4 months – 1 year	212	15.0
More than 1 year ago	334	23.6
<b>Contacted by NGO ORW/healthcare worker/friend to discuss about HIV in the past 3 months</b>		
Yes	517	36.6
No	896	63.4

Issues discussed in the past 3 months		
HIV prevention and control	937	66.3
Sexual activity / desire	1298	91.9
Proper use of condom	1296	91.7
Spiritual awareness	1285	90.9
Others	1362	96.4
<i>(*multiple responses)</i>		
STI		
Visited STI clinic in last 3 months	23	1.6
Had anal examination as part of checkup	10	43.5
Have been diagnosed with STI in past 12 months	13	0.9
VCT services		
Ever had blood tested for HIV	1226	86.8
Had HIV tested in the past year	610	43.2
Tested and informed of result in the last 12 months	549	90.0
Had HIV tested over a year ago	616	43.6
Shared result with permanent partner, friend or family	547	38.7
MMT program		
Enrolled in MMT program	542	38.4



**Figure 2: Distribution of STI symptoms as reported by respondents (n=1,413)**



**Figure 3: Action taken by respondents the last time they had STI (n=42)**



The findings related to HIV prevention kit is presented in Table 9. In terms of access to preventive material in the past year, majority of the PWID respondents reported to have received sterile needles (70.8%). Only 27.7% of the respondents shared that they did not receive any HIV prevention package in the past 12 months.

**Table 9: HIV prevention kit (N=1,413)**

	<b>N</b>	<b>%</b>
Given sterile needles only	434	30.7
Given sterile needles and information related to HIV/STI	413	29.2
Given sterile needles and information related to HIV/STI and condoms	154	10.9
Given information related to HIV/STI only	20	1.4
Did not receive any HIV prevention package	392	27.7

#### **AWARENESS ON HIV, RISK AND PREVENTION EFFORTS**

Table 10 refers to knowledge and risk perception of HIV among the PWID respondents. A total of 60.3% of the respondents felt that they were at risk of being infected with HIV. In terms of knowledge on HIV, only about 54.4% of the respondents reported to have adequate overall knowledge on HIV.

In general, more than 80% of the PWID respondents had attained correct answers to the questions accessing their knowledge on HIV except for question two in which only 78.1% of them were able to correctly tell that the risk of HIV transmission can be reduced by having one faithful, uninfected partner. Nevertheless, about 92.7% and 86% of the respondents were able to determine that a person cannot become infected through sharing of food with someone infected with HIV and through mosquito bites, respectively.

**Table 10: Knowledge of HIV, risk and prevention efforts among PWID respondents (N=1,413)**

	N	%
Felt at risk of being infected with HIV	872	60.3
<b>Knowledge of HIV*</b>		
1. A person can reduce HIV transmission by using condom	1181	83.6
2. A person can reduce risk of HIV by having one faithful, uninfected partner	1104	78.1
3. A person cannot become infected through mosquito bites	1215	86.0
4. A person cannot get HIV by sharing meal with someone who is infected with HIV	1310	92.7
5. A healthy-looking person can have HIV	1192	84.4
<i>(*number with correct answer)</i>		
<b>Score Knowledge of HIV</b>		
5 score	769	54.4
4 score	353	25.0
3 score	185	13.1
2 score	86	6.1
1 score	18	1.3
0 score	2	0.1
<i>(score 5=adequate knowledge, score 0-4=inadequate knowledge)</i>		

#### HIV PREVALENCE AND ANTIRETROVIRAL TREATMENT (ART)

Table 11 refers to HIV prevalence among the PWID respondents by states. This survey found overall HIV prevalence among the PWID respondents to be at 13.4% with the highest prevalence observed in Kelantan (31%), followed by Terengganu (24.7%) and Kuala Lumpur (24.6%). HIV prevalence in Kedah, Penang, Selangor and Melaka were below 10%. Of those (n=190) who were found to be positive through HIV rapid screening, 38.9% were already receiving antiretroviral treatment (Table 12). However, 4.2% of them had defaulted treatment with reasons such as due to financial problem (12.5%), no time to seek regular treatment (25%), unable to tolerate drugs side effects (25%) and others (37.5%). Notably, of the eight individuals who reported defaulting treatment, the default rate was 11% among those who had ever registered in the Methadone Therapy programme (5/43), and 9% among those never in the Methadone Therapy programme (3/32).

**Table 11: HIV prevalence by states (n=1,413)**

	N	%
<i>North Peninsular:</i>		
Kedah (n=170)	5	2.9
Penang (n=123)	3	2.4
<i>West Peninsular:</i>		
Selangor (n=150)	3	2.0
Kuala Lumpur (n=122)	30	24.6
<i>East Peninsular:</i>		
Kelantan (n=155)	48	31.0
Terengganu (n=150)	37	24.7
Pahang (n=173)	21	12.1
<i>South Peninsular:</i>		
Johor (n=150)	23	15.3
Melaka (n=100)	4	4
Negeri Sembilan (n=120)	16	13.3
Total prevalence	190	13.4

**Table 12: Treatment status among PLHIV**

	N	%
ART (n = 190)		
Still receiving ART	66	34.7
Defaulted ART	8	4.2
Never on ART	116	61.1
Reason defaulted treatment (n = 8)		
Financial problem	1	12.5
No time to seek regular treatment	2	25
Cannot tolerate side effect	2	25
Others	3	37.5

## DISCUSSION

The discussion on the PWID community is based on comparisons with the findings of IBBS 2009, 2012, 2014 and 2017. While the first round of IBBS in 2009 interviewed 630 PWID in Klang Valley, the subsequent round of IBBS in 2012 expanded geographically interviewing 1,906 PWID from seven different sites including Kedah, Pulau Pinang, Selangor, Kelantan, Terengganu, Pahang and Johor. Two additional sites, namely Melaka and Kuala Lumpur were added to the survey sites in 2014. IBBS 2014 interviewed 1,445 PWID in nine sites. The latest round of IBBS in 2017 interviewed 1,413 PWID from ten different sites with Negeri Sembilan being the latest addition to the existing sites. Apart from the difference in respondent size, the other limitation to the comparison is that the questionnaire used in 2017 has been modified. As such, certain comparisons could not be made with the previous rounds of

surveys. Recall bias could also be encountered during the interview session, whereby some respondents might have had difficulties in remembering the exact response for questions on their past behaviours and exposures. To avoid duplication of samples, precautions were taken by engaging communities to screen potential respondents who were present at the study sites before participating in the survey.

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## SOCIO-DEMOGRAPHIC CHARACTERISTICS

In comparing PWID populations from 2009, 2012, 2014 and 2017 on the socio-demographic characteristics (Table 13), it can be summarised that:

1. Although majority of respondents fell in the age range of 30 – 39 years, but the proportion of respondent among younger age group (24 – 39) over years are showing a declining trend while the proportion of PWID aged 40 – 49 years are showing the opposite indicating that injectors in Malaysia are getting older;
2. Majority of the PWID surveyed are of Malay ethnicity (90.2% in 2009, 85.9% in 2012, 86.2% in 2014 and 88.6% in 2017). However, the ethnicity of the respondents was better reflected in the 2014 survey which also recorded Sabahan and Sarawakian respondents separately compared to the other three rounds;
3. The percentage of PWID respondents who reported that they had secondary level education remained the highest in the surveys with no major changes in other categories as well;
4. The 2014 and 2017 surveys provided more information on the marital status of the PWID respondents as it also captured divorced and widowed PWID respondents. Unmarried PWID respondents remained the highest in all surveys (57.5% in 2009, 58.1% in 2012, 53.3% in 2014 and 51.2% in 2017). There is also a slight increase in percentage of divorced PWID in 2017 (22.9%) compared to the percentage recorded in 2014 (18.6%);
5. When asked about source of income, majority of the PWID respondents reported to be independent workers in the recent three rounds of surveys (42% in 2012, 44.2% in 2014 and 59.6% in 2017). There is a slight increase in the percentage of unemployed PWID in 2017 (10.3%) after a gradual decline from 2009 to 2014 (15.1% in 2009, 11.3% in 2012 and 9.3% in 2014).
6. Proportion of Muslim PWID respondents was the highest in all surveys (91.9% in 2009, 86.8% in 2012, 89% in 2014 and 90.9% in 2017).

**Table 13: Socio-demographic characteristics of PWID respondents for the 2009, 2012, 2014 and 2017 IBBS surveys.**

	2009 (%)	2012 (%)	2014 (%)	2017 (%)
<b>Gender</b>				
Male	97.8	98.1	100	100
Female	1.7	1.9	0	0
<b>Age</b>				
≤ 24	7.0	3.3	3.0	3.5
25 – 29	15.7	11.3	7.8	5.6
30 – 39	40.4	44.7	39.4	37.2
40 – 49	37.0	27.2	31.0	34.6
≥ 50		13.5	18.8	19.1
<b>Ethnic</b>				
Malay	90.2	85.9	86.2	88.6
Chinese	4.9	6	6.4	6.3
Indian	4.0	7.4	5.5	3.8
Others	0.9	0.2	0.4	1.3
<b>Education</b>				
No schooling	1.1	1.1	1.5	1.4
Primary	12.2	18.6	17.2	17.0
Secondary	83.4	78	77.6	79.5
Tertiary	3.3	2.3	3.7	2.1
<b>Marital status</b>				
Unmarried	57.5	58.1	53.3	51.2
Married	19.6	41.9	27.1	25.9
Divorced	-	-	18.6	22.9
Widow	-	-	1.0	-
<b>Source of Income</b>				
Job with salary	83.8	33.1	24.6	29.9
Independent worker (odd jobs)		42.0	44.2	59.6
Student	-	-	0.2	0.2
Other job	1.1	13.6	21.7	-
Unemployed	15.1	11.3	9.3	10.3
<b>Faith</b>				
Muslim	91.9	86.8	89.0	90.9
Hinduism	2.4	6.3	4.2	3.0
Buddhism	3.0	4.6	5.3	4.3
Christianity	2.1	2.2	1.4	1.4
Sikhism	-	-	0.1	0.1
No religion	-	-	0.1	0.1
Others	0.6	0.2	-	-
<b>Duration of living in the city</b>				
Mean duration (years)	-	28 (1-75)	31 (1–72)	31 (1 – 7)

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## DRUG USE AND INJECTING PRACTICES

PWID respondents in 2017 stayed injecting longer (25 years) than those in 2009 (8 years), 2012 (11.7 years) and 2014 (15 years) (Table 14). Although, the median duration of injecting has notably increased to 25 years in 2017, the median number of injections per day did not vary and continued to remain low at about 2.0 in 2012, 2014 and 2017 after a slight drop from 2.6 in 2009.

Similarly, the types of drugs injected did not vary among PWID in all four rounds. Heroin remained the primary drug of injection (87.1% in 2009, 96.4% in 2012, 97.2% in 2014 and 97.3% in 2017). Although use of Amphetamine (syabu) and Methamphetamine/Ecstasy declined in 2014 after an upsurge in 2012, the proportion of PWID that injected these drugs saw a climb again in 2017. The drug landscape in Malaysia has change from injecting heroin to ATS/Methamphetamine. This is in line with National Anti-Drug Agency (NADA) recent statistic which reported an increase in usage of methamphetamine (crystalline and tablets) while usage of opiates is declining since year 2014 (8).

To measure sharing practices, the respondents were asked if they used needle that had been previously used by others. Although proportion of PWID that used clean needles and syringes remained high in the past three rounds of surveys (83.5% in 2009, 97.5% in 2012 and 92.8% in 2014), the proportion of PWID that used needle that had been previously used by others bounced back in 2017 (20.5%) after a striking decline from 14.6% in 2009 to 2.5% in 2012 and 7.2% in 2014. This could be due to increase in enforcement activities by the police and anti-drug agency during the survey period. The respondents we unable to come forward or reached to get clean needles for worry they may get caught.

**Table 14: Comparison of injecting practices among PWID in 2009, 2012, 2014 and 2017 IBBS surveys**

	2009 (%)	2012 (%)	2014 (%)	2017 (%)
<b>Duration of injecting drug</b>				
Median duration injecting (years)	8.0 (0.5-40)	11.7 (0.2-40.9)	15 (1 – 57)	25 (11-58)
<b>Types of drug injected* (multiple responses)</b>				
Heroin	87.1	96.4	97.2	97.3
Amphetamine/Syabu	10.6	21.7	14.7	19.0
Methamphetamine/ecstasy	9.7	29.0	12.5	14.1
Ketamine	3.2	10.4	6.7	1.4
Subutex/methadone	15.2	14.0	4.6	1.2
Diazepam	42.9	12.3	3.0	1.0
Codeine	1.0	2.4	0.5	0.1
Opium	4.1	2.4	0.6	0.6
LSD	0.6	1.9	0.6	0.1
<b>Average daily injection frequency</b>				
Median no. of injection per day	2.6 (0-25)	2.0 (1-3)	2.0 (1-4)	2.0 (1–10)
<b>Injecting practices at last injection</b>				
Used clean needle and syringe	83.5	97.5	92.8	-
Used needle that had been previously used by others	14.6	2.5	7.2	20.5

#### PATTERN OF HIV SERVICES UTILISATION

Overall, proportion of PWID respondents that attended health talk increased by almost two-fold in 2017 (76.2%) when compared to the proportion recorded in 2014 (38.2%) and 2012 (37.9%) (Table 15). Likewise, proportion of PWID who had participated in face-to-face discussion had increased notably in 2017 (67.1%) when compared to the recorded percentage of 41.9% in 2014 and 26.2% in 2012. Contact by NGO had also improved in 2017 (28%) after a slight drop in 2014 (25.6%) in comparison with 2012 findings of 28%. However, percentage of PWID respondents who reported to have received sterile needles/ syringes and condoms continued to decrease from year 2012 to 2017. The recent increasing trend of non-injecting modes of drug use possibly explains the gradual decline in reported percentage of sterile needles/syringes received. Additionally, enforcement by authorities such as AADK and police during the survey period might have prevented them from accessing the clean needles at the drop-in centre or hotspots.

More than 70% of the PWID had ever been tested for HIV in all four rounds of the survey. Percentage of PWID who had their HIV test in the past 12 months and know their results have increased by more than two-fold in 2017 (90%) compared to 2014 (37.7%). This finding demonstrates the success of the country's effort in achieving the first 90 of the Fast Track targets to end AIDS among this key population. The renewed and strategic efforts including

clinic-based outreach (KK model) and community-based HIV screening (CBT) undoubtedly improved the PWID respondents' access to testing facilities and services in the country.

However, only a small proportion of the respondents reported to have visited STI clinics. In fact, the percentage of PWID who visited STI clinic continued to decline from 5.8% in 2012 to 1.9% in 2014 and 1.6% in 2017.

**Table 15: Comparison of HIV services utilization among PWID in 2009, 2012, 2014 and 2017 IBBS surveys**

	<b>2009</b>	<b>2012</b>	<b>2014</b>	<b>2017</b>
	<b>(%)</b>	<b>(%)</b>	<b>(%)</b>	<b>(%)</b>
Attended health talk	-	37.9	38.2	76.2
Never participated in face-to-face discussion	-	73.8	58.1	32.9
Contacted by NGO/healthcare worker in the past 3 mo.	-	28.0	25.6	36.6
Received sterile needles/syringes in the past 12 mo.	27.0	86.5	75.3	70.8
Received condoms in the past 12 mo.	10.3	33.8	13.6	10.9
Ever had HIV test done	71.1	85.0	86.2	86.8
Had HIV test in the past 12 mo. and know result	37.5	64.5	37.7	90.0
Visited STI clinic	-	5.8	1.9	1.6

#### **AWARENESS ON HIV, RISK AND PREVENTION EFFORTS**

Comprehensive knowledge on HIV, risk and prevention efforts saw a slight decline in 2017 after gradual improvement from year 2009 to 2014 (49.7% in 2009, 53.8% in 2012, 58.3% in 2014 and 54.4% in 2017) (Table 16). Incorrect knowledge was most common for the question on reducing risk of HIV by having one faithful partner.

It is important to note that the total number of questions had been reduced from seven to five in IBBS 2014 and IBBS 2017.



**Table 16: Comparison of HIV knowledge between IBBS 2009, 2012, 2014 and 2017**

	<b>2009 (%)</b>	<b>2012 (%)</b>	<b>2014 (%)</b>	<b>2017 (%)</b>
A person can reduce HIV transmission by using a condom	88.9	91.2	89.6	83.6
A person can reduce risk of HIV by having one faithful, uninfected partner	73.2	82.7	80.8	78.1
A person cannot become infected with HIV through mosquito bites	83.2	85.4	87.4	86.0
A person cannot become infected with HIV by sharing meal with someone infected with HIV	88.9	87.7	90.2	92.7
A healthy-looking person can have HIV	87.0	84.6	86.3	84.4
Adequate knowledge (score 5)	49.7	53.8	58.3	54.4

## HIV PREVALENCE

HIV prevalence among PWID in the country had declined steadily from 18.9% in 2012 to 16.3% in 2014 and 13.4% in 2017 attesting to the effectiveness of the Harm Reduction Programme inception in 2005/2006. The Harm Reduction Programme in the country consists of Needle/Syringe Exchange Programme and Methadone Maintenance Therapy.

Table 17 compares the HIV prevalence among PWID in the four rounds of surveys. The prevalence is highest in the East followed by the South and West regions. Though higher prevalence rates are recorded in Kelantan and Terengganu in the East region, the rates are gradually declining in these states. Similarly, Johor in the South region saw a striking drop from 27.1% in 2014 to 15.3% in 2017.

In contrary to the observation in these states, Kuala Lumpur in the West region and Melaka in the South region observed an increasing trend between 2012 and 2017. Penang in North region also recorded an increase in its prevalence rate in 2017 after a drop in 2014. It is important to note that Negeri Sembilan is a new state included in 2017 survey.

**Table 17: HIV prevalence by states, IBBS 2009-2014**

	2009 (%)	2012 (%)	2014 (%)	2017 (%)
<i>North Region:</i>				
Kedah	-	8.8	4.2	2.9
Penang	-	5.6	1.6	2.4
<i>West Region:</i>				
Selangor	22.1	5.3	5.7	2.0
Kuala Lumpur	-	-	21.7	24.6
<i>East Region:</i>				
Kelantan	-	46.5	44.7	31.0
Terengganu	-	32.5	30.0	24.7
Pahang	-	16.5	12.4	12.1
<i>South Region:</i>				
Johor	-	20.6	27.1	15.3
Melaka	-	-	1.7	4.0
Negeri Sembilan	-	-	-	13.3
National Prevalence	-	18.9	16.3	13.4

## CONCLUSION AND RECOMMENDATION

Although the methodologies used in IBBS 2009, IBBS 2012, IBBS 2014 and IBBS 2017 are different in terms of the questionnaire and locations and areas covered, the discussion thus far allowed reasonable comparisons between the 2009 and 2017 results. From the comparisons, the following conclusions could be derived and summarised:

- (a) HIV prevalence among PWID in Malaysia continued to decline steadily between 2009 and 2017. The decline is largely attributable to the Harm Reduction Programme implemented country-wide since 2005/2006. A sustained and focused response in states with high prevalence above 20% such as in Kelantan, Terengganu, Kuala Lumpur will further contribute in reducing the prevalence among this key population. Efforts should also be focused on increasing the proportion of PWID who are tested positive for HIV accessing ART. Low treatment coverage is prevalent among PWID in Malaysia. Both factors – health care providers and PLHIV factors had intercepting role in ART uptake. Apart from providers' worry for resistance development resulting from non-adherence to treatment, stigma and discrimination both internal and external amplify the low access to ART by PWID. Nonetheless, we found high ART retention rate (90%) in this study indicating hope to possibly increase the ART initiation for this KP in our effort to close the treatment gap.
- (b) Socio-demographic characteristics of PWID respondents in IBBS 2017 remained similar to those interviewed in IBBS 2009, 2012 and 2014 but proportion of young injectors is declining. As the PWID aged and continue to inject drugs, with the anecdotal evidence that they are mostly made up of chronic injectors, the duration of injecting is also

observed to increase among them. However, although the years in exposure to risk behaviour increased, fortunately, heroin remained the mostly widely injected drug. This indicates the chances of enrolling this key population into medically assisted therapy like Methadone Maintenance Therapy (MMT) and subsequently ART initiation. Surveillance data from MOH showed favourable needle and syringe return rate, increasing steadily from 61.5% to 70.4% between 2013 and 2017. Of those Needle and Syringe Exchange Programme (NSEP) clients, only up to 20% clients were referred to MMT. Therefore, scaling up referral to MMT would in return increase chances for ART.

- (a) Given the increasing trend of ATS and methamphetamine usage as compared to previous survey, it is recommended to adopt a comprehensive and integrated combination intervention approach for both HIV services such as prevention and linkages to care and treatment and drug treatment. This survey indicates there is a strong need for clear and strategic policy recommendations on how to address the health-related harms among these injectors who are not traditionally served by the MMT programme that were designed in the past for heroin injectors.
- (b) Low injecting frequency of approximately two injections a day and the practice of consistently using clean needles and syringes (above 90%) increased the probability of reducing the HIV transmission risk and subsequently HIV prevalence among the PWID in the long run. The Harm Reduction Programme facilitated access to clean needle and syringes among the PWID through the NSEP implemented in their areas. The smart partnership between the government and civil societies supported by sustained government funding allowed for enough coverage of prevention programmes targeted at PWID. However, aggressive enforcement that invariably lead to non-accessibility of clean needles need to be tackled at policy level.
- (c) There is a need to maintain the minimum coverage of such prevention programmes to maintain the gains achieved. Based on the 2008 Report of the Commission on AIDS in Asia, coverage of HIV intervention & prevention programs must reach 80% to initiate the 60% behaviour change to reverse the epidemic (9).
- (d) Percentage of PWID who had HIV test in the past 12 months and know the result improved tremendously reaching 90% in 2017 signalling the effectiveness of Harm Reduction efforts including the recently introduced CBT among the PWID. Selected outreach workers trained and accredited to provide HIV screening and counselling using rapid point-of-care testing services in non-clinical settings. A total of 18 outreach workers of 13 partner organizations were trained. To date, a total of 508 clients were screened at CBT and counting since it started in mid-2017. In addition to CBT, another smart partnership between the government and the civil society is the Case Management (CM) programme, introduced to enhance linkage between PLHIV and health care provider. With implementation of these programme, the country is on track with the first 90 and reaching 95% in 2030 is promising.

- (e) Practice of safe sex was low among the PWID in IBBS 2017. Apart from Harm Reduction Programme, more effort on sexual health education focusing on consistent practice of protected sex should be emphasized among PWID by the outreach workers.

The IBBS 2017 just as the previous rounds allowed the country to review where it stands and take stock of the progress and achievements made, lessons learnt, and challenges faced in responding to the HIV epidemic in the country. The observations made in IBBS 2009, 2012, 2014 and 2017 undoubtedly reflected the gains achieved in reducing the HIV prevalence among the PWID through impactful HIV prevention efforts, which includes the NSEP (both outreach and KK model), MMT and more recently, the CBT and CM. Knowing one's status is the first step in HIV prevention and the government's investment in CBT had added value to the HIV testing coverage among PWID in the country. While CM programme ensure link to care after diagnosis for PLHIV which will help to narrow the gap of second 90. These timely interventions coupled with strong commitments and investments from the government and civil society contributed to the reduced HIV prevalence between 2009 and 2017 among the PWID.

Now, to secure and sustain the gains made, it is imperative that the country continues the implementation of these impactful interventions to further reduce the HIV prevalence among the PWID especially in areas with high HIV prevalence. More PWID must be encouraged to enrol in MMT to not only reduce the risk of infection but to also close the HIV treatment gap. The success of NSEP is not replicated in the uptake of MMT. Also, while opiate users are encouraged to enrol into MMT and initiate ART for those who are tested positive, similar effective strategies and interventions need to be identified to close the treatment gap among non-opiate users. Outreach work and health education/promotion on preventing HIV transmission should also focus on preventing sexual transmission of HIV among the PWID by equipping them with at least the basic knowledge on consistent practice of protected sex. The key to not losing ground in responding to the epidemic among the PWID is in the prevention of new infections.

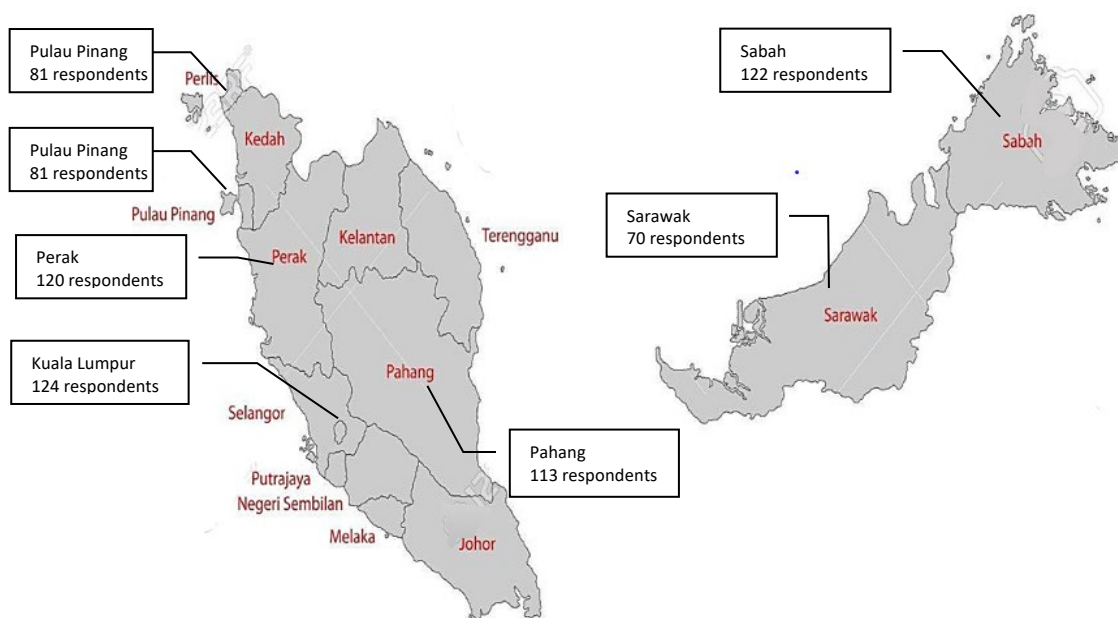
## FEMALE SEX WORKERS (FSW)

The IBBS 2017 sampled FSW from six study sites with a total of 630 respondents (including seeds). Recruitment was initiated with 12 seeds (Table 18) with reasonably long recruitment waves observed in almost all states particularly in Pahang, Sarawak and Sabah as seen in the smaller number of seed but longer waves penetrating well into the FSW network which otherwise may have had a zero chance of being included in the study.

Geographical distribution of respondents is depicted in Figure 4. These states were also included in the previous round (IBBS 2014), allowing review and analysis of trends over time.

**Table 18: Distribution of respondents and seeds by Region/State**

Region	State	No. Seed	No. Wave	No. Respondents
<b>West Malaysia:</b>				
North	Penang	2	9	81
	Perak	3	6	120
West	Kuala Lumpur	3	10	124
East	Pahang	1	15	113
<b>East Malaysia:</b>				
	Sabah	2	12	122
	Sarawak	1	8	70
<b>TOTAL</b>		<b>12</b>		<b>630</b>



**Figure 4: Geographical distribution of study sites for FSW respondents (n=630)**

## SOCIO-DEMOGRAPHIC CHARACTERISTICS

The socio-demographic characteristics for FSW respondents are summarised in Table 19. Majority of FSW in the 2017 survey were in the 30-49 age group (51%) with median age of 37, of Malay ethnicity (46%), Muslim (66.8%), had attained at least secondary school level education (54.6%) and were divorced (40.6%). A large proportion worked exclusively as sex workers (67.6%) and often met their clients in hotels or motels (45.8%) followed by street (22.5%) and brothels (10.8%).

**Table 19: Socio-demographic characteristics of FSW respondents (n=630)**

	N	%
<b>Age</b>		
< 20	54	8.6
20 – 24	58	9.2
25 – 29	74	11.7
30 – 39	183	29.1
40 - 49	138	21.9
≥ 50	123	19.5
Median age (years)		37 (18 – 71)
<b>Ethnic</b>		
Malay	290	46.0
Chinese	69	11.0
Indian	90	14.3
Sabah	114	18.1
Sarawak	48	7.6
Orang Asli	2	0.3
Other Malaysian	17	2.7
<b>Education</b>		
No formal school	95	15.1
Primary	169	26.8
Secondary	344	54.6
Tertiary	22	3.5
<b>Faith</b>		
Muslim	421	66.8
Christianity	80	12.7
Hinduism	70	11.1
Buddhism	51	8.1
Others	8	1.3
<b>Marital status</b>		

Unmarried	187	29.7
Married	131	20.8
Divorced	256	40.6
Widow	56	8.9
<b>Places of contact clients</b>		
Brothel	46	10.8
Street	96	22.5
Home	13	3.1
Hotel/motel	195	45.8
Massage parlor	12	2.8
Karaoke bar	14	3.3
Bar/discotheque	22	5.2
Through phone/SMS/social network	24	5.6
Others	4	0.9
<b>Source of income</b>		
Full time sex work	426	67.6
Part time sex work	204	32.4

## SEXUAL HISTORY AND PARTNERS

Table 20 refers to sexual history and partners among the FSW respondents. The mean age of sex debut was 18.8 years old and mean age of first sex in exchange for money was 24 years old. A substantial proportion of the respondents were forced to have sex the first time (27.8%). Two most common first sexual partners were boyfriend (41.9%) and husband (39.7%). The median duration of sex work was nine years while median number of clients served per week was four. The respondents worked throughout median of five days a week.

**Table 20: Sexual history and sexual practices among FSW respondents (n=630)**

	N	%
Mean age of sex debut (years)		18.8 ± 4.1
Mean age of first sex in exchange for money (years)		24 (10 – 58)
Had been forced to have sex the first time	175	27.8
Husband as first sex partner	250	39.7
Boyfriend as first sex partner	264	41.9
Sibling/family as first sex partner	26	4.1
Friend/acquaintance as first sex partner	46	7.3
Stranger as first sex partner	44	7.0
<b>Duration of sex work:</b>		
Median duration of sex work (years)		9 (1 – 54)

<b>Client volume</b>	
Median number of clients in past 1 week	4 (0 - 40)
<b>Day work as sex worker in 1 week</b>	
Median number of days work as FSW in a week (day)	5 (0 - 7)

## CONDOM AVAILABILITY AND PATTERN OF CONDOM USE

Overall, almost all FSW respondents reported to have ever used condom during sex (95.9%) (Table 21). While majority (78.7%) of the respondents reported to have had access to condoms in the last 12 months, only 40.6% of respondents claimed to have received condoms from NGO/ORW/clinic in the past 12 months. The survey also revealed that majority (74%) of the establishments did not provide respondents with condoms while 14.6% establishments provided at a cost and 11.4% provided for free. Condoms were mostly obtained from retail outlets such as 7-Eleven, small shops, supermarkets and gas stations (43.3%). A smaller percentage of 13.2% and 7.3% respondents said condoms were obtained from pharmacy and bar, guest house, hotel or club respectively.

Zooming further into condom use, a notable proportion (36.1%) of the FSW respondents reported to have had unprotected sex in the last 12 months. The percentage of condom used with most recent client was substantially higher (83.5%) than condom used during last sex with boyfriend or husband (47.9%). More than half of the respondents reported to almost always propose condom use to their clients (64.6%). The most frequently quoted reason for using condom include protection from sexual diseases (75.6%) and pregnancy prevention (32.1%) while the most frequently quoted reasons for not using condoms include client refusal (11.4%) and unavailability of condoms (4.1%).

**Table 21: Condom availability and condom use among FSW respondents (n=630)**

	N	%
<b>Condom availability</b>		
Have ever used condom during sex	604	95.9
Have access to condom in last 12 months	496	78.7
Have been given condoms by NGO/ORW/clinic past 12 months	256	40.6
<b>Condom provided by management at establishment:</b>		
Provided for free	72	11.4
Provided at a cost	92	14.6
Not provided	466	74
<b>Places condom were obtained:</b>		
Retail outlets (7-eleven/Small shops/supermarket/gas station)	273	43.3
Pharmacy	83	13.2
Bar/ guest house/ hotel/club	46	7.3



Clinics	17	2.7
Others	20	3.2
<b>Condom use behavior</b>		
Ever had unprotected sex in the last 12 months	227	36.1
Condom used with most recent client	526	83.5
Condom used the last time had sex with boyfriend/husband	302	47.9
<b>Reason for using condom with most recent client:</b>		
Protection from sexual diseases	476	75.6
Pregnancy prevention	202	32.1
Client proposed	55	8.7
Requested by manager/pimp	17	2.7
Other reason	6	1.0
<b>Reason for not using condom with most recent client:</b>		
Client refused	72	11.4
Condom not available	26	4.1
Under influence of drugs/alcohol	3	0.5
Perceived as 'clean' / taken medication	16	2.5
Other reason	10	1.6
<b>Frequency of condom proposed to client last week</b>		
Always	405	64.6
Not always	172	24.7
Never	20	3.2
No sex with clients in the last 1 week	30	4.8

## INTERVENTION COVERAGE

More than half or 62.5% of the FSW respondents reported to have attended health talk in the past year (Table 22). A similar proportion of 64.6% had face-to-face discussions while only 14.6% took part in group discussion more than one (1) year ago. The two most common organisers of the health talks include NGO or CBO at 33% followed by health department at 16.7%. In addition to health talks, 26% of the FSW respondents were contacted by NGO ORW or HCW with HIV transmission and prevention and proper use of condom being the most commonly discussed issues at 22.5% and 19% respectively.

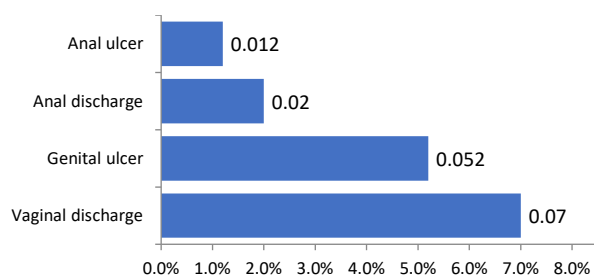
As for STI, a very small proportion of the FSW respondents reported to have been diagnosed with STI in the past 12 months (3.2%). Almost one fifth of the FSW respondents have visited STI clinic in the last three months (18.5%). Of those who had visited the clinic, a majority of them had anal examination as part of check-up (75.9%). The most common STI symptoms experienced by FSW respondents in the last 12 months include vaginal discharge (7%) followed by genital ulcer (5.2%), anal discharge (2%) and anal ulcer (1.2%) (Figure 5). Of those respondents who had reported that they had STI, more than two third (67%) sought treatment from a doctor (Figure 6).

With regard to HIV, a large proportion of the FSW respondents were observed to know where to get HIV test done (81.4%). Similarly, a substantive proportion of the FSW reported to have been tested for HIV (69.5%). Slightly more than half (54.6%) had their test in the past twelve months while 45.4% of them had been tested for HIV over 12 months ago. Almost one third of the respondents had informed their permanent partner, friend or family member of their HIV test result (30.4%). When asked if their permanent partner had taken HIV test, majority of them responded that their partners have not taken HIV test (53%) while 30.5% responded that they do not have a permanent partner.

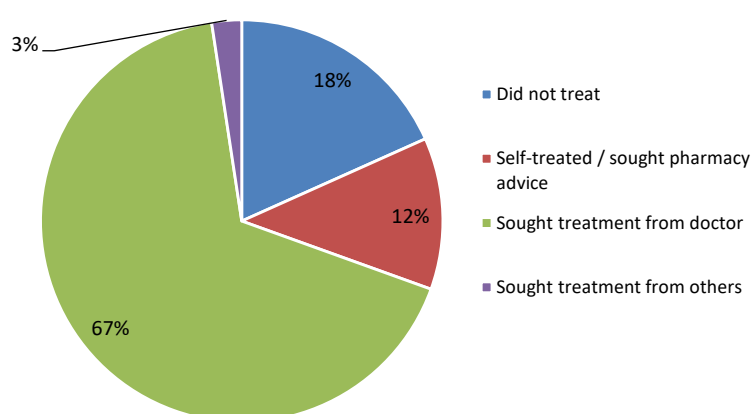
**Table 22: Services utilisation among FSW respondents (n=630)**

	N	%
<b>Health talk</b>		
Have ever attended health talk in the past year	394	62.5
Health talk organized by NGO / CBO	208	33
Health talk organized by Health Department	105	16.7
Health talk organized by other government departments	25	4
Health talk organized by others	24	3.8
<b>Last participated in individual discussion</b>		
Never participated in the past 3 months	407	64.6
In the past 3 months	84	13.3
In the past 4 months – 1 year	50	14.1
More than 1 year ago	407	64.6
<b>Last participated in group discussion</b>		
Never participated in the past 3 months	412	65.4
In the past 3 months	63	10
In the past 4 months – 1 year	63	10
More than 1 year ago	92	14.6
<b>Issues discussed in the past 3 months</b>		
Contacted by NGO ORW/HCW	164	26
HIV transmission and prevention (n=164)	142	22.5
Proper use of condom (n=164)	120	19
Spiritual awareness (n=164)	24	3.8
Sexual activity and pleasure (n=164)	50	7.9
Legal aid (n=164)	2	0.3
Other issues (n=164)	5	0.8
<i>*(multiple response)</i>		
<b>STI services</b>		
Had visited STI clinic in past 3 months	116	18.5
Had anal examination as part of checkup (n=116)	88	75.9

Have been diagnosed with STI in past 12 months	20	3.2
<b>VCT services</b>		
Know where to get HIV test	513	81.4
Had ever been tested for HIV	438	69.5
Had been tested for HIV in the past 12 months	239	54.6
Had been tested for HIV over 12 months ago	199	45.4
Shared result with permanent partner, friend or family member	133	30.4
<b>Permanent partner taken HIV test</b>		
Yes	104	16.5
No	334	53
No permanent partner	192	30.5



**Figure 5: Distribution of STI symptoms as reported by respondents in the last 12 months (n=630)**



**Figure 6: Action taken by respondents the last time they had STI (n=82)**

## PATTERN OF HIV SERVICES UTILISATION

More than one fourth of the FSW respondents reported to have received condoms (27.4%) while almost one third of the respondents reported to have also received information related to HIV/STI in addition to condoms (30%) (Table 23). However, a higher percentage of 40.3% of the respondents reported to have not received condoms or information related to HIV/STI. Also, of those who were HIV positive, only 3.2% reported to be currently receiving ARV treatment.

**Table 23: Pattern of HIV services utilisation (n=630)**

	N	%
<b>HIV Preventive kits</b>		
Received condoms only	233	27.4
Received condoms and information related to HIV/STI	255	30.0
Received information related to HIV/STI	19	2.2
Did not receive condoms or information related to HIV/STI	342	40.3
<b>Antiretroviral treatment (ART)</b>		
Currently receiving ART	2	3.2

## AWARENESS ON HIV, RISK AND PREVENTION EFFORTS

Table 24 presents results on comprehensive knowledge about HIV. The table also presents risk perception among the FSW respondents. The survey results revealed that almost three quarter of the respondents felt at risk of being infected with HIV (72.5%).

Also, a sizeable percentage of FSWs lacked comprehensive knowledge about HIV transmission and prevention (59%). Some (24.1%) FSWs incorrectly believed that HIV can be transmitted through mosquito bites while slightly more than one fourth of them did not know that a healthy looking person could have HIV (26.5%) as well as that a person can reduce risk of HIV by having one faithful, uninfected partner (26.2%).

**Table 24: Knowledge of HIV, risk and prevention efforts among FSW respondents (n=630)**

	N	%
Felt at risk of being infected with HIV	457	72.5
<b>Knowledge of HIV</b>		
1. A person can reduce HIV transmission by using condom	532	84.4
2. A person can reduce risk of HIV by having one faithful, uninfected partner	465	73.8
3. A person cannot become infected through mosquito bites	478	75.9
4. A person cannot get HIV by sharing meal with someone who is infected with HIV	525	83.3
5. A healthy-looking person can have HIV	463	73.5
<i>(*number with correct answer)</i>		
Total with adequate knowledge (score 5)	258	41

## ALCOHOL AND SUBSTANCE USE

Table 25 refers to alcohol consumption and use of psychoactive drugs among the FSW respondents. Slightly more than one third of the respondents admitted consuming alcohol prior to sex in the last one month (34%). Some of the respondents also reportedly used psychoactive drugs before sex in the last 12 months with syabu/ice being the most commonly used drug (26.5%). A similar pattern of risk behaviour was also observed among their sexual partners with 23.7% of the respondents reporting their sexual partners to have also used drugs before sex. Only a small percentage of the respondents reported to have injected drugs (6%).

**Table 25: Alcohol and substance use among FSW respondents (n=630)**

	N	%
Ever consumed alcohol before having sex in past 1 month	214	34
Used syabu/ice before sex in the last 12 mo.	167	26.5
Used ecstasy before sex in the last 12 mo.	47	7.5
Used heroin before sex in the last 12 mo.	43	6.8
Used cocaine before sex in the last 12 mo.	1	0.2
Sexual partners ever used drugs before having sex	149	23.7
Have ever injected drugs	38	6.0
Respondents still injecting drugs	17	2.7
Shared used needles and/or syringes in last 12 mo. (n=17)	10	1.6
Have sexual partners who injected drugs	23	3.7

## HIV PREVALENCE AND ITS ATTRIBUTES

The survey found the overall HIV prevalence among the FSW respondents in the country to be at 6.3% with highest prevalence observed in the West region of West Malaysia (Kuala Lumpur: 16.9%) followed by Pahang (8.8%) in the East region and Penang (7.4%) in the North region of West Malaysia (Table 26).

**Table 26: HIV prevalence by states (n=630)**

Region	State	N	%
<b>West Malaysia:</b>			
North	Penang (n=81)	6	7.4
	Perak (n=120)	0	0
West	Kuala Lumpur (n=124)	21	16.9
East	Pahang (n=113)	10	8.8
<b>East Malaysia:</b>			
	Sabah (n=122)	3	2.5
	Sarawak (n=70)	0	0
<b>TOTAL</b>		<b>40</b>	<b>6.3</b>

## DISCUSSION

The country has seen four rounds of regular IBBS survey among the FSW since the first round in 2009 followed by the second round in 2012 and the latest two rounds in 2014 and 2017. The geographical coverage of IBBS 2009 was limited as it was conducted in the Klang Valley only (Selangor and Kuala Lumpur) with a total of 551 respondents. In 2012, the IBBS expanded geographically, surveying 864 respondents in eight sites/states including Selangor, Penang, Perak, Melaka, Kelantan, Pahang, Sabah and Sarawak. The subsequent round or IBBS 2014 surveyed similar number of respondents at 849 FSWs although few states namely Melaka, Selangor and Kelantan were dropped and replaced with Kuala Lumpur due to some logistical issues.

The current survey in 2017 maintained the six states surveyed in IBBS 2014, namely Penang, Perak, Kuala Lumpur, Pahang, Sabah and Sarawak. In terms of respondents, IBBS 2017 recruited 630 FSW respondents through 12 seeds with 15 as the longest recruitment chain compared to the IBBS 2014, which recruited 849 respondents through 17 seeds with 11 as the longest recruitment chain. For purpose of discussion, comparisons are made between 2017, 2014 and 2012 surveys as they are more comparable in terms of coverage of states/sites.

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## SOCIO-DEMOGRAPHIC CHARACTERISTICS

Table 27 gives a summary of the socio-demographic characteristics of the FSW respondents for the 2012, 2014 and 2017 surveys.

In general, the FSWs in the country are observed to be getting older as shown by the overall increase in proportion of FSW aged 30 years and above in 2017 (70.5%) compared to 2014 (63.8%). The ethnic structure of FSW has not changed much with the majority being of Malay ethnicity. The table also shows an overall increase among the Malay, Chinese and Indian FSWs with the highest increase among the Malay FSWs (37.6% in 2012, 37.2% in 2014 and 46% in 2017). The table also shows an overall increase in total number of full-time sex workers overtime (55.8% in 2012, 68.6% in 2014 and 67.6% in 2017). Throughout the three rounds of surveys, the FSWs most often solicited their clients in hotels or motels followed by streets. This is expected as this is the limitation of this survey as it is conducted among street-based or venue-based FSWs. Their network is limited among street-based or venue-based and therefore, we are unable to recruit FSW who advertise online to get clients.

In terms of education, the percentage of FSWs who had attained at least primary level school education has fallen from 33.9% in 2012 to 26.8% in 2017 while the percentage of FSWs who had attained secondary school level education increased from 50.3% in 2012 to 54.6% in 2017. Similarly, the percentage of FSWs who had attained tertiary level education has also increased from 0.5% in 2012 to 3.5% in 2017 following a slight drop in 2014.

As for marital status, a significant increase was observed in the percentage of divorced FSWs overtime while the other three groups namely unmarried, married and widowed FSWs were observed to have decreased.

**Table 27: Socio-demographic characteristics of FSW respondents in 2012, 2014 and 2017 IBBS surveys.**

	2012 (%), N=864	2014 (%), N=849	2017 (%), N=630
<b>Age</b>			
≤ 24	21.1	22.6	17.8
25 – 29	14.8	13.7	11.7
30 – 39	24.9	26.3	29.1
40 – 49	23.8	21.0	21.9
≥ 50	15.4	16.5	19.5
<b>Ethnic</b>			
Malay	37.6	37.2	46.0
Chinese	10.2	13.7	11.0
Indian	12.0	14.4	14.3
Sabah	20.1	16.5	18.1
Sarawak	13.0	15.2	7.6
Others	7.1	2.5	3.0
<b>Education</b>			
No formal education	15.3	17.2	15.1
Primary	33.9	30.9	26.8
Secondary	50.3	47.5	54.6
Tertiary	0.5	4.5	3.5
<b>Marital status</b>			
Unmarried	46.9	37.5	29.7
Married	53.1	18.4	20.8
Divorced	0	33.1	40.6
Widowed	-	11.0	8.9
<b>Source of Income</b>			
Full time sex work	55.8	68.6	67.6
Part time sex work	41.3	31.4	32.4
<b>Place of contact clients</b>			
Hotel/motel	26.5	34.0	45.8
Street	14.3	21.1	22.5
Brothel	11.9	16.3	10.8
Through phone/SMS/social network	13.8	7.8	5.6
Bar/discotheque	8.4	6.0	5.2
Karaoke bar	10.4	5.4	3.3
Massage parlor	4.0	2.0	2.8
Home	-	5.4	3.1
Others	5.5	2.1	0.9
<b>Faith</b>			
Muslim	60.0	50.6	66.8
Christianity	17.1	16.8	12.7
Hinduism	10.2	12.4	11.1
Buddhism	9.7	12.2	8.1
Others	2.9	8.0	1.3



## SEXUAL PRACTICES AND SUBSTANCE ABUSE

Comparing FSW respondents between 2012, 2014 and 2017 on sexual practices and substance abuse (Table 28 and Table 29), it can be summarised that:

- a) Condom use with clients in the past 12 months as well as with recent client have remained reasonably high in all three rounds. Also, condom use with recent boyfriend or husband has substantively improved in 2017 to 47.9% after a drastic drop from 53.9% in 2012 to 29.6% in 2014.
- b) There is a notable drop in the reasons for condom use as means to protect oneself from sexual disease (2012 – 96.8%, 2014 - 67.6% and 2017 - 75.6%) and to prevent pregnancy (2012 – 83.1%, 2014 - 37.7% and 2017 – 32.1%) possibly signalling the reducing importance given to condom as a protection tool from contracting diseases apart from preventing unwanted pregnancies.
- c) There was an alarming drop in client’s preference for protected sex whereby the percentage has declined from 54.7% in 2012 to 13.7% and 8.7% in 2014 and 2017 respectively. Similar pattern is mirrored by percentage of protected sex requested by the managers or pimps.
- d) Although alcohol consumption before sex has declined in 2017, a sizeable proportion of the FSW respondents shared that they consumed alcohol before having sex in the past one month (34%). Similarly, a substantive percentage of FSWs continued to use syabu/ice before sex in the current survey just as recorded in the previous two rounds.
- e) Drug use prior to sex among sexual partners decreased considerably from 34.2% in 2014 to 23.7% in 2017. Similarly, percentage of FSWs injecting drugs also declined drastically to 2.7% in 2017 from 9.8% in 2014.

**Table 28: Condom use pattern among FSW respondents in 2012, 2014 and 2017 IBBS surveys.**

	<b>2012 (%) N=864</b>	<b>2014 (%) N=849</b>	<b>2017 (%) N=630</b>
Condom used in the past 12 months with clients	63.7	60.6	63.9
Condom used with recent clients	83.9	84.5	83.5
Condom used with recent boyfriends/husband	53.9	29.6	47.9
Condom used with husband at last sex	21.7	16.0	-
Used condom as protection from sexual diseases	96.8	67.6	75.6
Used condom as pregnancy prevention	83.1	37.7	32.1
Used condom as proposed by client	54.7	13.7	8.7
Used condom as requested by manager/pimp	21.2	1.3	2.7

**Table 29: Comparison of substance abuse among FSW in 2012, 2014 and 2017 IBBS surveys.**

	2012 (%), N=864	2014 (%), N=849	2017 (%), N=630
Consumed alcohol before having sex in the past 1 mo.	39.9	46.2	34
Used syabu/ice before sex in the past 12 mo.	18.7	26.1	26.5
Used heroin before sex in the past 12 mo.	7.3	6.0	6.8
Used ecstasy before sex in the past 12 mo.	6.9	8.7	7.5
Use cocaine before sex in the past 12 mo.	1.3	2.0	0.2
Sexual partners ever used drugs before having sex	25.5	34.2	23.7
Have ever injected drugs	4.1	7.2	6.0
Currently injecting drugs	-	9.8	2.7
Ever share used needles and/or syringes in last 12 mo.	-	9.2	1.6
Have sexual partners who used injected drugs	7.7	15.8	3.7

#### PATTERN OF HIV SERVICES UTILISATION

Comparisons between IBBS 2012, 2014 and 2017 on pattern of service utilisation is summarised in Table 30.

- a) In general, participation in health talk increased overtime from 27.8% in 2012 to 30.7% and 62.5% in 2014 and 2017 respectively. Participation in both face-to-face and group discussions bounced back in 2017 after a striking fall in 2014 when compared to 2012.
- b) Contact with NGO outreach/ healthcare worker in the last three months almost halved from 49.1% in 2014 to 26% in 2017. This seem to have a spill over effect on the access to free condoms which is also observed to have dropped in 2017 compared to 2014 as free condoms are usually disseminated by the NGO outreach workers. Contact with NGO outreach/ healthcare worker is increasingly done through social media applications where the FSW are more active in such mediums that face to face approach has become less popular among them. Condoms are probably requested only when needed as condoms are accessible at an affordable price.
- c) More FSW reportedly had undergone HIV test and were informed of their result in 2017 (81.4%) than they had in 2014 (79.4%) and 2012 (32.8%), indicating an impressive progress as the country works towards achieving the Ending AIDS goal by 2030. The most recent innovative approach of training outreach worker to provide community-based HIV screening contributed greatly to this increase in HIV test among the FSW.
- d) The percentage of FSW respondents who had STI check-up in 2017 (18.5%) had slightly increased although it has reduced by almost by half when compared to 2012 (31.7%). About 3.2% were diagnosed with STI in 2017. This figure could be higher if more FSW had undergone STI check-up.

- e) A sizeable proportion (2012 – 34.7%, 2014 - 36% and 2017 – 30.4%) of FSW continued to disclose their status to their permanent partner, friend or family indicating increasing level of HIV awareness in preventing onward transmission of HIV.

**Table 30: Pattern of HIV service utilisation among FSW respondents in 2012, 2014 and 2017 IBBS surveys.**

	<b>2012 (%), N=864</b>	<b>2014 (%), N=849</b>	<b>2017 (%), N=630</b>
Have ever attended health talk past 12 mo.	27.8	30.7	62.5
Participated in individual discussion the past 12 mo.	54.2	26.2	35.4
Participated in group discussion the past 12 mo.	56.2	19.9	34.6
Contacted by NGO outreach/healthcare worker last 3 mo.	-	49.1	26
Have accessed to free condoms	57.8	57.4	40.6
Had STI checkup	31.7	12.8	18.5
Had anal examination as part of checkup	31.6	20.7	75.9
Had been diagnosed with STI in past 12 months	-	6.5	3.2
Had HIV tested and informed of result in the last 12 mo.	32.8	79.4	81.4
Shared result with permanent partner, friend or family	34.7	36.0	30.4
Permanent partner had HIV tested	19.2	36.6	16.5

#### AWARENESS ON HIV RISK AND PREVENTION

A comparison of data from 2012, 2014 and 2017 on awareness on HIV risk and prevention (Table 31) can be summarised as below.

- a) Although the scores remained under 50%, knowledge of HIV, risk and prevention efforts has improved over the six years as reflected by the increase in proportion who have adequate score (score of 5).
- b) There were still misperceptions about HIV transmission especially that having one faithful, uninfected partner can reduce risk of HIV, healthy looking person can transmit HIV and that one cannot acquire HIV through mosquito bites.

**Table 31: Comparison of HIV knowledge between 2012, 2014 and 2017 IBBS survey.**

	2012 (%), N=864	2014 (%), N=849	2017 (%), N=630
A person can reduce HIV transmission by using a condom	85.0	86.3	84.4
A person can reduce risk of HIV by having one faithful, uninfected partner	66.0	78.1	73.8
A person cannot become infected with HIV through mosquito bites	73.3	74.5	75.9
A person cannot become infected with HIV by sharing meal with someone infected with HIV	75.2	82.3	83.3
A healthy-looking person can have HIV	73.0	69.6	73.5
Total with adequate knowledge (score 5)	35.4	39.2	41

*\*Calculation based on correct answer.*

## HIV PREVALENCE

Overall HIV prevalence among FSW has declined from 7.3% in 2014 to 6.3% in 2017 although it is still of a higher prevalence when compared to IBBS 2012 which recorded just 4.2% (Table 32). Highest prevalence rate is consistently observed in Kuala Lumpur 16.9% and 15% in 2017 and 2014 respectively. Some states were observed to experience a declining trend including Perak, Pahang and Sarawak. Sabah recorded a lower prevalence rate in 2017 when compared to 2014 but the figure is slightly higher compared to the percentage recorded in 2012. Penang recorded an upward trend in its HIV prevalence between 2012 and 2017.

**Table 32: HIV prevalence among FSW in 2009, 2012 and 2014 IBBS survey.**

HIV Prevalence by State	2012 (%), N=864	2014 (%), N=849	2017 (%), N=630
<b>North Peninsular:</b>			
Penang	3.6	5.3	7.4
Perak	1.1	0.6	0
<b>West Peninsular:</b>			
Selangor	10.0	-	-
Kuala Lumpur	-	15.0	16.9
<b>South Peninsular:</b>			
Malacca	5.7	-	-
<b>East Peninsular:</b>			
Pahang	18.6	14.5	8.8
Kelantan	9.8	-	-
<b>Borneo:</b>			
Sabah	1.1	6.7	2.5
Sarawak	0.7	6.7	0
<b>Total</b>	<b>4.2</b>	<b>7.3</b>	<b>6.3</b>

## CONCLUSION AND RECOMMENDATION

From the comparison of findings in IBBS 2012, 2014 and 2017, the following conclusions could be derived and summarised:

- (a) The HIV prevalence among FSW has declined from 7.3% in 2014 to 6.3% in 2017. While Kuala Lumpur records the highest prevalence of 16.9%, Pahang at 8.8% and Penang at 7.4%, fortunately none of the states show sharp increase in prevalence. Therefore, focusing on accelerating and scaling up prevention efforts in these states with high HIV prevalence would be strategic in further reducing the HIV prevalence among the FSW.
- (b) There is a notable treatment gap among FSW PLHIV. Only 3.2% of the respondents shared that they are currently receiving ART. Closing this gap by reaching 90% by 2020 and 95% by 2030 remains a priority to end AIDS in the country.
- (c) The socio-demographic characteristics of FSW respondents have not changed much between 2014 and 2017, majority continue to be of Malay ethnicity, Muslim and had attained at least secondary school level education. However, it is important to note that there was an increase in percentage of full time, those with tertiary level education as well as divorced FSW indicating that more FSW from these backgrounds are engaging in risk-taking behaviour to sustain their living.
- (d) Fortunately, condom use with clients in the past 12 months as well as with recent client have remained reasonably high in all three rounds despite the alarming drop in clients' preference for protected sex. Condom use with recent boyfriend or husband was also observed to have increased.
- (e) A sizeable as well as increasing percentage of FSWs continued to use syabu/ice before sex in all three rounds of the IBBS (18.7% in 2012, 26.1% in 2014 and 26.5% in 2017).
- (f) Proportion of FSW who had STI check-up in 2017 remained low (18.5%) after the sharp decline in IBBS 2014 (31.7% in 2012 and 12.8% in 2014). The percentage of FSW diagnosed with STI could be higher if more FSW had undergone testing.
- (g) Although knowledge of HIV, risk and prevention efforts had improved overtime, misconceptions about HIV transmission particularly around having one faithful, uninfected partner can reduce risk of HIV, healthy looking person can transmit HIV and that one cannot acquire HIV through mosquito bites still persist.

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## RECOMMENDATIONS

Overall, it is encouraging to see the prevalence rate to have reduced in 2017 after the climb in 2014, indicating the effectiveness of the current preventive measures taken in the country. This also establishes the need for the HIV prevention work including the community-based testing to be continued to further reduce the HIV transmission rate among the FSW especially

in states with high HIV prevalence. The prevention package should include Harm Reduction Program to address multiple risk factors particularly ice/syabu use among this KP. The treatment cascade for FSW also needs to be strengthened by ensuring all FSW who are tested positive for HIV are engaged in treatment in a timely manner. This will help address the treatment gap in this key population. To end AIDS, every FSW tested positive for HIV must be linked to treatment for viral suppression preventing onward transmission while every FSW who is tested negative for HIV must be motivated and well equipped with HIV prevention knowledge and tools to keep her status negative. In addition, although it is known that sex work industry has evolved with the emergence of internet marketing (i.e., online or internet-based sex workers), this study limited only to street-based/venue-based FSW. Hence, there is inadequate information on their work experiences and behaviour and HIV prevalence; and how it may differ from street-based or venue-based sex workers. In addition, the extent to which online technology has changed the sexual networks of FSWs and clients, social networks between FSWs, and the visibility of FSWs to prevention programmes remains unknown. More study should be conducted among online sex workers as this information may help us to explore the best way to approach them and for prevention program planning.

## TRANSGENDER (TG)

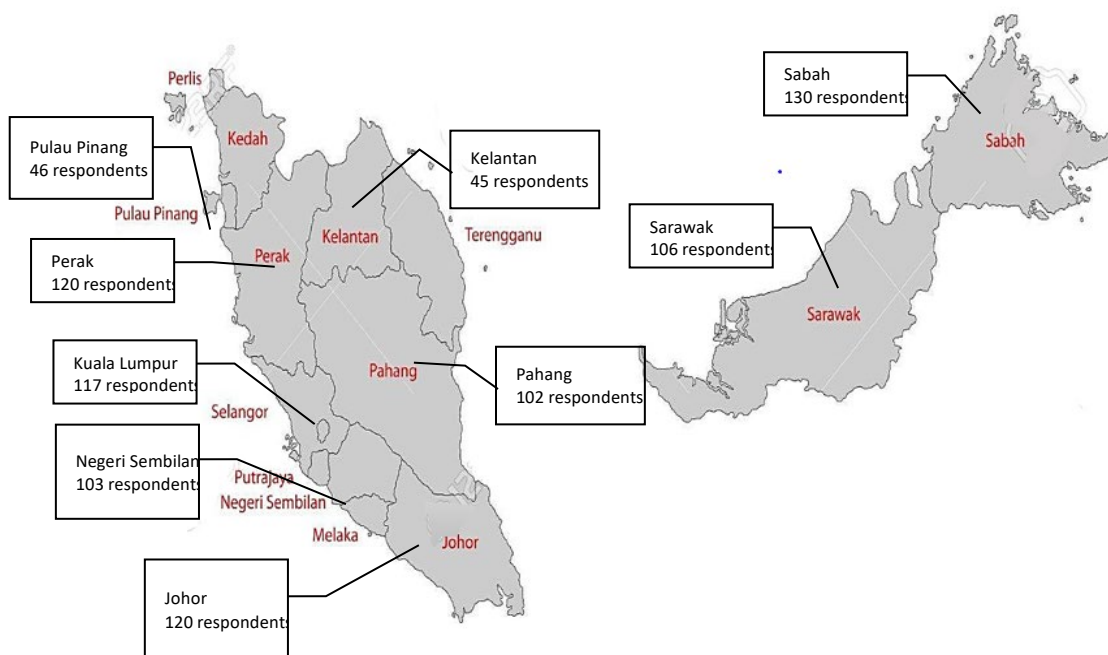
The IBBS 2017 recruited 889 respondents (including seeds) from nine study sites/states (Table 33). Recruitment was initiated with 15 seeds with Negeri Sembilan recording the longest recruitment wave followed by Sarawak and Selangor as seen in the smaller number of seeds but longer waves penetrating well into the TG network.

Geographical distribution of respondents is depicted in Figure 7. To allow review and analysis of trends over time, all seven states covered in IBBS 2014 were also surveyed in this round with two additional states, namely Negeri Sembilan and Pahang.

**Table 33: Distribution of respondents and seeds by Region/State**

Region	State	No. Seed	No. wave	No. Respondents
<b>West Malaysia:</b>				
North	Penang	2	7	46
	Perak	2	6	120
West	Kuala Lumpur	4	11	117
South	Negeri Sembilan	1	13	103

	Johor	1	8	120
East	Kelantan	1	4	45
	Pahang	1	9	102
<b>East Malaysia:</b>				
	Sabah	2	5	130
	Sarawak	1	12	106
	<b>TOTAL</b>	<b>15</b>		<b>889</b>



**Figure 7: Geographical distribution of study sites for TG respondents (n=889)**

## SOCIO-DEMOGRAPHIC CHARACTERISTICS

The socio-demographic characteristics for TG respondents are summarised in Table 34. Majority of the TG respondents in the 2017 survey were in the 20-39 age group (72.7%) with median age of 32, of Malay ethnicity (63%), Muslim (79.4%) and had attained at least secondary school level education (69.5%).

The median age of transgender debut was 13 years while median duration of living in the city was 19 years. Almost all TGs interviewed reported that they had source of income, except for the unemployed 6.1% respondents. When asked about their main source of income in the

past one month, almost one third of the respondents reported job with salary (32.2%) followed by sex work (25.4%) and odd job (independent worker) (21.7%). Slightly more than one third of the respondents shared that they earned RM1,500.00 or more a month (39%) while a majority of 61% earned less than RM1,000.00 a month.

**Table 34: Socio-demographic characteristics of TG respondents (n=889)**

	N	%
<b>Age</b>		
≤ 20	35	3.9
20 – 29	336	37.8
30 – 39	310	34.9
40 – 49	86	9.7
≥ 50	77	8.7
Median age (years)		32 (18 – 70)
<b>Ethnic</b>		
Malay	560	63.0
Chinese	19	2.1
Indian	122	13.7
Sabah	127	14.3
Sarawak	50	5.6
Others	6	0.7
<b>Education</b>		
No schooling	28	3.1
Primary	113	12.7
Secondary	618	69.5
Tertiary	130	14.6
<b>Faith</b>		
Islam	706	79.4
Buddhism	18	2.0
Hinduism	109	12.3
Christianity	53	6.0
Others	3	0.3
<b>Main source of income in past 1 month</b>		
Sex worker	226	25.4
Job with salary	286	32.2
Independent worker (odd jobs)	193	21.7
Salon/beauty parlor/hairdresser	100	11.2
Student with part time job	25	2.8
Unemployed	54	6.1
Others	5	0.6
<b>Income level</b>		



< RM1,500	542	61.0
≥ RM1,500	346	39.0
		N (min-max)
Median of average income/month (RM)	1,000	(0 – 18,000)
Median duration living in the city (years)	19	(1 – 69)
Median age of transgender debut (years)	13	(5 – 46)

## CONDOM AVAILABILITY

Reported use of condom was generally high with 91% respondents sharing that they have ever used a condom during sex (Table 35). For more than half of the respondents, outreach workers were their main source of condoms (59.6%). Condoms were also mostly obtained from retail outlets (40.8%).

**Table 35: Condom availability among TG respondents (n=889)**

	N	%
Have ever used a condom while having sex	808	91.0
Obtained condom from ORW	530	59.6
Obtained condom from retail outlets	363	40.8
Obtained condom from pharmacy	74	8.3
Obtained condom from other sources	60	6.7
Obtained condom from bar/ guest house/ hotel/club	7	0.8
Obtained condom from customers	3	0.3

## SEXUAL HISTORY AND PARTNERS

The median age for sex debut among the respondents was 16 years (Table 36). A majority of the respondents reported to have had sex in exchange of money in the past 12 months (80%). Slightly more than half of the respondents reported to have a regular sex partner (50.6%) of whom almost all were male partners (99.1%).

**Table 36: Sexual history of TG respondents (n=889)**

	N	%
Median age of sex debut	16	(7 – 35) years
Ever had sex in exchange for money in the past 12 months	711	80.0
Had regular sex partner	450	50.6
Had male permanent partner (N =450)	446	99.1
Had female permanent partner (N = 450)	1	0.2
Had transgender permanent partner (N = 450)	3	0.7

## SEXUAL PRACTICES AND CONDOM USE PATTERN

Table 37 reflects the sexual practices and condom use among the TG respondents. More than half of the respondents admitted having consensual sex with a male partner (57.8%) while a higher percentage of 80% admitted having had anal sex with a male partner for money in the past 12 months. In term of condom usage, high condom used were reported with client compared to consensual partner.

**Table 37: Sexual practices and condom use among TG respondents (n=889)**

	N	%
<b>Selling sex</b>		
Ever had anal sex with male partner for money in the past 12 months	711	80.0
Used condom with most recent client (n=711)	592	83.3
Always use condom with client (N = 711)	365	51.3
<b>Consensual sex</b>		
Ever had consensual sex with male last 12 months	514	57.8
Used condom with recent consensual anal sex partner (N=514)	351	68.3
Always use condom with recent consensual sex partner (N=514)	188	36.6

## PATTERN OF HIV SERVICES UTILISATION

Exposure of the respondents to HIV services is summarised in Table 38. Overall, participation in health talk varied by organisers – majority of the respondents reported to have attended health talk organised by NGO/CBO (54.2%) followed by health department (22.8%). Attendance in health talk organised by other government departments and other organisers were significantly lower with percentage of 2.6% and 0.7% respectively.

While HIV transmission and prevention (36.3%) and proper use of condom (27.8%) were the most two commonly discussed issues, slightly more than one third of the respondents reported to never have participated in face to face (39.6%) and group discussions (35.8%). Almost equal number of respondents reported to have participated in face-to-face and group discussion in the past three months with percentages of 27.8% and 27% respectively. When asked if they had been contacted by NGO outreach worker, healthcare worker or a friend, a substantive proportion of the respondents shared they were contacted by NGO outreach worker, healthcare worker or a friend in the last three months (41.8%).

Regarding HIV prevention package, a majority of 44% responded that they received condoms and information related to HIV/STI while a slightly lower percentage of 34.5% responded that they did not receive condoms or information on HIV/STI.

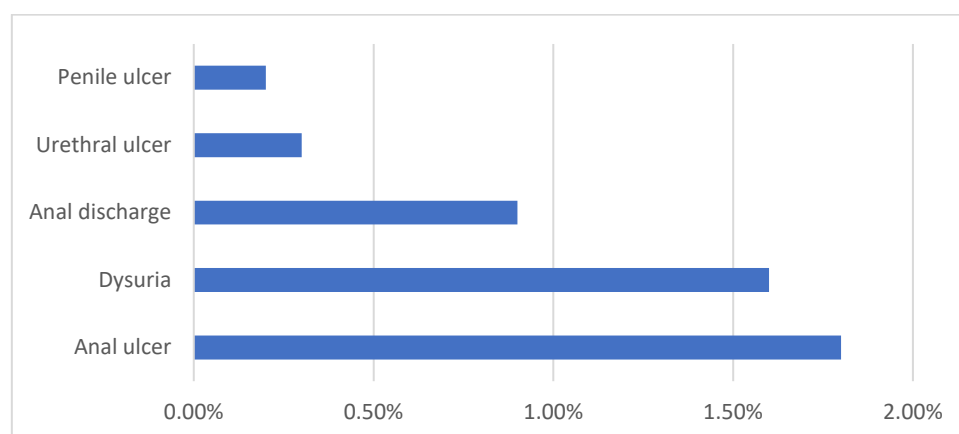
As for STI, a very small percentage of respondents reported to have been diagnosed with STI in the past 12 months (4.6%). Slightly more than one tenth of the respondents have visited STI clinic in the past three months (11.3%). Of those who had visited the clinic, a majority of them had anal examination as part of check-up (66%). Though low, three most common symptoms of STI reported by the respondents in the last 12 months include anal ulcer (1.8%), dysuria (1.6%) and anal discharge (0.9%). (Figure 8). Of those respondents diagnosed with STI, 51.4% said they turned to government facilities for treatment while 25.7% sought treatment from private facilities (Figure 9).

In terms of HIV testing, more than two thirds of the respondents had their blood tested for HIV sometime in their life (78%) but only 45.7% had recent HIV test in the last 12 months. A similar percentage of 43% of the respondents had HIV test and know their result in the last 12 months. A majority of those tested positive for HIV are still on ARV (91.7%) and a substantive proportion of the respondents informed that they had disclosed their result to a permanent partner, friend or family (30.7%). When asked if their permanent partner had taken HIV test, only a small proportion of 18.2% of the respondents shared that their partners have taken HIV test.

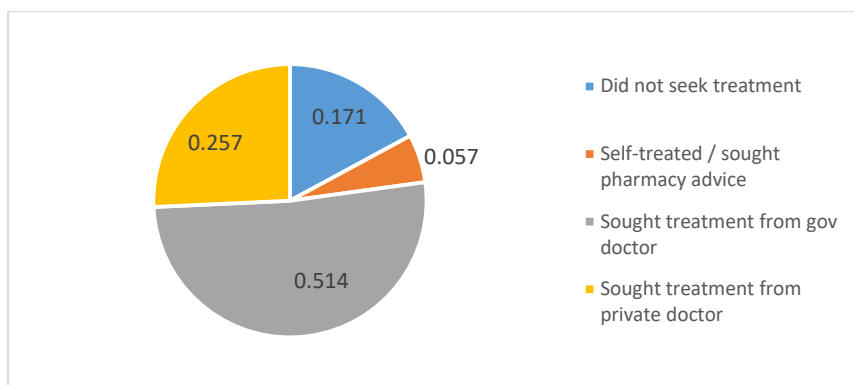
**Table 38: Services exposure and utilisation among TG respondents (n=889)**

	N	%
<b>Health talk</b>		
Health talk organized by NGO / CBO	482	54.2
Health talk organized by Health department	203	22.8
Health talk organized by other government department	23	2.6
Health talk organized by others	6	0.7
<b>Face-to-face discussion</b>		
Never participated	352	39.6
In the past 3 months	247	27.8
In the past 4 months – 1 year	117	13.2
More than 1 year ago	173	19.5
<b>Group discussion</b>		
Never participated	318	35.8
In the past 3 months	240	27.0
In the past 4 months – 1 year	140	15.7
More than 1 year ago	191	21.5
Contacted by NGO outreach worker/healthcare worker/friend last 3 mo.	371	41.8
<b>Issues discussed in the past 3 months</b>		
HIV transmission and prevention	323	36.3
Proper use of condom	247	27.8
Sexual activity / pleasure	155	17.4

Spiritual awareness from religious perspective	60	6.7
Hormone therapy	58	6.5
Legal aid	25	2.8
Others	14	1.6
<b>HIV prevention package</b>		
Received condoms only	170	19.1
Received condoms and information related to HIV/STI	391	44.0
Received information related to HIV/STI only	21	2.4
Did not received condoms or information related to HIV/STI	306	34.5
<b>STI services</b>		
Had visited STI clinic in the past 3 months	100	11.3
Had anal examination as part of checkup (N = 100)	66	66.0
Have been diagnosed with STI in past 12 months	41	4.6
<b>VCT services</b>		
Ever had blood tested for HIV	693	78.0
Had HIV tested in the last 12 months	406	45.7
Had HIV tested and informed of result in the last 12 months	382	43.0
Had HIV tested over a year ago	286	32.2
<b>Disclosure of HIV status</b>		
Disclosed with permanent partner, friend or family	273	30.7
Permanent partner had HIV tested	162	18.2
<b>ARV treatment</b>		
Ever receive ARV	36	4.1
Still on ARV (N = 36)	33	91.7



**Figure 8: Distribution of STI symptoms in the last 12 months as reported by respondents (n=889)**



**Figure 9: Action taken by respondents the last time they had SI (n=35)**

## AWARENESS ON HIV, RISK AND PREVENTION EFFORTS

The current survey also enquired on awareness on HIV, risk and prevention efforts among the respondents as summarised in Table 39. The survey result indicates that almost three quarter of the respondents (73%) felt at risk of being infected with HIV.

In terms of knowledge, while a majority of the respondents correctly rejected the common misconception that one can get HIV by sharing food with someone who is infected with HIV (85%), around one out of four respondents still wrongly believed that a person cannot reduce risk of HIV by having one faithful, uninfected partner. More than 80% of the respondents correctly said that HIV can be prevented by always using a condom during sex (83.9%), a healthy-looking person can have HIV (82.3%) and that HIV cannot be transmitted through mosquito bites (80.3%).

Despite these findings, slightly lower than half of the respondents (47.1%) demonstrated to have overall comprehensive knowledge of HIV.

**Table 39: Knowledge of HIV, risk and prevention efforts among TG respondents (n=889)**

	N	%
Feel at risk of being infected with HIV	649	73.0
<b>Knowledge of HIV*</b>		
1. A healthy-looking person can have HIV	732	82.3
2. A person can reduce HIV transmission by using condom every time having sex	743	83.9
3. A person can reduce risk of HIV by having one faithful, uninfected partner	625	70.5
4. A person cannot get HIV from mosquito bites	714	80.3
5. A person cannot get HIV by sharing food with someone who is infected with HIV	756	85.0
<i>(*number with correct answer)</i>		
Having adequate knowledge (score 5)	419	47.1

## ALCOHOL AND SUBSTANCE USE

Alcohol and psychoactive drug use among the respondents are summarised in Table 40. Alcohol consumption before sex in the past month is reported by over a quarter of the respondents (28.5%). Psychoactive drug use prior to sex is also recorded among the respondents with syabu/ice being the most commonly used drug (19.2%). This is also reflected in their partners whereby 22.5% of the respondents shared that their partners have also used drug before sex. Only a small percentage of the respondents reported to have injected drugs 3.8%, out of which 1.4% reported to be still injecting.

**Table 40: Alcohol and psychoactive drug use among TG respondents (n=889)**

	N	%
Consumed alcohol before having sex in the past month	253	28.5
Have used syabu/ice before sex past 12 months	171	19.2
Have used heroin before sex past 12 months	4	0.4
Have used ecstasy before sex past 12 months	32	3.6
Have use cocaine before sex past 12 months	4	0.4
Sexual partners ever used drugs before having sex	200	22.5
Have ever injected drugs	34	3.8
Respondent still injecting drugs	12	1.4
Ever share used needles and/or syringes in last 12 months	8	0.9
Have sexual partners who used injected drugs	36	4.1

## HIV PREVALENCE

The overall HIV prevalence observed among the TG respondents is 10.7% (Table 41). However, there were variations across states with Kuala Lumpur in the West region recording the highest prevalence at 23.9% closely followed by Negeri Sembilan at 23.3%. Sabah recorded the lowest HIV prevalence at 0.8%.

**Table 41: HIV prevalence by states (n=889)**

Region	State	N	(%)
West Malaysia			
	North region	Penang (n=46)	2 4.3
		Perak (n=120)	6 5.0

West region	Kuala Lumpur (n=117)	28	23.9
South region	Johor (n=120)	11	9.2
	Negeri Sembilan (n=103)	24	23.3
East region	Kelantan (n=45)	3	6.7
	Pahang (n=102)	13	12.7
<b>East Malaysia</b>			
	Sabah (n=130)	1	0.8
	Sarawak (n=106)	7	6.6
<b>TOTAL</b>		<b>95</b>	<b>10.7</b>

## DISCUSSION

The IBBS survey has been fundamental in informing the planning, implementation and evaluation of the national responses by generating timely and strategic epidemiological evidence on the latest trend in HIV among the TG population in the country.

The first round of IBBS in 2009 surveyed 540 TG respondents but its coverage was limited to Klang Valley. In 2012, the IBBS expanded to seven different states and surveyed 870 TG respondents with a total of 37 seeds in Pulau Pinang, Perak, Selangor, Melaka, Kelantan, Sabah and Sarawak. In 2014, the total number of states were maintained but Malacca and Selangor were replaced with Johor and Kuala Lumpur for logistical reasons. Also, the IBBS 2014 saw slightly more respondents at 1,097 although the total number of seeds in both surveys did not differ much (37 seeds in 2012 and 38 seeds in 2014). The slightly longer wavelength in the 2014 survey enabled the higher reach.

The current survey in 2017 covered the same seven states with an addition of two new states, namely Negeri Sembilan and Pahang. The survey recruited 889 respondents with just 15 seeds.

## SOCIO-DEMOGRAPHIC CHARACTERISTIC

Table 42 gives a summary of the socio-demographic characteristics of the TG respondents for the 2012, 2014 and 2017 surveys. Overall, there was an obvious shift in the age structure with increasing proportion seen mainly among TG aged between 30 and 39 and a decreasing proportion among younger TG aged between 24 and younger.

The three rounds of surveys did not see much difference in the ethnic structure with Malays being the majority. However, there is an increase in the percentage of TGs who are of Indian ethnicity. In terms of education, a steady increase is observed in proportion of respondents with tertiary education. There was a decrease in proportion of respondents with secondary education.

Although the recent survey in 2017 saw a slight decrease in percentage of TG respondents who identified sex work as their source of income, sex work remained as one of the top three source of income among the TG respondents after a significant increase from just 2% in 2012 to 27.4% in 2014. Low level education coupled with economic vulnerability and difficulty in finding employment could be among the reasons why transgender women enter the sex trade (10).

**Table 42: Socio-demographic characteristics of TG respondents in 2012, 2014 and 2017 IBBS surveys.**

	2012 (%) (n=870)	2014 (%) (n=1,097)	2017 (%) (n=889)
<b>Age</b>			
≤ 24	33.6	29.4	17.0
25 – 29	22.4	23.2	24.7
30 – 39	29.0	26.1	34.9
40 – 49	10.6	15.2	9.7
≥ 50	4.5	6.2	8.7
<b>Ethnic</b>			
Malay	52.9	54.1	63.0
Chinese	4.1	5.4	2.1
Indian	8.3	10.5	13.7
Sabah	24.5	23.6	14.3
Sarawak	5.9	5.1	5.6
Others	4.4	1.0	0.7
<b>Education</b>			
No schooling	1.9	4.3	3.1
Primary	12.6	13.3	12.7
Secondary	77.7	72.7	69.5
Tertiary	7.8	9.8	14.6
<b>Source of Income</b>			
Job with salary	35.3	24.8	32.2
Independent worker (odd jobs)	25.7	15.2	21.7
Salon / beauty parlor / hairstylist	15.1	13.3	11.2
Student	2.4	4.6	2.8
Sex worker	2.2	27.4	25.4
Other job	18.1	7.0	0.6
Unemployed	1.2	7.7	6.1
<b>Faith</b>			
Islam	80.1	77.1	79.4
Christianity	8.3	7.9	6.0
Hinduism	7.5	8.9	12.3
Buddhism	3.7	4.8	2.0
Others	0.5	1.2	0.3



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## SEXUAL PRACTICES AND SUBSTANCE ABUSE

The trend of sexual practices and substance abuse pattern can be summarised as below (Table 43 and Table 44):

- a) Age at sexual debut remained at 16 in all three surveys.
- b) In all three rounds, majority of the respondents admitted having a male permanent partner and that they have had sex in exchange of money in some point in their life (2012 – 89.2%, 2014 – 86.1% and 2017 – 80%). A very small percentage of the respondents reported to have a female or transgender permanent partner.
- c) Reported condom use with most recent male client (for sold sex) and male consensual partner improved in 2017 when compared to 2014.
- d) Alcohol consumption before sex has decreased in the recent survey (2014 – 38.7% and 2017 – 28.5%).
- e) Drug use prior to sex among sexual partners decreased considerably from 31.4% in 2012 to 29.1% in 2014 and 22.5% in 2017. However, a sizeable percentage of respondents continued to use syabu/ice before sex in the current survey just as observed in the previous two rounds (2012 – 17.9%, 2014: 19.3% and 2017 – 19.2%).

**Table 43: Sexual history and condom use pattern among TG respondents in 2012, 2014 and 2017 IBBS surveys.**

	<b>2012 (%) (n=870)</b>	<b>2014 (%) (n=1,097)</b>	<b>2017 (%) (n=889)</b>
Median age of sex debut (year)	16 (7-45)	16 (5-42)	16 (7-35)
Had been forced to have sex the first time	25.1	39.7	-
Ever had sex in exchange for money	89.2	86.1	80.0
Median age of paid sex debut (years)	20 (9-52)	19 (5-43)	-
Having male permanent partner	98.1	96.4	99.1
Having female permanent partner	1.4	2.2	0.2
Having transgender permanent partner	0.5	1.5	0.7
Permanent partner has other sex partner	40.6	22.9	-
Condom used with recent male client when sold sex	85.2	80.4	83.3
Condom used with recent male client when bought sex	69.5	58.8	-
Condom used with recent male consensual partner	69.6	58.7	68.3

**Table 44: Comparison of substance abuse among TG respondent in 2012, 2014 and 2017 IBBS surveys.**

	<b>2012 (%) (n=870)</b>	<b>2014 (%) (n=1,097)</b>	<b>2017 (%) (n=889)</b>
Consumed alcohol before having sex in the past 1 mo.	37.9	38.7	28.5
Used syabu/ice before sex in the past 12 mo.	17.9	19.3	19.2
Used heroin before sex in the past 12 mo.	2.5	1.5	0.4
Used ecstasy before sex in the past 12 mo.	7.6	5.8	3.6
Used cocaine before sex in the past 12 mo.	1.4	4.3	0.4
Sexual partners ever used drugs before having sex	31.4	29.1	22.5
Have ever injected drugs	2.5	2.8	3.8
Currently injecting drugs	-	1.2	1.4
Ever share used needles and/or syringes in last 12 mo.	-	0.5	0.9
Have sexual partners who used injected drugs	7.2	6.9	4.1

#### PATTERN OF HIV SERVICES UTILISATION

The Table 45 below summarises the pattern of HIV services utilisation among the TG respondents in the recent survey in comparison with the previous two rounds in 2014 and 2012.

- a) Participation of TG in face-to-face and group discussion is observed to have gradually increased in the past five to six years. However, still less than half of the respondents reported to have ever participated in either face-to-face or group discussion in all three rounds. There is also an overall slight decrease in contact with NGO outreach/ healthcare worker/ friend in 2017 (41.8%) compared to 2014 (47.2%). Similarly, percentage of respondents who accessed free condoms from NGO/drop-in-centre continued to drop from 74.4% in 2012 to 66.3% in 2014 and 59.6% in 2017. These findings could be inter-related as more and more key populations prefer to be reached out to through social media applications than in person. In fact, evidence from around the globe show that computer and internet-based interventions including mobile applications, chat rooms, text messaging and particularly social media platforms are more compelling HIV intervention channel (11). Given this scenario, communications with the TG population is probably done more using such platforms where condoms are requested from outreach workers only when needed also because condoms are easily accessible in most retail stores at an affordable price.
- b) Increasing number of TG respondents are observed to have undergone HIV testing in the last five to six years. In 2012 only 57.8% reported to have undergone HIV testing but this percentage increased to 78% in 2017 reflecting the country's progress towards achieving the first 90% of the Fast Track targets. The recently introduced Community-based HIV screening accredited and supported by the Ministry of Health

contributed greatly to this increased coverage. However, percentage of TG respondents who have had HIV test and informed of their result has remarkably decreased in 2017 (43%) when compared to 2014 (71.7%). Key populations need to be informed of their HIV test result to ensure timely treatment initiation for those who are tested positive for HIV.

- c) In contrary to the increasing levels of HIV testing, an overall decreasing trend is observed in number of respondents who attended STI check-ups signalling possibility of low level of STI awareness among the TG respondents. However, the number of respondents who had anal examination as part of their check-up had remarkably increased from 25.2% in 2014 to 66% in 2017. There could be an increase of awareness from the side of the health care providers resulting in this increase.

**Table 45: Pattern of HIV service utilisation among TG respondents in 2012, 2014 and 2017 IBBS surveys.**

	2012 (%) (n=870)	2014 (%) (n=1,097)	2017 (%) (n=889)
Have ever attended health talk past 12 mo.	49.5	43.7	-
Have ever participated in face-to-face discussion past 12 mo.	29.6	36.8	41.0
Have ever participated in group discussion past 12 mo.	32.3	34.1	42.7
Have been contacted by NGO outreach/healthcare worker/friend last 3 mo.	45.3	47.2	41.8
Have accessed free condoms from NGO/drop-in center	74.4	66.3	59.6
Had attended STI checkup	43.8	8.5	11.3
Had anal examination as part of checkup	34.5	25.2	66.0
Had been diagnosed with STI in past 12 months	-	3.7	4.6
Ever had blood tested for HIV	57.8	66.8	78.0
Had HIV tested and informed of result in the last 12 months	67.0	71.7	43.0
Shared result with permanent partner, friend or family	37.9	34.1	30.7
Permanent partner had HIV tested	17.8	39.2	18.2
<b>Reason for HIV testing:</b>			
To obtain certificate	3.0	1.8	-
To marry / engage in monogamous relationship	1.3	1.4	-
Feeling at risk	74.3	74.4	-
Feeling sick	4.3	5.7	-
Requested / suggested by someone	9.1	12.3	-
Other reasons	8.0	4.4	-

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## AWARENESS ON HIV RISK AND PREVENTION

There is an overall improvement in knowledge on HIV prevention and risk perception among the TG respondents in the recent survey when compared to the previous two rounds in 2012 and 2014 (Table 46). This is reflected by the increase in proportion who have adequate score of five in 2017 (38.9% in 2014 and 47.1% in 2017). However, these scores remain low and there was still misperception that a person cannot reduce risk of HIV by having one faithful, uninfected partner.

**Table 46: Comparison of HIV knowledge between IBBS 2012 and 2014.**

Knowledge on HIV	2012 (%) (n=870)	2014 (%) (n=1,097)	2017 (%) (n=889)
Adequate knowledge (score 5 of 5)	40.6	38.9	47.1
A person can reduce HIV transmission by using a condom	91.6	87.1	83.9
A person can reduce risk of HIV by having one faithful, uninfected partner	69.3	72.6	70.5
A person cannot become infected through mosquito bites	75.8	77.0	80.3
A person cannot get HIV by sharing meal with someone infected with HIV	77.1	83.3	85.0
A healthy-looking person can have HIV	86.0	77.8	82.3

*Calculation based on correct answer.*

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## HIV PREVALENCE

Overall the national HIV prevalence among TG continued to increase from 4.8% in 2012 to 6.3% in 2014 and 10.7% in 2017 (Table 47). Kuala Lumpur in the West region consistently recorded the highest HIV prevalence followed by Negeri Sembilan and Johor in the South region. HIV prevalence in Perak is observed to have increased drastically from just 0.7 in 2014 to 5% in 2017 while the prevalence in Penang has reduced by half in 2017 when compared to the percentage recorded in 2014. HIV prevalence in Sarawak has increased from 2.6% in 2014 to 6.6% in 2017. The latest pattern of risk behaviour including substantive psychoactive drug use, selling sex, low condom uses with consensual partner, having had diagnosed for STI coupled with inadequate knowledge of HIV risk and prevention could have heighten the risk of HIV transmission and acquisition among the TG group.

**Table 47: Comparison of HIV prevalence among TG between IBBS 2012 and 2014.**

		2012 (%) (n=870)	2014 (%) (n=1,097)	2017 (%) (n=889)
<b>West Malaysia:</b>				
North Region	Penang	7.5	8.0	4.3
	Perak	1.8	0.7	5.0
West Region	Selangor	4.8	-	-
	Kuala Lumpur	-	19.5	23.9
South Region	Johor	-	10.6	9.2
	Malacca	1.4	-	-
	Negeri Sembilan	-	-	23.3
East region	Kelantan	-	6.0	6.7
	Pahang	-	-	12.7
<b>East Malaysia:</b>				
	Sabah	3.7	0.4	0.8
	Sarawak	5.3	2.6	6.6
National prevalence		4.8	6.3	10.7

## CONCLUSION AND RECOMMENDATION

From the comparison of findings in IBBS 2012, 2014 and 2017, the following conclusions could be derived and summarised:

- (a) There is a notable increase in HIV prevalence among TG. The HIV prevalence has increased by almost two-fold in 2017 (10.7%) when compared to 2014 (6.3%). Highest prevalence is recorded in Kuala Lumpur followed by Negeri Sembilan and Johor while Penang almost halved its HIV prevalence from 8.0% in 2014 to 4.3% in 2017. The increasing prevalence rate could be attributed to substantive use of psychoactive drugs before sex, practice of unprotected sex with consensual partner, selling sex, and low HIV risk and prevention knowledge. Focusing prevention and treatment effort in states with high prevalence rate particularly Kuala Lumpur and Negeri Sembilan could strategically contribute to lowering the prevalence rate. There is also a need to scale-up prevention efforts in states with increasing prevalence to avoid further escalation.
- (b) Sex work remained as one of the top three source of income among the TG respondents after a significant increase from just 2% in 2012 to 27.4% in 2014.
- (c) A sizeable percentage of respondents continued to use syabu/ice before sex in all three rounds of the survey. (2012 – 17.9%, 2014: 19.3% and 2017 – 19.2%).
- (d) Less than half of the TG population have adequate knowledge on HIV prevention and risk although the scoring had slightly improved in the last three years (40.6% in 2012, 38.9% in 2014 and 47.1% in 2017).

- (e) Percentage of TG respondents who have had HIV test and informed of their result has remarkably decreased in 2017 (43%) when compared to 2014 (71.7%) although HIV testing practice has increased overall in the last 3 years.
- (f) There is an overall decreasing trend in attending STI check-ups among the TG population suggesting the need to increase their knowledge and awareness on STI prevention and treatment.

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#### RECOMMENDATIONS:

The rising HIV prevalence observed among the TG community needs to be addressed swiftly and strategically to prevent further escalation as well as to reduce the impact of the rising epidemic. The interventions need to focus on identifying as many TG as possible with HIV and linking them to treatment and care in a timely manner to prevent onward HIV transmission. The community-based HIV screening needs to be continued and expanded to all states particularly those with high prevalence rate. The TG community must not only be approached for testing, but they should also be informed of their test result to ensure those who are confirmed to be HIV positive are engaged in treatment without any delay to prevent onward transmission.

Also, for a holistic and impactful response, substance abuse, inconsistent practice of protected sex, low uptake of STI services and low level of HIV risk and prevention knowledge must be addressed. Pre-exposure prophylaxis could also be considered as an important intervention in reducing the rising prevalence among the TG population. In addition, capacity of organisations serving the needs of TG population needs be strengthened to increase their skills in effectively reaching out to this population with the most accurate information on HIV coupled with negotiation and persuasion skills to link them to appropriate prevention and treatment services.

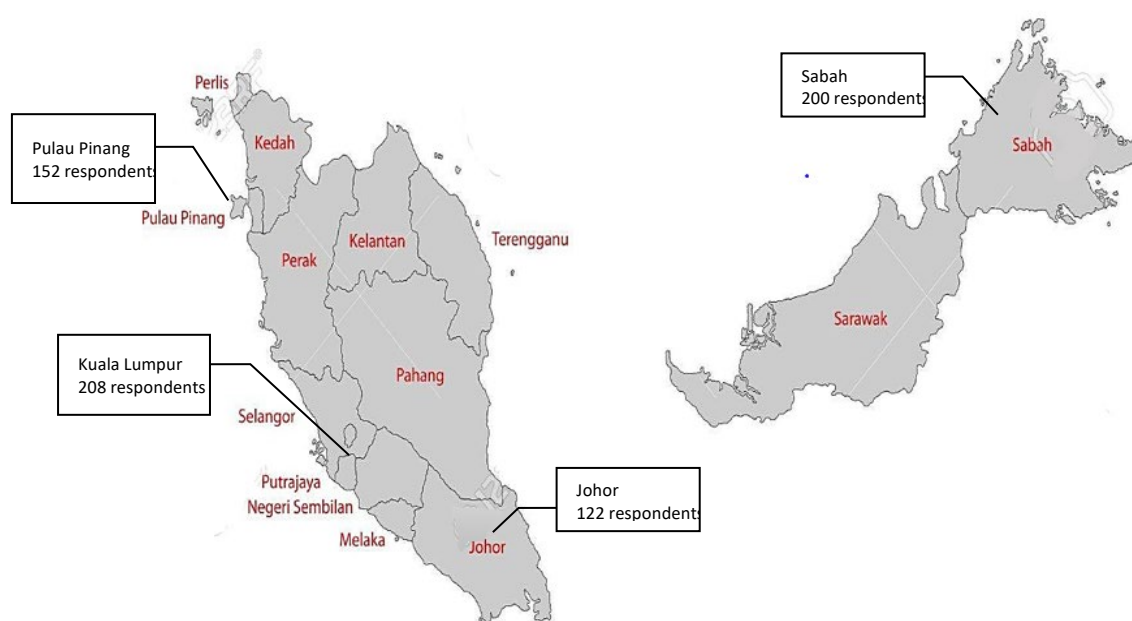
#### MEN WHO HAVE SEX WITH MEN (MSM)

The IBBS 2017 recruited 682 MSM respondents (including seeds) from four states namely Penang, Kuala Lumpur, Johor and Sabah. Recruitment was initiated with 8 seeds (Table 48) with reasonably long recruitment waves observed in almost all states as seen in the smaller number of seeds but longer waves penetrating well into the MSM network which otherwise may not have a chance of being included in the survey.

Geographical distribution of respondents is depicted in Figure 10. These four states were also included in the previous round (IBBS 2014), allowing review and analysis of trends over time.

**Table 48: Distribution of respondents and seeds by Region/State**

Region	State	No. Seed	No. wave	No. Respondents
<b>West Malaysia:</b>				
North	Penang	2	12	152
West	Kuala Lumpur	2	11	208
South	Johor	1	9	122
<b>East Malaysia:</b>				
	Sabah	3	8	200
<b>TOTAL</b>		<b>8</b>		<b>682</b>



**Figure 10: Geographical distribution of study sites for MSM and respondents (n=682)**

#### SOCIO-DEMOGRAPHIC CHARACTERISTICS

The socio-demographic characteristics for MSM respondents are summarised in Table 49. Majority of the MSM respondents were aged less than 24 years (40.8%) with median age of 26 years, of Malay ethnicity (49.7%), Muslim (71.6%), had attained at least secondary school level education (91.7%) and were unmarried (86.5%). Slightly more than two third of the MSM respondents reported to be employed (69.4%) with many of them engaged in non-professional jobs (46.9%).

**Table 49: Socio-demographic characteristics of MSM respondents (n=682)**

	N	%
<b>Age</b>		
≤ 24	278	40.8
25 – 29	146	21.4
30 – 39	160	23.5
40 – 49	65	9.5
≥ 50	33	4.8
Median age (years)		26 (18 – 66)
<b>Ethnic</b>		
Malay	339	49.7
Chinese	95	13.9
Indian	62	9.1
Sabah	148	21.7
Sarawak	28	4.1
Others	10	1.5
<b>Education</b>		
No formal education	17	2.5
Primary	40	5.9
Secondary	360	52.8
Tertiary	265	38.9
<b>Faith</b>		
Muslim	488	71.6
Christianity	71	10.4
Buddhism	74	10.9
Hinduism	46	6.7
Others	2	0.2
<b>Marital status</b>		
Unmarried	590	86.5
Currently married /ever married (divorced / widow)	92	13.5
<b>Employment status</b>		
Employed	473	69.4
Unemployed	110	16.1
Student	99	14.5
<b>Nature of job (n=381)</b>		
Professional	64	9.4
Non-professional	320	46.9
Self-employed	89	13.0
Unemployed	209	30.6



## SEXUAL PRACTICES AND CONDOM USE PATTERN

The sexual practices and condom use pattern among the MSM respondents are explained in Table 50. The median age of anal sex debut was 17 years. Almost three quarter of the respondents shared that they had anal sex in the last one month (71.9%) with median number of different men for sex at 2.

A substantial proportion of the respondents disclosed that they had sex in exchange for money in the last 12 months (34%), while the proportion of MSM respondents who paid money to a man for sex was much lower at 14.7%. Almost half of the respondents had a permanent sexual partner (44.7%) and more than one third (38.6%) had male permanent partner.

When asked if the respondents ever had sex with a female, slightly more than one fifth shared they had sex with a woman in the past 12 months (20.8%) while slightly more than one tenth shared that they had sex with a woman in the past one month (11.3%). The MSM respondents also shared that they had sex with female sex workers in the past 12 months (13.6%), out of which, 76.3% used a condom during the last sex.

Zooming further into safe sex practice, reported use of condom was generally high with 85.2% respondents reported they have ever used a condom during sex. However, a lower percentage of respondents reported they had used condom during last anal sex (65.4%). For slightly more than half of the respondents, condoms were mainly purchased from retail outlets (51%). Outreach workers from NGOs were quoted as the second highest source of condoms (28.4%) followed by pharmacies and clinics at 11.3% and 10.3% respectively.

Consistent condom use was highest with paid partners (53%) and lowest with casual partner (37.6%). Frequency of condom use with clients did not vary much among the MSM respondents with 45% reported to have used a condom consistently while almost the same percentage reported otherwise (44.6%).

**Table 50: Sexual practices and condom use among MSM respondents (n=682)**

	N	%
<b>Sexual practices</b>		
Median age of anal sex debut (year)		17 (10 – 60)
Sexual activity in the last 1 month:		
Had anal sex	489	71.9
Median number of different men for sex		2 (0-15)
Selling/buying sex in the past 12 months		
Ever being paid for sex with a man	232	34.0
Ever paid money to a man for sex	100	14.7
Sex with permanent partner:		
Had a permanent partner	305	44.7
Gender of permanent partner:		
Man	263	38.6
Woman	29	4.3
Transgender	13	1.9
Sex with female:		
Ever have sex with a woman past 12 months	142	20.8
Currently had sex with a woman past 1 month	77	11.3
Had sex with female sex worker past 12 months	93	13.6
Used condom last time had sex with female sex worker past 12 months (n=93)	71	76.3
<b>Condom use pattern</b>		
Have ever used condom while having sex	580	85.2
Had used condom during last anal sex	446	65.4
Places where condoms were obtained		
Retail outlet	348	51.0
ORW from NGO	194	28.4
Pharmacy	77	11.3
Clinics	70	10.3
Bar/ guest house/ hotel/club	7	1.0
Online	4	0.6
Others	35	5.1
Frequency use condom with client (n=240)		
Always (100%)	108	45.0
Not always (<100%)	107	44.6
Never (0%)	25	10.4
Frequency use condom with casual partner (n=426)		
Always (100%)	160	37.6
Not always (<100%)	229	53.8
Never (0%)	37	8.7
Frequency use condom with paid partner (n=100)		
Always (100%)	53	53.0
Not always (<100%)	39	39.0
Never (0%)	8	8.0

## PATTERN OF HIV SERVICE UTILISATION

Exposure of the MSM respondents to HIV services is summarised in Table 51. Overall, quite a substantial proportion of the respondents reported to have attended health event related to HIV (74.2%). The participation in health talk varied by organisers – a majority of the respondents reported to have attended health talk organised by NGOs or CBOs (34%) followed by Health Department (33.1%). Unfortunately, the encouraging level of participation observed in health talk/event was not reflected in the face-to-face and groups discussions. Almost half of the respondents shared that they have never participated in face-to-face discussions (49.7%) while more than half shared that they have never participated in group discussions (56.9%). Similarly, 68.9% respondents shared that they have not been contacted by NGO outreach worker, health care worker or friend in the last three months. For those who have been contacted, the most commonly discussed issue was HIV prevention and control (27.3%) followed by proper use of condom (19.8%) and sexual activity/ desire (12.8%).

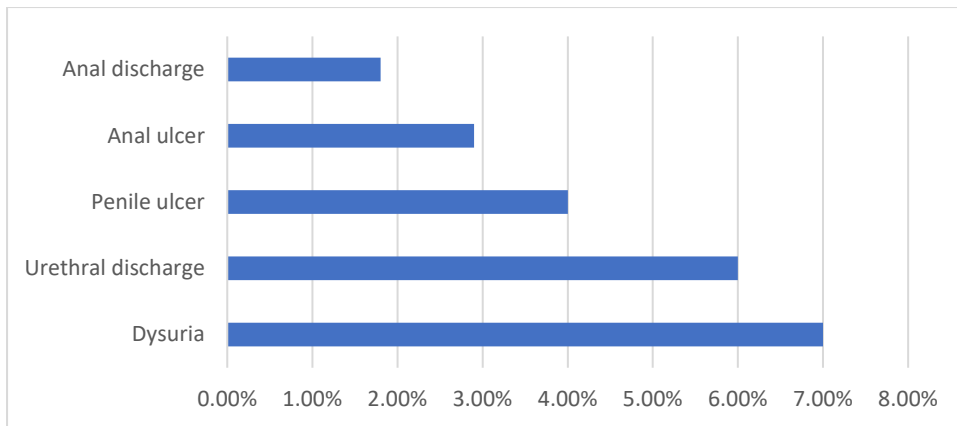
A stark percentage of the respondents also shared that they did not receive condoms, or any information related to HIV/STI (62.6%) while 30.8% respondents shared, they received condoms and information related to HIV/STI.

As for STI, close to 15% of the MSM respondents shared that they have been diagnosed with STI in the past 12 months. Slightly more than one tenth of the respondents attended STI check-up (12.8%) and more than half of the respondents had anal examination as part of their check-up (57.5%). The most common STI symptoms experienced by the MSM respondents include dysuria (7%) followed by urethral discharge (6%) and penile ulcer (4%) (Figure 11). Of those respondents who had reported that they had STI, more than half sought treatment from a government doctor (55.8%) while 26.7% sought treatment from private facilities (Figure 12). About one tenth chose not to treat their condition (10.5%).

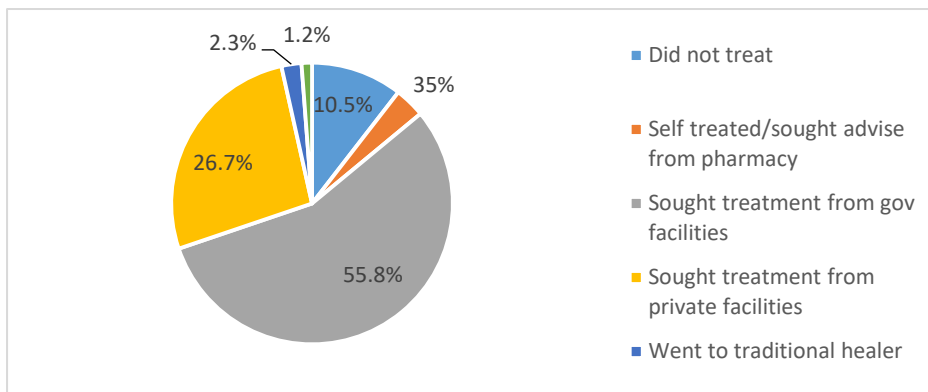
In regard to HIV testing, more than two third of the respondents reported to have ever been tested for HIV (67.7%). A similar percentage of 66.9% of the respondents had tested and were informed of their result in the past 12 months. Almost half of the respondents informed their permanent partner, friend or family member of their HIV test result (49.1%). When asked if their permanent partner had taken HIV test, majority (74.3%) of them responded that their partners have not taken a HIV test.

**Table 51: Services exposure and utilisation among MSM respondents (n=682)**

	N	%
<b>Health talk/event</b>		
Have ever attended health event related to HIV	506	74.2
Have ever attended health talk past 12 months:		
Health talk organized by NGO/CBO	232	34.0
Health talk organized by Health Department	226	33.1
Health talk organized by other government department	19	2.8
Health talk organized by others	13	1.9
<b>Participated in face-to-face discussion</b>		
Never participated	339	49.7
In the past 3 months	180	26.4
In the past 4 months – 1 year	85	12.5
More than 1 year ago	78	11.4
<b>Participated in group discussion</b>		
Never participated	388	56.9
In the past 3 months	129	18.9
In the past 4 months – 1 year	78	11.4
More than 1 year ago	87	12.8
<b>Contacted by NGO outreach worker/ healthcare worker / friend in last 3 months</b>		
Yes	212	31.1
No	470	68.9
<b>Issues discussed in the past 3 months (n=448)</b>		
HIV prevention and control	186	27.3
Sexual activity / desire	87	12.8
Proper use of condom	135	19.8
Spiritual awareness	24	3.5
Others	34	4.9
(*multiple responses)		
<b>HIV Service</b>		
Received condoms and information related to HIV/STI	210	30.8
Received condoms only	36	5.3
Received information related to HIV/STI only	9	1.3
Did not received condom or any information related to HIV/STI	427	62.6
<b>STI service</b>		
Attended STI checkup	87	12.8
Had anal examination as part of checkup	50	57.5
Had been diagnosed with STI in past 12 months	100	14.7
<b>VCT services</b>		
Ever had blood tested for HIV	462	67.7
Had HIV tested over a year ago	153	33.1
Had HIV tested and informed of result in the last 12 months	309	66.9
Shared result with permanent partner, friend or family	227	49.1
Permanent partner had HIV tested	175	25.7



**Figure 11: Distribution of STI symptoms as reported by respondents (n=682)**



**Figure 12: Action taken by respondents the last time they had STI (n=109)**

## AWARENESS ON HIV, RISK AND PREVENTION EFFORTS

Comprehensive knowledge and risk perception around HIV among the MSM respondents are detailed in Table 52. The survey revealed that more than three quarter of the respondents felt at risk of being infected with HIV (79.5%). A sizeable percentage of MSM respondents lacked comprehensive knowledge about HIV transmission and prevention (50.4%). While close to one fifth of the MSM respondents believed that a healthy-looking person cannot have HIV (18.6%), slightly more than a quarter of the respondents also mistakenly believed that the risk of acquiring HIV cannot be reduced by having one faithful uninfected partner (26.4%).

**Table 52: Knowledge of HIV, risk and prevention efforts among MSM respondents (n=531)**

	N	(%)
Feel at risk of being infected with HIV	542	79.5
<b>Knowledge of HIV (number with correct answer)</b>		
1. A healthy-looking person can have HIV	555	81.4
2. A person can reduce HIV transmission by using condom every time having sex	584	85.6
3. A person can reduce risk of HIV by having one faithful, uninfected partner	502	73.6
4. A person cannot get HIV from mosquito bites	566	83.0
5. A person cannot get HIV by sharing food with someone who is infected with HIV	606	88.9
<b>Score Knowledge of HIV</b>		
5 score	338	49.6
4 score	178	26.1
3 score	100	14.7
2 score	47	6.9
1 score	17	2.5
0 score	2	0.3

*(score 5=adequate knowledge, score 0-4=inadequate knowledge)*

## ALCOHOL AND SUBSTANCE USE

Pattern of alcohol and substance use among the MSM respondents are presented in Table 53. In the context of trending chemsex among the MSM, the study revealed that a small percentage of the MSM respondents admitted having participated in a chemsex in the past 12 months (4.1%) with a median frequency of 2. While slightly less than half said they consumed alcohol at chemsex (42.9%), a larger proportion shared that they consumed drugs at chemsex (60.7%).

In general, the study revealed that 32.1% of the MSM respondents consumed alcohol before sex in the past one month. Among those who used psychoactive drugs before sex, syabu/ice was the most commonly used drug (11.4%) followed by heroin (5.1%). Also, about 13.8% respondents reported that their sexual partners had used drugs before sex. Only a small percentage (4.4%) of the respondents have injected drugs (4.4%), under one per cent admitted still injecting drugs and to have ever shared needles/syringes in the past 12 months. The percentage of sexual partners who have injected drugs was also low at only 1.6%.

**Table 53: Alcohol and substance use among MSM respondents (n=682)**

	<b>N</b>	<b>%</b>
Ever went to chemsex in the past 12 months	28	4.1
Median frequency went to chem sex in the last 12 months		2 (0 – 30)
Consumed alcohol at chemsex (n = 28)		
Yes	12	42.9
No	16	57.1
Consumed drugs at chemsex (n = 28)		
Yes	17	60.7
No	11	39.3
Consumed alcohol before having sex in the past 1 month	219	32.1
Have used syabu/ice before sex	78	11.4
Have used ecstasy before sex	25	3.7
Have used heroin before sex	35	5.1
Have use cocaine before sex	2	0.3
Sexual partners ever used drugs before having sex	94	13.8
Have ever injected drugs	30	4.4
Respondents still injecting drugs	6	0.9
Have ever shared needles/syringes past 12 months	6	0.9
Have sexual partners who ever injected drugs	11	1.6

## HIV PREVALENCE

HIV prevalence of MSM respondents in the country is detailed in Table 54. The survey found the overall HIV prevalence among the MSM respondents in the country to be at 21.6% with the highest prevalence observed in Kuala Lumpur (43.3%) in the West region followed by Johor (31.1%) in the South region. Penang in the North region and Sabah in Borneo recorded similar percentage of 5.9% and 5% respectively.

**Table 54: HIV prevalence by states (n=682)**

Region	State	N	Percentage (%)
North	Penang (n=152)	9	5.9
West	Kuala Lumpur (n=208)	90	43.3
South	Johor (n=122)	38	31.1
Borneo	Sabah (n=200)	10	5.0
TOTAL		<b>147</b>	<b>21.6</b>

## DISCUSSION

The IBBS survey is conducted regularly every 2-3 years in Malaysia. Since the first round of IBBS in 2009, followed by the second round in 2012 and the latest two rounds in 2014 and 2017, the country had benefitted from four rounds of regular IBBS surveys among its MSM community. Melaka and Sarawak were part of the sites in IBBS 2012; however, these sites were replaced with Johor in 2014. The sites in IBBS 2014 were Kuala Lumpur, Johor, Penang and Sabah. These sites were maintained for IBBS 2017 as well.

It is important to note that IBBS 2009 used venue-based sampling method while the subsequent rounds of surveys in 2012, 2014 and 2017 used RDS sampling method; hence the discussion will be based on 2012, 2014 and 2017 surveys. The sample size gradually increased between 2012 and 2017; IBBS 2012 recruited 365 MSM respondents while IBBS 2014 and IBBS 2017 recruited 531 and 682 respondents respectively. The number of seeds were smaller in 2017 achieving overall longer recruitment chains compared to the previous two rounds in 2012 and 2014. Recall bias could also be encountered during the interview session, whereby some respondents might have had difficulties in remembering the exact response for questions on their past behaviours and exposures. To avoid duplication of samples, precautions were taken by engaging communities to screen potential respondents who were present at the study sites before participating in the survey.



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## SOCIO-DEMOGRAPHIC CHARACTERISTICS

The socio-demographic characteristics of the MSM respondents for the 2012, 2014 and 2017 surveys are summarised in Table 55. Overall, the proportion of young MSMs aged 24 and below remained the largest in all three rounds despite a slight decrease in its proportion 2017. The remaining age groups, mainly number of MSM respondents between ages 25-29 and 30-39 increased in 2017 after a drop in 2014, except for MSM aged 50 and above which saw a decrease in proportion in 2017.

In terms of ethnicity, percentage of MSM among the Malay and Indian communities saw a steady increment in the last five to six years. Though percentage of Chinese MSM dramatically dropped from 25.8% in 2012 to 8.3% in 2014, the percentage bounced back again to 13.9% three years later in 2017. In contrary, percentage of Sabahan MSM observed a stark decrease from 35.8% in 2014 to 21.7% in 2017. Proportion of Sarawakian MSM and MSM of other ethnicities remained rather unchanged in 2017.

With regards to education, more MSM have attained tertiary level education than primary and secondary education in 2017. Primary and secondary level education observed a downward trend in the same year.

More than 80% of the MSM respondents remained unmarried in all three rounds of surveys although an overall declining trend is observed. While the IBBS did not look into the reasons behind the declining trend, marriage to women could possibly explain this trend where MSMs get into a marriage to conceal their sexual orientation given that homosexuality is not accepted in the society (12). Some of them could also be pressured by their parents to get into marriage with a woman and some may have chosen to marry a woman to honour their family or in effort to become a heterosexual again.

Questions on source on income revealed that majority of the MSM respondents were made up of non-professionals in the last two rounds of the surveys namely IBBS 2014 and IBBS 2017. Also, the number of MSM respondents who mentioned that their income was from non-professional jobs increased notably in 2017 (46.9%) in comparison to the percentage recorded in 2014 (30.2%) while number of professionals among the MSM respondents decreased from 12.6% in 2014 to 9.4% in 2017.

**Table 55: Socio-demographic characteristics of MSM respondents for the 2012, 2014 and 2017 surveys.**

	2012 (%)	2014 (%)	2017 (%)
<b>Age (years)</b>			
≤ 24	38.6	47.8	40.8
25 – 29	29.6	20.0	21.4
30 – 39	23.3	16.6	23.5
40 – 49	5.5	8.9	9.5
≥ 50	3.0	6.8	4.8
Median age (years)	26 (18-67)	25 (17-67)	26 (18-66)
<b>Ethnic</b>			
Malay	43.3	44.8	49.7
Chinese	25.8	8.3	13.9
Indian	2.7	5.1	9.1
Sabah	18.6	35.8	21.7
Sarawak	6.3	4.3	4.1
Others	3.3	1.3	1.5
<b>Education</b>			
No formal education	-	1.5	2.5
Primary	3.3	8.5	5.9
Secondary	53.7	60.1	52.8
Tertiary	43.0	29.9	38.9
<b>Marital status</b>			
Not married	92.8	89.8	86.5
Married to woman	3.6	4.9	-
Married to man	-	0.8	-
Divorced	-	4.0	-
Widow	-	0.6	-
<b>Source of Income</b>			
Professional	-	12.6	9.4
Non-professional	-	30.2	46.9
Self-employed	-	13.9	13.0
Job with salary	64.6	-	-
Independent worker (odd jobs)	12.2	-	-
Salon / beauty parlor / hairdresser	3.6	-	-
Student	14.1	11.3	14.5
Other job	0.3	13.9	-
Unemployed	5.2	18.1	-

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## SEXUAL PRACTICES AND SUBSTANCE ABUSE

Comparing MSM respondents between 2012, 2014 and 2017 on sexual practices and substance abuse (Table 56 and Table 57), it can be summarised that:

- a) The median age of anal sex debut remained unchanged at 17 years old in IBBS 2014 and IBBS 2017.
- b) Percentage of MSM selling and buying sex reduced in 2017 compared to 2014.
- c) More MSM reported to have used condom during last anal sex in 2017 (65.4%) compared to the recorded percentage in 2014 (56.7%). Similarly, percentage of MSM who shared that they had always used condom during anal sex in the last 12 months increased by more than two folds in 2017 (65.4%) compared to 2014 (28.3%).
- d) While a larger percentage of MSM reported to have a male permanent partner in all three rounds of surveys (42.2% in 2012, 43% in 2014 and 38.6% in 2017), small proportion of MSM shared that they have a female (4.9% in 2012, 11.6% in 2014 and 4.3% in 2017) and transgender permanent partner (3.8% in 2012, 2.6% in 2014 and 1.9% in 2017). Also, there is an overall decrease in reported number of permanent partners regardless of their gender in 2017, signalling the possibilities of the MSM respondents having more than one regular sex partner.
- e) Overall, alcohol and substance use before sex is observed to have decreased in 2017 compared to the findings of IBBS 2014 except for the increasing trend observed in heroin use before sex. Use of heroin before sex had increased by more than three folds in 2017 (1.5% in 2014 and 5.1% in 2017) while syabu remained the most commonly used drug before sex in all three rounds of the surveys.
- f) The percentage of sexual partners who used drugs prior to sex has decreased to 13.8% in 2017 after the percentage doubled from 15.9% to 29.1% between 2012 and 2014. However, a sizeable percentage of MSMs continued to use syabu/ice before sex in the current survey just as recorded in the previous two rounds (19.7% in 2012, 19.3% in 2014 and 11.4% in 2017).
- g) Also, percentage of MSM respondents who have ever injected drugs increased in 2017 (4.4%) compared to 2014 (2.8%) signalling an increase in proportion of MSM respondents who engage in injecting drugs. However, in contrary, the number of MSM who had sexual partners who injected drugs decreased considerably from 7.6% in 2014 to 1.6% in 2017.

**Table 56: Comparison of sexual practices among MSM in 2012, 2014 and 2017 IBBS**

	2012 (%)	2014 (%)	2017 (%)
Median age of anal sex debut (year)	-	17 (8-61)	17 (10-60)
Median duration of risk behavior (years)	7 (1-52)	7 (1-50)	6 (0-46)
Ever being paid for sex with a man in the last 12 mo.	19.5 <sup>a</sup>	39.4	34.0
Ever paid money to a man for sex in the last 12 mo.	10.7 <sup>a</sup>	19.8	14.7
Had a permanent partner	51.5	55.3	44.7
Had male permanent partner	42.2	43.0	38.6
Had female permanent partner	4.9	11.6	4.3
Had transgender permanent partner	3.8	2.6	1.9
Had used condom during last anal sex	74.0 <sup>b</sup>	56.7	65.4
Had always used condom during anal sex in last 12 mo.	50.1 <sup>c</sup>	28.3 <sup>d</sup>	65.4
Had sex with woman in the last 12 mo.	28.0 <sup>e</sup>	32.1	20.8
Had sex with female sex worker in the last 12 mo.	-	14.7	13.6

*a: the time frame used in IBBS 2012 was 'during the last 6 months'*

*b: This data was recalculated from IBBS 2012 data as 'had used condom during last anal sex regardless of type of partner'*

*c: Percentage is derived from average of 'always use condom' with paid sex, bought sex and consensual sex'*

*d: Percentage is derived by subtracting 'Percentage who had sex without condom in the past 12 mo.' from 100%*

*e: the data refer to 'ever had sex with a woman'*

**Table 57: Comparison of substance abuse among MSM in 2012, 2014 and 2017 IBBS**

	2012 (%)	2014 (%)	2017 (%)
Consumed alcohol before sex in the past month	31.8	38.7	32.1
Have used syabu/ice before sex	19.7	19.3	11.4
Have used heroin before sex	1.6	1.5	5.1
Have used ecstasy before sex	7.4	5.8	3.7
Have use cocaine before sex	1.6	4.3	0.3
Sexual partners ever used drugs before having sex	15.9	29.1	13.8
Have ever injected drugs	3.6	2.8	4.4
Respondent still injecting drugs	-	1.0	0.9
Have sexual partners who used injected drugs	3.9	7.6	1.6

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## PATTERN OF HIV SERVICES UTILISATION

Comparisons between IBBS 2012, 2014 and 2017 on pattern of HIV service utilisation among MSM respondents is summarised in Table 58.

- a) The percentage of MSM respondents who reported to have attended face-to-face and group discussions in the past twelve months almost doubled in 2017 compared to 2014 findings. Similarly, the proportion of MSM respondents who have been contacted by NGO outreach/ healthcare worker in the last three months also increased considerably in 2017 (31.1%) compared to the recorded 19.6% in 2014. However, a large percentage of 68.9% were not contacted in the last three months.
- b) Number of MSM respondents who have received free condoms from NGO/ drop-in centre had increased slightly in 2017 (36.1%) compared to 2014 findings (32%). However, the recorded figure in 2017 is considerably low compared to the findings in 2012 which revealed that more than half of MSM respondents (52.9%) accessed free condoms through NGOs or drop-in-centres. Free condoms are mostly disseminated by the NGO outreach workers and as such the low frequency of contact with outreach worker could have possibly affected the access to condoms among these MSM respondents. Also contact with NGO outreach worker is increasingly done through social media applications where face to face approach has become less popular and convenient among the MSM. Condoms are probably requested only when needed as condoms can be accessed at an affordable price in local context.
- c) Proportion of MSM respondents accessing STI check-up was observed to steadily increase between 2012 and 2017 (9.3% in 2012, 10.9% in 2014 and 12.8% in 2017). However, given the risky sexual behaviour among the MSM community, more MSM respondents should be accessing this service more regularly.
- d) More than half of the MSM respondents in 2017 had anal examination as part of check-up (57.5%) and this is a higher percentage compared to IBBS 2012 and 2014, signalling an improved level of awareness among health care provider in examining the possibilities of anal STI.
- e) Similarly, number of MSM respondents who had undergone HIV test and were informed of their result increased remarkably in 2017 (66.9%) compared to the recorded 40.9% in 2014. However, the same is not observed among their partners. Percentage of permanent partner who have undergone HIV test remained under a quarter in all three rounds of surveys (29% in 2012, 23.5% in 2014 and 25.7% in 2017). The recently introduced community-based HIV screening by the government in partnership with the civil society possibly contributed to the improved level of testing among the MSM community. Through this initiative, selected outreach workers were

trained in government facilities by the healthcare workers to conduct HIV screening on the ground.

- f) A sizeable proportion of the MSM respondents in 2017 (49.1%) disclosed their status to their permanent partner and this figure saw substantive improvement compared to the recorded 19.8% in 2014.

**Table 58: Pattern of HIV service utilisation among MSM respondents in 2012, 2014 and 2017 surveys.**

	2012 (%)	2014 (%)	2017 (%)
Have ever attended health talk past 12 mo.	29.0	28.6	
Have ever participated in face-to-face discussion past 12 mo.	23.5	19.0	38.9
Have ever participated in group discussion past 12 mo.	24.9	16.4	30.3
Have been contacted by NGO outreach/healthcare worker/friend last 3 mo.	22.2	19.6	31.1
Have accessed free condoms from NGO/drop-in center	52.9	32.0	36.1
Had STI checkup	9.3	10.9	12.8
Had anal examination as part of checkup	38.2	34.1	57.5
Had HIV tested and informed of result in the last 12 months	47.1	40.9	66.9
Shared result with permanent partner, friend or family	21.6	19.8	49.1
Permanent partner had HIV tested	29.0	23.5	25.7

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## AWARENESS ON HIV RISK AND PREVENTION EFFORTS

Findings on knowledge of HIV in IBBS 2012, IBBS 2014 and IBBS 2017 (Table 59) can be summarised as below:

- a) Knowledge on HIV in 2017 was still under 50% although the percentage had improved compared to the past two rounds of surveys (44.5% in 2012, 47.9% in 2014 and 49.6% in 2017).
- b) There were still misperceptions about HIV transmission especially that having one faithful, uninfected partner can reduce risk of HIV with scores dropping from 80.2% in 2014 to 73.6% in 2017.

**Table 59: Comparison of HIV knowledge between IBBS 2012, 2014 and 2017.**

	2012 (%) (N=365)	2014 (%) (N=531)	2017 (%) (N=682)
Adequate score on HIV knowledge (score 5 – all correct)	44.5	47.9	49.6
A person can reduce HIV transmission by using a condom	89.9	89.6	85.6
A person can reduce risk of HIV by having one faithful, uninfected partner	79.2	80.2	73.6
A person cannot become infected with HIV through mosquito bites	78.1	74.6	83.0
A person cannot become infected with HIV by sharing meal with someone infected with HIV	74.5	80.8	88.9
A healthy-looking person can have HIV	88.2	81.9	81.4
<i>Calculation based on correct answer.</i>			

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## HIV PREVALENCE

Overall HIV prevalence among MSM increased by more than twofold to 21.6% in 2017 from just 8.9% in 2014 (Table 60). This increasing trend is mirrored by all states, particularly by Kuala Lumpur and Johor in which the prevalence in Kuala Lumpur doubled from 22% in 2014 to 43.3% in 2017. Similarly, HIV prevalence in Johor increased from 15.6% in 2014 to 31.1% in 2017. These two are the most urbanised states in the country.

The HIV prevalence also bounced back in 2017 to 5.9% in Penang after recording a sharp decline from 13.7% in 2012 to just 4% in 2014.

**Table 60: Comparison of HIV prevalence among MSM between IBBS 2012 and 2014.**

HIV Prevalence by State	2012 (%) [n=365]	2014 (%) [n=531]	2017 (%) [n=682]
Penang	13.7	4.0	5.9
Kuala Lumpur	10.2	22.0	43.3
Johor	-	15.7	31.1
Malacca	6.0	-	-
Sabah	1.3	3.1	5.0
Sarawak	2.0	-	-
Total	7.1	8.9	21.6

## CONCLUSION AND RECOMMENDATION

From the comparison of findings in IBBS 2012, 2014 and 2017, it can be concluded that:

- (a) The HIV prevalence among MSM has drastically increased from 8.9% in 2014 to 21.6% in 2017. The two most urbanised states, namely Kuala Lumpur and Johor continued to observe an increasing trend in its HIV prevalence (Kuala Lumpur – 10.2% in 2012, 22% in 2014, 43.3% in 2017 and Johor – 15.7% in 2014, 31.1% in 2017). From the findings, it can be concluded that there is still a substantive number of MSM who continue to engage in inconsistent condom use particularly with casual partners (reported inconsistent condom use among casual partner is 53.8% in 2017), consume alcohol and use drugs such as syabu before sex. Although the prevalence of these risky behaviour seemed to have decreased in 2017 compared to 2014, it is evident that the rate of decline is insufficient to give an impact to the overall HIV prevalence among the MSM community.
- (b) The number of young MSM aged 24 and younger increased in 2014 and remained the highest in 2017. This continues to be a concern as anecdotal evidence suggests that inconsistent condom use and substance use are more rampant among the younger MSM who are also more likely to engage in chemsex, putting them at a greater risk of acquiring HIV. In 2017, almost half of the respondents admitted having consumed alcohol while a larger proportion of 60.7% admitted that they consumed drugs during chemsex.
- (c) While male-to-male sex is preferred by most of those surveyed in this study, a substantial number of MSM are also having female sexual partners. This could be due to continued family and societal pressure to conform to masculine norms. Low level of consistent condom uses with these women, coupled with already relatively high rates of HIV prevalence among MSM and low rates of protective behaviour with male sex partners reveals yet another contributing factor to elevated HIV among MSM.



- (d) Inadequate level of knowledge coupled with low level of health seeking behaviour characterised by low level of HIV testing and STI check-up could also have contributed to the increase in HIV prevalence among the MSM community in the country.
- (e) The proportion of MSM who had not been contacted by NGO outreach worker, health care worker in the last three months was very low. In 2017, 68.9% of the respondents commented that they were not contacted in the last three months.

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## RECOMMENDATIONS:

IBBS 2017 recorded a dramatic increase in the HIV prevalence among the MSM respondents and this establishes the urgent need to scale up the response with high impact comprehensive programmes to effectively reduce the prevalence particularly in states with high HIV prevalence.

The MSM in the country are mostly young warranting for HIV awareness and sex education programmes that are comprehensive and life-skills based designed in either formal or non-formal settings to support the young MSM in building the necessary knowledge, skills and attitudes to make informed and responsible decisions concerning their sexual behaviour and the risk of acquiring diseases such as HIV and other STIs.

More urgently, the treatment cascade among the MSM needs to be strengthened at every level right from HIV testing all the way to treatment and ensuring viral load suppression. The existing outreach as well as the community-based HIV screening programmes need to be expanded further to cover more the MSM population particularly in areas with high HIV prevalence. It is equally important for the MSM to be made aware of the availability of the prevention and treatment services to improve accessibility to the available services. To establish connection with the MSM, the widely used and trending social applications should be used more if the traditional face-to-face approach is not the most convenient and preferred option by the community. The capacity of the local NGOs should also be investigated to not only increase access to more of the MSM community but to also bring about a positive behaviour change at a wider scale this time.

Also, the current prevention package should include Harm Reduction Programme to address multiple risk factors including chemsex involving use of drugs just before sex as this leads to higher frequency of unprotected sex, hence a higher HIV prevalence. Pre-exposure Prophylaxis (PrEP) could also be offered to HIV-negative MSM as an additional prevention choice for the MSM, considering the rapidly growing HIV epidemic among this group. World Health Organisation (WHO) recommended that PrEP, when used alongside existing prevention programmes such as routine HIV testing, provision of condoms and risk-reduction counselling, it can provide nearly complete protection from HIV infection (13). WHO also

recommends that PrEP is used together with condoms as it does not protect against other STI. There is indeed a compelling need to raise awareness on persistent condom use among this sub-population.

Apart from outreach and HIV testing, the prevention programmes should also strengthen its approach in engaging MSM who are tested positive in treatment in a timely manner to prevent onward HIV transmission. Innovative approach needs to be explored to engage more, particularly the unexposed MSM in HIV prevention and treatment programmes through different mediums and strategies. Again, capacity building for outreach workers and healthcare workers could contribute in effectively linking MSM who are tested positive to treatment in a timely manner. There is also anecdotal evidence that stigma and discrimination in the health care setting deters this group from accessing the much-needed services. As such, this also needs to be addressed to further accelerate testing and treatment coverage and adherence among the MSM.

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## NOTES



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