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# HIV EPIDEMIOLOGY REVIEW INDONESIA 2016



Directorate General of Disease Prevention and Control  
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The HIV epidemiology and programme impact review is an important component for National AIDS Programme (NAP) in planning and interventions. The epidemiological analysis was conducted from many data sources which mostly come from the second generation of HIV surveillance. The 2016 review is a first time for Sub Directorate HIV AIDS and STD to assess systematically the situation of HIV epidemic and programme impact by involving the national and international experts from some universities, WHO and UNAIDS.

The main result showed the HIV epidemic in Indonesia is concentrated among key affected populations as female sex workers (FSW), men who have sex with men (MSM), waria and people who inject drugs (PWID). In Papua and West Papua, the epidemic is different with more women infected and consider as low-level generalized epidemic. The presence of key drivers for HIV epidemic are high level of HIV prevalence among key affected population and overall low level of use condom <60% as well the low knowledge about HIV access to HIV testing among general population.

HIV surveillance makes a good progress, especially in the implementation of the web based application system of HIV/AIDS (SIHA) in many provinces, the methods of data collection are stronger for the Integrated Biological and Behavior Survey (IBBS), size estimation of key populations (KPs) and projection of HIV/AIDS. However, strengthening of STI surveillance is needed in the routine reporting system.

This result can assist Indonesia to optimize the national HIV response, surveillance and prevention efforts that need to be expanded among key populations and in geographic settings where different level of intensity and possibly concentrated HIV epidemic are emerging or are already endemic.

We express our deepest appreciation to all parties for the attention, assistance and contribution in this important review.

Hopefully, this book useful in the HIV-AIDS control programme, not only for the Ministry of Health, but also to all work partners of HIV-AIDS control.

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## ACRONYMS AND ABBREVIATIONS

ADB	Asian Development Bank
AIDS	Acquired Immuno-Deficiency Syndrome
ANC	Antenatal care
ART	Antiretroviral therapy
ARV	Antiretroviral
BCC	Behaviour Change Communication
CDC	Centre for Disease Control
CHAS	Centre for HIV/AIDS and STI
CUP	Condom Use Program
DHS	Demographic Health Survey
FSW	Female Sex Worker
GARPR	Global AIDS Response Progress Reporting
GFATM	Global Fund to fight AIDS, Tuberculosis and Malaria
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
HIS	Health Information System
HIV	Human Immuno-Deficiency Virus
HTCHIV	Testing and Counselling
IBBS	Integrated Biological and Behavioural Surveillance
KP	Key populations at higher risk
IEC	Information, Education and Communication
M&E	Monitoring and Evaluation
MoH	Ministry of Health
MSM	Men who have Sex with Men
NAP	National AIDS Programme (Sub Directorate HIV AIDS & STD)
OI	Opportunistic Infections
OVC	Orphan vulnerable children
PCCA	Provincial Committee for the Control of AIDS
PHD	Provincial Health Department
PLHIV	People living with HIV and AIDS
PMTCT	Prevention from Mother to Child Transmission
PPS	Proportionate probability sampling
PWID	People Who Inject Drugs
PWUD	People Who use Drugs
PR	Principal Recipient
RDS	Respondent driven sampling
SIHA	HIV/AIDS and STI web based application system (Sistem Informasi HIV/AIDS dan IMS)
SGS	Second Generation of HIV surveillance
TLS	Time location sampling
STI	Sexually Transmitted Infection
UIC	Unique Identifier Code
UN	United Nations
UNAIDS	United Nations Joint Program on HIV/AIDS
UNICEF	United Nations Children's Fund
WHO	World Health Organization

## EXECUTIVE SUMMARY

An HIV epidemiologic review and impact analysis for Indonesia was conducted by a team of Indonesian epidemiologists and support from WHO and UNAIDS. The objectives of this epidemiological review were: 1) **to review the methods of data collection**, 2) **to review the HIV prevention and care cascade** and 3) **to review the level of, and trends in the HIV epidemics (incidence, prevalence, mortality) and its distribution**. The report is structured to address each objective.

The epidemiological analysis drew from a variety of data sources, including desk review, secondary analysis and triangulation of available data. The desk review included biological & behavioural survey reports, National Strategic Action Plan on HIV 2015-2019, national and global HIV guidelines and standard operating procedures, previous conducted HIV program reviews in Indonesia and peer reviewed studies. Not all documents were available in English, thus some of the documents, as specific guidelines or standard operating procedure for provinces were not been reviewed but there was discussion about these topics with the technical staff from NAP and representatives from several provinces.

Indonesia has a decentralized health system. Health policies, strategies and monitoring are the responsibility of MOH, while province and district authorities are fully responsible for the health services in their administrative area. Administratively, Indonesia consists of 34 provinces with 416 districts and 98 municipalities. Each province has its own legislature and governor

Indonesia has acquired long and large experience in conducting Integrated Biological Behavioral Survey (IBBS) and HIV sentinel surveillance (HSS) with different methods and populations. It has been consistent over time in terms HIV sentinel surveillance (HSS) of location and populations. The use of this information is critical to plan interventions with KP in the right places. However, there was not much information presented in how these data was used. Taking into account the cost and complexity and the need to have a deeper analysis and use of data, IBBS could be spaced on time, and be conducted every 3-4 years, alternating sites and places but keeping the consistency. There is a need to select appropriate populations in each province and according to the level of HIV prevalence in the provinces. Preference should be given to high-level prevalence. Programmatic mapping for interventions should be also a priority, so districts can improve planning and implementation of preventions care and treatment activities.

The second-generation surveillance system in Indonesia has been able to track the HIV epidemic among KP with appropriate methods and tools. Further recommendations are listed in the report.

Indonesia presents a complex epidemic and dynamics in a very large country in land extension and number of islands as well as in population with a very dynamic and cosmopolitan urbanization in the last decade. Indonesia, as many countries in Asia, presents and heterogeneity of the epidemic in the context as well as in the level of HIV prevalence among key populations. The epidemic in Indonesia is mostly concentrated and extremely important in key populations as MSM, Waria, FSW and PWID with clear levels and trends in many of Provinces as presented in the report. In Papua and West Papua, the epidemic is different with more women infected and we could call low level generalized. The definition of the estimating tool AEM about was so called “the low risk population” has been changed to “non-key population”, since they are very high risk of contracting HIV, even outside of the traditional KP are sexual partners of SW, sexual partner of PWID, sexual partner of bisexual males, former SW among sectors.



Indonesia surveillance systems has shown that prevalence levels in some provinces and in some populations, are well above 20%. HIV infections trends shows an increase of new infections among MSM and Waria, some decrease among PWID and a mixed trend among FSW. Indonesia has undertaken a unique approach to estimate the number of key populations that are more at risk, as not all members of KP are at the same level of risk. Methods have been refined over the years. The IBBS conducted in Indonesia have shown the interactions and the level of contact between different population groups, and the level of protection that these populations have adopted and it is relatively low. In the case of Indonesia, most of new infections are coming from key populations and their sexual partners.

The level of STI infections like syphilis and gonorrhoea are reported by IBBS and HSS among KP. Syphilis reported in the last 2015 survey remains very high among Waria (17.4%), MSM (15.7%) and more moderate between FSW (6.5%) and PWID (1.5%). Therefore, one of the main cofactors for HIV transmission is still very present among KP.

There were an estimated 613,435 persons living with HIV (PLHIV) in Indonesia in 2015. As in other Asia-Pacific countries, HIV & AIDS in Indonesia remains concentrated in sub-populations exposed to elevated risk of HIV transmission due to their behaviours. These people are commonly referred to as “Key Populations” (KPs), and include female sex workers and their clients, persons who inject drug (PWID), men who have sex with men (MSM) and transgendered persons (Waria). Tanah Papua is an exception to the regional norm, with an estimated HIV prevalence of 2.3% in general population in 2013.

The national HIV prevalence rate among people aged 15 years and above was estimated to be 0.33% in 2015. Provincial estimates of HIV prevalence range from 0.1% to over 2.0%. The absolute numbers of PLHIV are highest in Jakarta and in the highly populated provinces of Java, as well as in Papua and West Papua. Although driven in earlier years by needle sharing among PWID, sexual transmission is now the primary mode of transmission of HIV. New infections are estimated to be about 49,000 per year.

The prevention, care and treatment cascade for all populations, and treatments services (TB, PMTCT and ART) have shown many gaps that should be addressed. In the times of scale of ART and the fact that KP are very mobile and stigma is still very present. The fact also that KP are very uneven distributed it makes also harder to evaluate the impact of interventions at national level. Indonesia has done tremendous progress in increasing the number of people tested. In addition, increase the people on ART with more than 60,000 from a few thousands only in early 2011. Therefore, measuring impact should be done at more local level and for each KP, as well as looking at the scale up of interventions put in place.

Knowledge about trends and current patterns of HIV infections is essential for planning and evaluating National HIV programs. Characterizing the risks factors for HIV infection can provide insight on how best to target HIV prevention efforts and ensure full coverage of HIV services to ensure the highest positive impact. Understanding these dynamics can inform priority areas for resource allocation, especially in a decreasing donor funded environment. A comprehensive epidemiological review of a country's HIV situation can provide this evidence base by bringing together all relevant data from multiple sources and conducting in-depth analyses and triangulation.

In 2011, Indonesia conducted comprehensive reviews of the HIV National Response. Since then many activities have been scaled up and many surveillance activities undertaken in different populations and geographical locations. As part of the process for a HIV program review in 2017, a more focused analysis on the complete scope and range of epidemiological data available was conducted in December 2016. In order to inform Indonesia in the design and implementation of an evidenced base, comprehensive, well prioritized and targeted effective HIV response strategy. The National AIDS Programme (NAP) Ministry of Health with provincial representatives, national experts, in partnership with WHO and UNAIDS conducted an in-depth epidemiologic review and impact analysis of the country's HIV situation during a workshop held in Yogyakarta in December 2016.

The objectives of this epidemiological review were the following:

1. **To review the methods of data collection** from the existing of second generation of HIV surveillance, such as: HIV and AIDS case reporting, HIV sentinel surveillance, size estimation of key populations, estimates and projection of HIV/AIDS, sexually transmitted infection (STI) case reporting, integrated biological and behavioural survey of population at higher risk and general population (Tanah Papua).
2. **To review the HIV prevention and care cascade** in providing the information on country progress in the response to HIV epidemic.
3. **To review the level of, and trends in the HIV** epidemics (incidence, prevalence, mortality) and its distribution

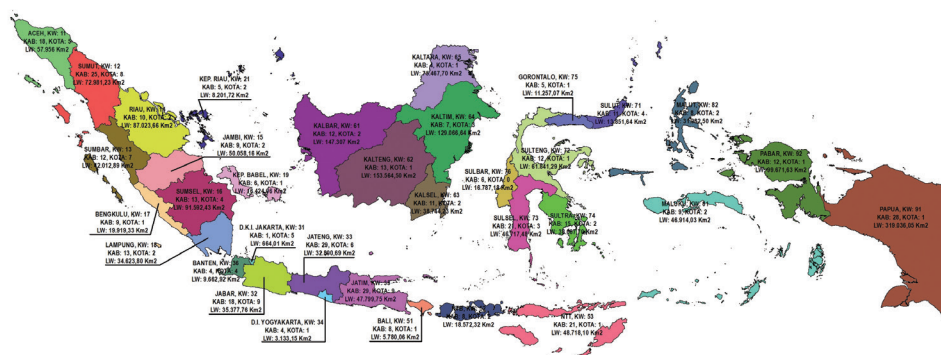
The report is structured to address each objective. **First**, a brief summary of Indonesia country profile presents the context and potential external factors, which can potentially influence the dynamics of HIV and STIs in the country. **Second**, the HIV and STI Health Information System is reviewed, highlighting important gaps and potential solutions for ensuring quality and robust data are available to monitor trends and evaluate progress in the national response. **Third**, based on the available data a comprehensive review of Indonesia HIV and STI epidemiology is presented highlighting the most affected populations groups and driving characteristics. The last section focuses on progress in national response and its potential impact, by first walking through the cascade of prevention to treatment and identifying the programmatic gaps. It concludes with the summary of recommendations in Strategic Information made in the last program review in 2011 and updated further.

The review drew from a variety of data sources, including desk review, secondary analysis and triangulation of available data. The desk review included biological & behavioural survey reports, National Strategic Action Plan on HIV 2015-2019, national and global HIV guidelines and standard operating procedures, previous conducted HIV program reviews in Indonesia and peer reviewed studies. Not all documents were available in English, thus some of the documents, as specific guidelines or standard operating procedure for provinces were not been reviewed but there was discussion about these topics with the technical staff from NAP and representatives from several provinces.

The experts provided a technical support to the completing the process of reviewing the existing documents, providing conclusion and recommendation, as well as final draft of technical report. Ministry of Health led this process in collaboration with the WHO that will include activities below:

1. Review and compile published HIV specific data and reports. The possibility data sources:
  - a. National Action Plan for Health Sector and national health policies related to the HIV control programme;
  - b. Programme reports: HIV Counselling and Testing (HTC), HIV care and ART, ART cohort, Sexually Transmitted Infection (STI), HIV Sentinel Surveillance (HSS), Prevention from Mother to Child Transmission (PMTCT), TB-HIV, blood donor report for blood borne infection;
  - c. Population based surveys: Demographic Health Survey (SDKI), Basic Health Survey (Riskesdas);
  - d. Integrated Biological and Behavioural Survey (IBBS);
  - e. Report of size estimation of key populations;
  - f. Report of estimates and projection of HIV/AIDS;
  - g. Investment Case Analysis (ICA);
  - h. Literature/independent studies
2. Desk review of existing documents
3. Workshop/meeting: preparation meeting and peer expert review meeting

Figure 1: Indonesia by province, 2015



Source: Pusdatinkomtel, Ministry of Home Affairs, 2015

The Republic of Indonesia is located mainly in Southeast Asia with some territories in Oceania, with more than 13,000 islands and population of over 250 million people. At 1,922,570 square kilometres of land area combined with 3,257,483 square kilometres of sea area. The country's gross national income per capita has steadily risen, from US\$560 in the year 2000 to US\$3,374 in 2015. Today, Indonesia is the world's fourth most populous nation, the world's 10th largest economy in terms of purchasing power parity. An emerging middle-income country, Indonesia has made enormous gains in poverty reduction, cutting the poverty rate to more than half since 1999, to 11.2% in 2015.

Life expectancy at birth is 71 years for female and 67 for males. Infant mortality rate (under 1-year-old) is estimated to be at 22 per 1,000 live births in 2015. Indonesia country profile 2015 reports that under-5 mortality rate is 27 per 1,000 live births. The maternal mortality ratio is reported to be at 305 per 100,000 live births (2015). In the 2015 WHO Global Report, the TB incidence in Indonesia was reported to be at 395 per 100,000 populations and TB mortality was reported at 10 per 100,000 populations.

Health expenditure per capita is increasing from 20 US\$ in 1995 to US\$ 99 in 2014, representing 2.9 per cent of the GDP. Government expenditure on health represents about 54.4 per cent of the total spending on health. MOH run the universal health coverage through the central government funded *Jaminan Kesehatan Nasional (JKN)*, national health insurance scheme.

Indonesia has a decentralized health system. Health policies, strategies and monitoring are the responsibility of MOH, while province and district authorities are fully responsible for the health services in their administrative area. Administratively, Indonesia consists of 34 provinces with 416 regencies and 98 municipalities. Each province has its own legislature and governor. The provinces are subdivided into district (Kabupaten) and municipalities (Kota), which are further subdivided into sub-districts (Kecamatan or Distrik in Papua and West Papua and again into administrative villages (either Desa, Kelurahan, Kampung, Nagari in West Sumatera, or Gampong in Aceh).

### Overall HIV information system

Indonesia has set up a very comprehensive HIV surveillance system that embraces the principles of Second Generation Surveillance since early 2000, with HIV, AIDS and STI regular reporting, key population size estimates, sentinel surveillance and integrated biological and behaviour survey. Indonesia has used the data collected to produce regular estimates and projections based in the recommended methods and tools developed by WHO and UNAIDS. The technical staff from the NAP has attended regular workshop trainings in HIV surveillance and estimates organized by UNAIDS/WHO. Thus, the MOH/NAP has very capable technical staff. They have developed strategic work and adopted international guidelines to the national context and implement surveillance activities in collaborations with the Academia in different provinces. Indonesia is a decentralized country and consequently surveillance activities are undertaken in the provinces and districts by local health officials under the guidance and directions from the NAP in the MOH in Jakarta. Therefore, training and supervision of surveillance officers and activities in the provinces are essential to maintain the quality of data being collected and to ensure the timeliness of information collected either within the routine system or surveys among different populations.

Each component of the second-generation surveillance system and the data available over the last 5 years since last program review in 2011, were analysed and reviewed it. A review of the established system was done, but was not assessed in deep (like forms, questionnaires, visits in the field etc.) as this would have required much larger team, visits to the provinces and districts, translation into English of several documents and therefore much more time. The overall HIV surveillance data available in the country was used to produce an epidemiology analysis.

### HIV and AIDS case reporting

AIDS case reporting was first recommended by WHO in mid 1980s, based in clinical signs and laboratory confirmation. AIDS notification data represents what the HIV epidemic was a decade before, as the median time progression from HIV infection to AIDS is about 11 years, with some variations according to subtype and age of infection. Indonesia has been reporting AIDS cases since 1980s. AIDS cases are reported according to stage III or IV in HIV infection. HIV testing strategy III is being used for HIV diagnosis.

HIV infection data however is more interesting as notification, as it provides a more relative recent picture of the epidemic if HIV diagnosis are done early on time, but this is not necessary the case in all circumstances. Indonesia reports HIV cases as well. All people who have an HIV positive test and are on stage 1 or 2 are reported as an HIV case. In Indonesia HIV case notification come from VCT centres, health services like PMTCT, and other different services. The level of HIV testing, the people being tested and other external factors like campaigns, PMTCT programs expansion, stigma etc. can affect the data collected as the number of people being tested can vary significantly. Therefore, it is important to have some background information in the people being tested and reported. Both systems however can be affected by several factors, like under diagnosis, underreporting, sub notification, delays in notification and other bias. Completeness, timeliness and accuracy are essential attributes of any routine notifications systems. The form for AIDS cases has up to 50 variables. It is important to note that all provinces have reported HIV/AIDS cases.

However, if the bias remains the same, analysis of these data can provide some basic distribution by age, gender and location, providing also at least some trends, even though the burden of infection in the provinces or national can be underestimating. During the workshop, this system was not assessed.

In spite of the limitations, that HIV/AIDS reporting can provide important information in some key variables like age, gender and location. Indonesia has developed in the last few years a system called SIHA (HIV/AIDS and STI web based application system/ Sistem Informasi HIV/AIDS dan IMS) for HIV and AIDS case notification where all the provinces should be using for reporting new HIV diagnosis. The system does not allow for deduplication, neither for follow up and it is not linked to the ART databases. However, SIHA allows provinces to identify some trends in reporting and clearly the districts that have higher burden of HIV. Understanding who, why and where people being tested are an important element to understand the data provided by SIHA.

WHO is preparing guidelines on implementing HIV case surveillance and improving Patient Monitoring System through new tools and the use of unique identifiers. This guideline has a principle to integrate systems and improve sustainability of health information systems. Indonesia with the new system SIHA is in the right direction.

## HIV Surveillance and Survey

### HIV Sentinel Surveillance (HSS)

Indonesia conducts regular HIV sentinel surveillance among key populations at higher risk (KP) at district level using convenience sampling, RDS or TLS with a sample size of 250 for KP and 400 for pregnant women in some districts only. Not all the districts undertake HSS among all KP, as there are some variations in the KP targeted. The last sero-surveillance report published 2013 undertook the survey 22 cities for KP and rapid behavioural surveys (RBS) among KP in 8 cities, with a total of 6600 participants for HSS and 2800 for the RBS. The HSS are conducted by local health official under the guidance of the NAP and standard guidelines have been used. Trainings have taken place to disseminate and implementation of the guidelines.

### Integrated Biological and Behavioural Surveys in key populations

Integrated Behavioural Biological Surveys are an important component of SGS as these surveys are done in the communities of KP, that often have difficulties in reaching health services. One of the first steps is defining what it means KP. Indonesia has adopted the following definitions presented in the next table. These definitions were acceptable as follows UNAIDS/WHO recommendations, as it takes into account the main KP and the most recent risk factors for HIV and the time of one year what is reasonable.

**Table 1: Definition of Key population**

Population	Definition
<b>FSW</b>	Females aged 15 years or older who receive money or goods in exchange for penetrative sex in the last 12 months
<b>MSM</b>	Biological males aged 15 years or older who had sex with a man in the last 12 months
<b>PWID</b>	Males or females aged 15 years or older who injected drugs categorised as narcotics in the last 12 months
<b>Waria</b>	Biological males aged 15 years or older who identify their gender identity as females

During the epidemiological analysis workshop, the definitions were revised and consensus reached in some new ones, but not significantly different. The new KP definitions are presented in the recommendations of the workshop held in Yogyakarta.

Indonesia has performed many IBBS in different populations and locations, using different approaches. The following tables and graphs present the IBBS conducted in Indonesia and its main results of the since 2007. The following tables present: the surveys among KP undertaken, the sample size and method of sampling and if the comparison over time and places can be assessed as trends. The caveats with IBBS is that KP are very mobile and per definition hard to reach. In addition, some KP may have several risk factors for HIV transmission. Therefore, any external factors like police raids, new policies related to KP, or socio economic changes can affect the people reached to be sample for the surveys. Therefore, is essential when conducting such surveys to understand if such factors are present and may affect the sample of the IBBS as it can introduce new bias and undermine the results or possible trends. Nevertheless, the basic principles of using the same methods, an adequate sample size and location are the basis to assess trends among KP.

**Table 2: Available data on surveillance for FSW\***

	IBBS-Group A			IBBS-Group B	
	2007	2011	2015	2009	2013
<b>Location</b>	14 districts	16 districts	16 districts	9 districts	9 districts
<b>Sample Size</b>	target 250 per location	target 250 per location	target 250 per location	Target 250 DFSW and 200 IDFSW per location	Target 250 per location
<b>Sampling</b>	PPS	PPS	Multistage random sampling	PPS	Multistage random sampling
<b>Comparisons &amp; trends</b>	Data are comparable across three surveys and can provide trends			Data are comparable across two surveys and can provide trends	

\*including Direct and Indirect FSW



**Table 3: Available data on surveillance for Waria**

	IBBS-Group A			IBBS-Group B	
	2007	2011	2015	2009	2013
<b>Location</b>	5 districts	5 districts	5 districts	4 districts	4 districts
<b>Sample Size</b>	target 250 per location	target 250 per location	target 200 per location	Target 200 per location	Target 250 per location
<b>Sampling</b>	PPS	PPS	Multistage random sampling	PPS	Multistage random sampling
<b>Comparisons &amp; trends</b>	Data are comparable across three surveys and can provide trends			Data are comparable across two surveys and can provide trends	

**Table 4: Available data on surveillance for MSM**

	IBBS-Group A			IBBS-Group B	
	2007	2011	2015	2009	2013
<b>Location</b>	6 districts	6 districts	6 districts	3 districts	3 districts
<b>Sample Size</b>	target 250 per location	target 250 per location	target 200 per location	Target 200 per location	Target 250 per location
<b>Sampling</b>	TLS, RDS	RDS	RDS	RDS	RDS
<b>Comparisons &amp; trends</b>	Data are comparable across three surveys and can provide trends			Data are comparable across two surveys and can provide trends	

**Table 5: Available data on surveillance for PWID**

	BBS-Group A			IBBS-Group B	
	2007	2011	2015	2009	2013
<b>Location</b>	6 districts	6 districts	6 districts	4 districts	4 districts
<b>Sample Size</b>	target 250 per location	target 250 per location	target 200 per location	Target 200 per location	Target 250 per location
<b>Sampling</b>	RDS	RDS	RDS	RDS	RDS
<b>Comparisons &amp; trends</b>	Data are comparable across three surveys and can provide trends			Data are comparable across two surveys and can provide trends	

**Table 6: Available data on surveillance for Prisoners**

	IBBS-Group A			IBBS-Group B	
	2007	2011	2015	2009	2013
<b>Location</b>	-	Batam, Jakarta Pusat, Semarang, Banyuwangi, Malang	Batam, Jakarta Pusat, Malang, Banyuwangi, Denpasar	-	Kalimantan Barat, Kalimantan Timur, Bengkulu
<b>Sample Size</b>	-	400	400	-	400
<b>Sampling</b>	-	PPS	SRS	-	PPS
<b>Comparisons &amp; trends</b>	Data are comparable across two surveys and limited trends in 4 sites			Data available for one year, no possible trends	

Indonesia has acquired a large experience in conducting such surveys among KP. It has undertaken them in several locations, different groups and has used different methods like RDS, TLS or convenient sampling designs according to the context and populations. There are in one hand HSS and RBS in a yearly basis and in addition, there are IBBS that are conducted every 2 years among KP. There are done in alternate sites and have been consistent over time. These activities require considerable amount of resources in terms of human and financial as well as time to collect data, analyse and disseminate the information collected. In the other hand, the context and social dynamics change rapidly with the urbanization and economic progress in the country. For instance, the IBBS experts related how much more difficult is now to reach a sample size for PWID in comparison with previous rounds. Furthermore, the access to Internet and social media in Indonesia is widely available and it is known that the social media is being used by some KP for sexual encounters. However, no survey has been done in social media or other internet services.

The formative research, the training of interviewers, tools used, questionnaires and the supervision of IBBS process in a daily basis are essential in order to collect reliable and good quality data. It was informed that the questionnaires used for the different IBBS were based in the FHI (red book) that were published in 2000.

The HSS and IBBS report are well prepared and technically very strong. They present much more details and analysis of risk factors by KP and locations and there are very useful for planning and evaluate activities at district level. Furthermore, the IBBS reports provide a lot of more information that will be useful for addressing the impact of interventions among these populations at more local level.

With the economic change, evolution of Internet and the access to ART, the HIV landscape has changed substantially in many areas of work. Using digital tools, like tablets and automatic coding and other advance tools will improve the quality and minimize entry records, will facilitate the analysis and improve the overall quality of IBBS. In addition, questionnaires need to be updated. WHO/UNAIDS and partners are going to publish a new updated guidance and tools (including questionnaires for KP) in 2017, these new guidelines will be useful for Indonesia to update questionnaires and variables.

## Surveillance in the general population and other population groups

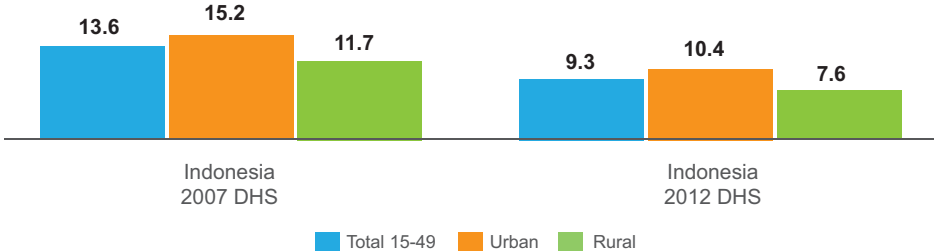
The Demographic Health Survey (DHS) conducted regularly has a setup of HIV indicators that are collected from the general population through household and individual interviews every 5 years. These data provide very valuable information about the level of knowledge and prevention indicators as well as some of the interactions between general population and KP. There is a bulk of information on these surveys and are national representative. These surveys can be analysed by multiple dimensions, like geographical location, level of education, wealth age etc. As DHS are regular on time and use the same methods and tools, there are quite robust in presenting trends among general population. The main limitation of these national surveys is that in concentrated epidemics, KP is hard to reach in household surveys.

The data presented below is only a very short summary of some of the indicators related to HIV interventions in relation to general population, but provided useful information on the context of HIV epidemic. This is only a brief summary of the key findings that are related to the HIV epidemic dynamics in Indonesia.

The knowledge about HIV/AIDS in the country has improved dramatically since 2002 when only 58% of women have heard of HIV/AIDS and was 77% in 2012. Men on the contrary were more aware in 2002 with 75% of them aware of the HIV epidemic and 85% in 2012. However, we know that even if it is said that knowledge is power, only awareness does not trigger behaviour change. However, this knowledge has been transformed in an increasing willingness towards accepting attitude and willing to care of a family member affected by HIV infection with 69% of women and 74% of men accepting that in the last 2012 survey. However, this positive attitude is counterbalanced by the fact that only about 31% of men and women would accept to buy fresh vegetables from some infected by HIV as reported in DHS 2012. Moreover, when the four composite indicators for accepting attitudes towards those living with HIV are combined only 11% of men and 9% of women have a positive response. All of this is to say that stigma and probably discrimination is still very present in Indonesia, and these are factors well demonstrated, that fuel HIV epidemic in countries.

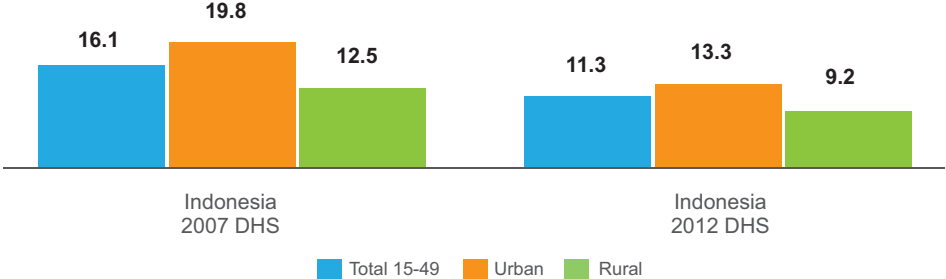
**Graph 1: Accepting attitudes towards those living with HIV - Composite of 4 components (Men and Women)**

Percentage of women expressing accepting attitudes towards people with HIV



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Percentage of men expressing accepting attitudes towards people with HIV

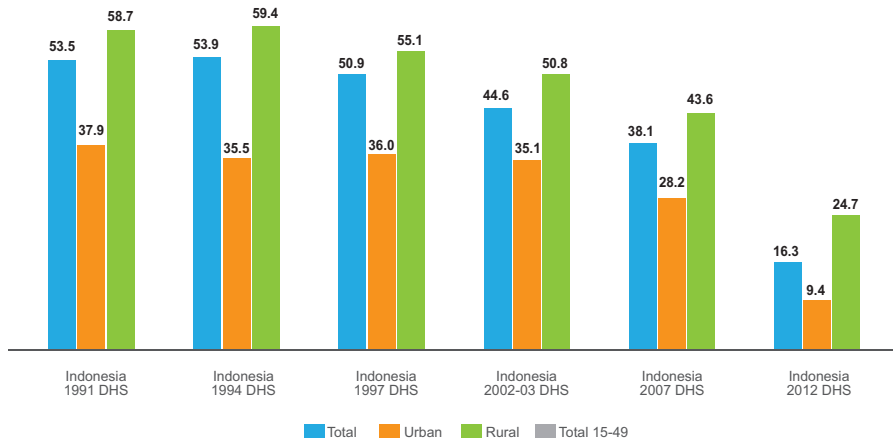


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Regarding HIV behaviour indicators, initiation of sexual relations is an important indicator for understanding sexual behaviour. In the case of Indonesia sex before the age of 18 years old has a significant difference between women and men and urban versus rural settings. In general, women in rural areas initiate sexual relations earlier than urban women and are higher than men of same age. While in women this trend has been decreasing over the years with 16% of them having sex overall before 18 years old in 2012, in men this figure is about 10% and has remain constant over the last decade. More likely the fact that rural women marriage an earlierly age than men and urban women can explain this result. However, we may consider that this trend, it will protect younger women from becoming infected as there are less in having sex before 18.

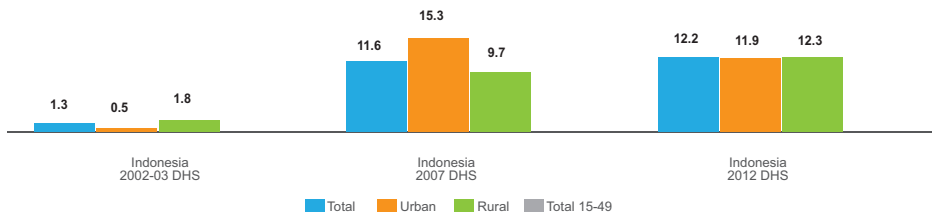
## Grafik 2: Sex before age 18 by women and men

Percentage of young women aged 18-24 who had sex before the age of 18



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Percentage of young men aged 18-24 who had sex before the age of 18

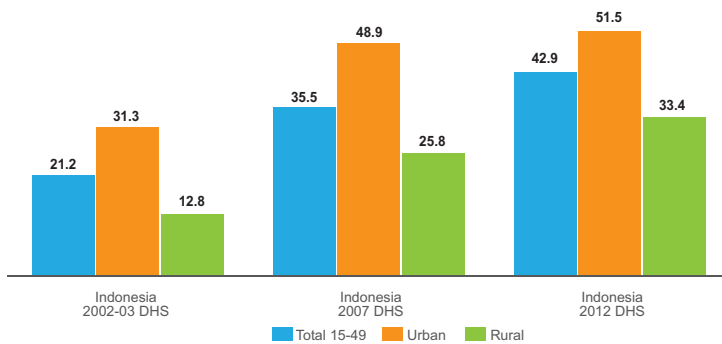


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Condom use is a well-demonstrated intervention to prevent HIV infection. The level of condom use among young women before premarital sex is very low with only a quarter of them reporting to have used it in 2012. However, in fact this result is not a surprised when even if the knowledge of condoms as prevention has doubled since 2003, only 40% of women knew that condoms can protect from HIV infection.

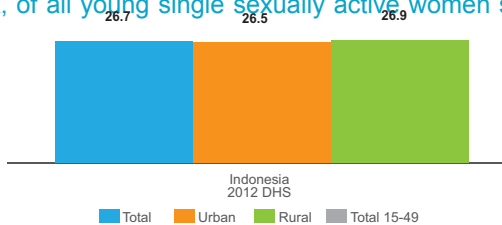
### Graph 3: knowledge of condom as prevention and use of condom by women

Percentage of women who, in response to a prompt question, say that people can protect themselves from contracting HIV by using condoms



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Percentage of young never married women age 15-24 who used a condom art last sex, of all young single sexually active women surveyed



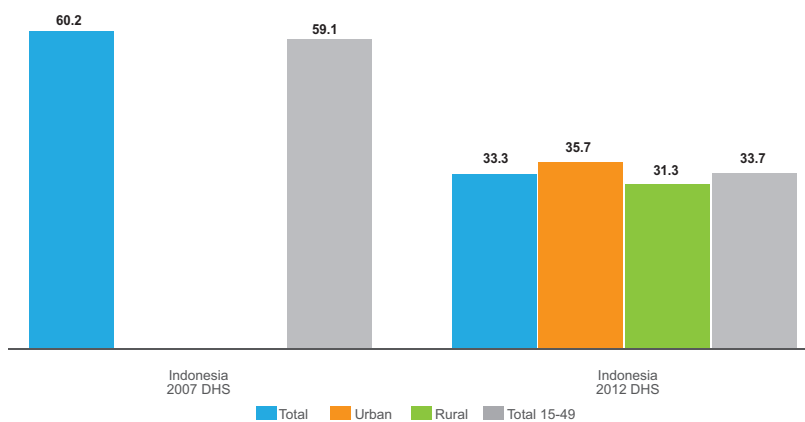
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The use of condom among men in the last paid sex act is also very low with only 33% of them responding in 2012 that they have used in their last paid sexual encounter. The trend has been declining comparing the data with 2007.

The interactions between female or male sex workers and clients in an important contributor the HIV epidemic in Indonesia as there is a high number of clients of sex workers according to the PSE from 2016. According to the last DHS in 2012, 5.4% of adult men have ever paid for sex with higher values in urban areas than rural areas. This represent a big increase from the data in 2003, but more likely this is an artefact of the context in the country where now people can talk more open about sexual contact and other issues related to HIV. If we apply this percentage the overall adult men population, the number of estimated men who reported to have paid for sex is about 4.3 Million, what is close to the lower value of clients of FSW estimated by the national working group in estimates in projections, as it will be presented later. Even though there is high level of awareness of men about HIV/AIDS and the condom as useful preventive method, only about 30% used in the last paid sex according to the DHS 2012.

**Graph 4: ever paid per sex by men and condom use at last paid sex**

Percentage of men reporting condom use the last time they had paid sex



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Percentage of men who ever pad for sexual intercourse

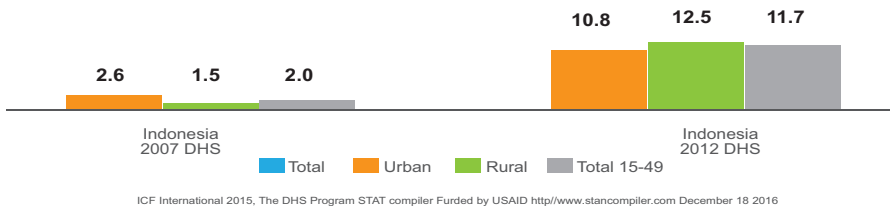


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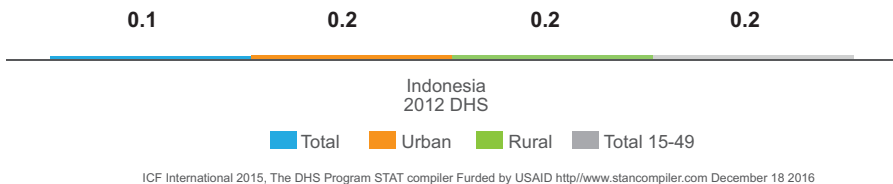
As it has been stated before, STI are a big risk factor for HIV transmission. STI has very different symptoms and have very different perception by men and women. In addition, the stigma and personal feelings make very difficult for people to talk about it. Private sector and pharmacies play major role in treating STI and these cases are not notified. Nevertheless, DHS 2012 present an interesting data where almost 11% of women reported to have some discharge or an STI. In the other side, men rarely report to have an STI with only 0.2% confirmed that they have an STI in last 12 months. However, women are not infected with an STI alone, therefore the data regarding men is very unreliable, but the fact that women in the general population present such high level of STI is a risk factor for HIV transmission.

**Graph 5: women and men reporting an STI**

Percentage of women reporting an STI, genital discharge, or a sore or ulcer



**Percentage of men reporting an STI**

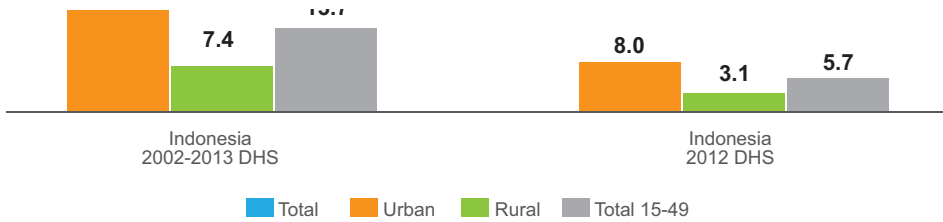


The first pillar in the cascade of prevention is the knowledge of HIV testing, and for that, people should know where they can go to undertake an HIV test, and. This knowledge is very low in both women and men according to the 20012 DHS, about 6%, and it seems to have decreased since the last survey in 2003 where both have more than double values. In summary, most people among general population does not know where to get an HIV test.



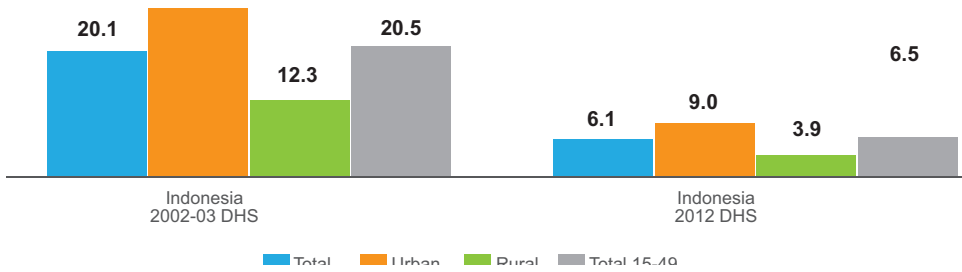
**Graph 6: percentage of men and women that knows where to get an HIV test**

Percentage of women who know where to get an HIV test



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Percentage of men who know where to get an HIV test



The following section presents all the data presented and available in December 2016 that has been collected by the HIV second-generation surveillance system.

### AIDS cases reporting

AIDS case reporting system exists in Indonesia since long time, is a passive system and recently with the set up SIHA, AIDS reporting has been collected in more regular basis in the health facilities that have SIHA.

**Table 7: AIDS Reported Cases in Indonesia, 2011-2016**

Year	AIDS casec reported
2011	8.279
2012	10.862
2013	11.741
2014	7.963
2015	7.185
2016	3.679

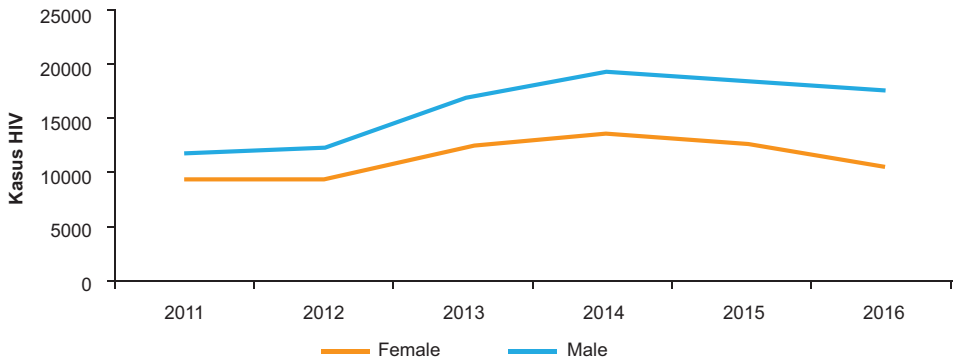
Source: AIDS case report from SIHA database,  
MoH 3<sup>rd</sup> Quarter 2016

There seems to be decreasing trends since 2013 in the number of people reported to have AIDS, in the provinces and health services that have SIHA system, but it seems to stabilise in the last 3 years with about seven thousand cases reported.

### HIV cases reporting

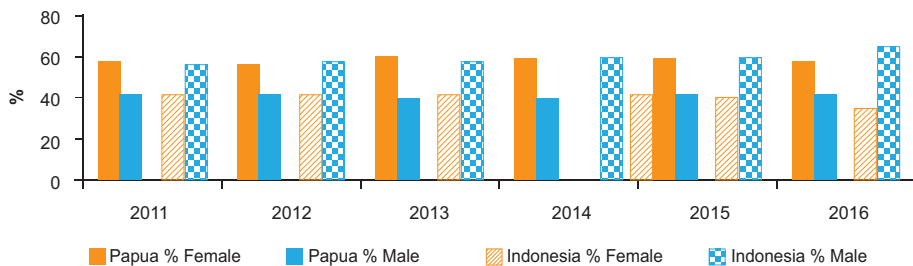
The analysis of HIV case surveillance shows clearly that the male to female ratio in Indonesia has significant differences and levels. Whereas in the rest of Indonesia, where most of population lives, there are more men being infected than women with an F/M ratio of 0.7 whereas in Papua the ratio is, opposite with more women infected than men and the ratio is 1.3 F/M. As presented in the graphs 7 and 8 below most of people reported HIV infected were men but almost 60% of HIV cases reported in Papua were female versus 37% in the rest of the country

**Graph 7: HIV case reported by gender**



Source: HTC report from SIHA database, MoH 3<sup>rd</sup> Quarter 2016

**Graph 8: Papua and Rest of Indonesia: Percentage of HIV Case distribution by gender**



Source: HTC report from SIHA database, MoH 3<sup>rd</sup> Quarter 2016

In addition, some genotype studies have looked at the subtypes in Indonesia. In 2011 among the reported cases in Papua a study showed that 65% subjects with HIV subtype B and 33% non B (<https://f1000research.com/posters/1097801>). Other studies in Indonesia showed that among 175 individuals recruited to a study in Bali found that there were four subtypes to exist in the population: CRF01\_AE (88.9%), B (9.3%), C (0.9%) and G (0.9%). Of these all individuals, 65 (60%) were IDUs, and the remaining 40% were FSWs, MSM, and transgender individuals, people with multiple sexual partners or those with no obvious risk factor. CRF01\_AE was found to be more common among IDUs with 100% of individuals infected with this subtype. Subtype B was more common among MSM and CSWs. Phylogenetic analysis revealed a lack of viral segregation between risk groups. <https://www.ncbi.nlm.nih.gov/pubmed/22958472>. All of this confirms the fact that the epidemic in Papua has possible different origin and different dynamics as well. Table 8 presents the specific geographical areas with the highest rates of HIV notification.

**Table 8: The reporting HIV cases in selected districts**

	Jakarta	Bali	Jawa Timur	Kalimantan Barat	Papua	Maluku
<b>Trend of reported number of HIV cases:</b>						
- 2011	4.102	1.557	2.715	499	2.850	440
- 2012	3.926	1.737	2.912	465	3.028	295
- 2013	5.865	1.690	3.391	525	3.974	236
- 2014	5.851	2.129	4.508	699	3.278	414
- 2015	4.695	2.028	4.155	456	3.494	409
- 2016	4.402	1.726	4.063	351	2.591	394
<b>Rasio of HIV cases among men and women</b>						
- 2011	4 : 1	1,7 : 1	1,1 : 1	2 : 1	1 : 1,3	1 : 1,5
- 2012	3 : 1	1,3 : 1	1,1 : 1	2 : 1	1 : 1,2	1 : 1,4
- 2013	2,2 : 1	1,4 : 1	1,1 : 1	2,1 : 1	1 : 1,5	1,4 : 1
- 2014	2,4 : 1	1,5 : 1	1,1 : 1	1,6 : 1	1 : 1,3	1,2 : 1
- 2015	2,6 : 1	1,5 : 1	1,3 : 1	1,5 : 1	1 : 1,3	1 : 1
- 2016	3,3 : 1	1,5 : 1	1,2 : 1	2 : 1	0,8 : 1	1,1 : 1
<b>HIV cases based on age (2 main groups, 2015)</b>	20-24 25-49	20-29 30-39	20-24 25-49	15-19 20-24	25-49 20-24	20-24 25-49
<b>HIV cases based on transmission (2 main transmission, trend 2015)</b>	MSM (34%), Client of FSW and Partner of KP (29%)	Heterosexual (76%), MSM (20%)	Partner of KP (28%), Client of FSW (20.3%), MSM >>	Heterosexual (50%), Client of FSW (20%)	Mostly heteroseksual	Mostly heteroseksual
<b>HIV cases by districts (3 main cities, 2015)</b>	Jakarta Pusat Jakarta Timur Jakarta Barat	Denpasar Badung Buleleng	Surabaya Jember Banyuwangi	Pontianak Singkawang Sintang	Jayawijaya Mimika Kota Jayapura	Ambon Maluku Tenggara Kepulauan Aru

Source: HTC report from SIHA database, MoH 3<sup>rd</sup> Quarter 2016

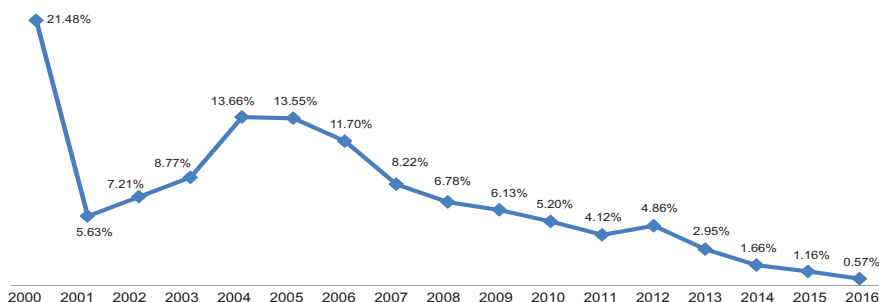
In the last few years, Indonesia has developed a database called SIHA that has potential as robust clinical tool as well as to monitor PLHIV cases. The SIHA system is available in all provinces but not all the health services and is accessed by local public health officials. However, the review team identified a number of important gaps, particularly in its ability to facilitate data analysis:

- Key PLHIV characteristics missing
  - Type and place of PLHIV referral
  - Permanent residence versus location PLHIV was identified
- Key outputs are not possible
  - Average CD4 count by year
  - Time from registration to ART initiation
- No link to VCT or prevention data

## Morbidity and mortality of reported HIV cases

Mortality recorded from AIDS reported cases and from the ART services. From the AIDS surveillance report, the proportion of death among AIDS cases is decreasing over time as seen in the below graph. However, the AIDS cases are reported from the passive surveillance which have been under-reported and considered the weakest component of HIV surveillance because AIDS cases represent the old infections and do not shed much light on current incidence and prevalence.

**Graph 9: trends the proportion of deaths attributed to AIDS, Indonesia 2000-2016**



Source: AIDS surveillance report from SIHA database, MoH 3<sup>rd</sup> Quarter 2016

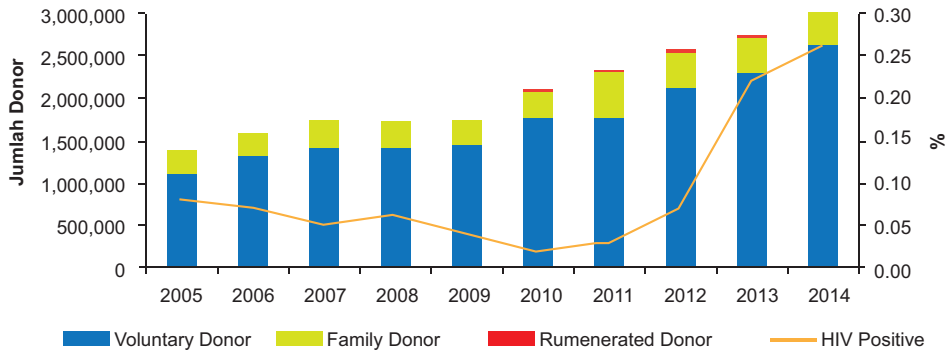
## Blood donors screening for HIV, as proxies of general population

In 2004 a paper, Sedyaningsih-Mamahit, in multiple country analysis suggested that blood donors are usually not a good proxy for the general population in generalized epidemics as underestimated the level of prevalence. They found that only 'true' family/ replacement donors, in selected situations and conditions, might reasonably approximate HIV prevalence in the adult population. These donors are in most cases adults with no specific HIV risk behaviour. (Sedyaningsih-Mamahit E AIDS. 2004 Sep 3;18(13):1849-51.

There is a national policy in blood donations and all the blood donors should be tested for HIV, HBV and HVC. Blood donation is voluntary and should not be paid. The screening is with one HIV rapid test and if positive the donor is referred to a VCT clinic.

Supporting the data for determines the level of HIV epidemic among the general population, data of HIV among the blood donor is provided by the Indonesian Red Cross. However, NAP does not collect in a regular basis. Graph 10 shows the trend of HIV positive result in the blood donor from year 2005 to 2014 nationally and in Jakarta. Both data are in accordance to show the trend of stable HIV trend during 2008 to 2012 and then rapidly increase since then. Even though, the HIV prevalence is still below 1%. It can be seen that the number of new infections among blood donors started at least in mid 2000s. Was that because the introduction of new paid blood donors paid like PWID? on the other hand, a natural dissemination of HIV infection among general population? it is difficult to determine without information in the blood donors.

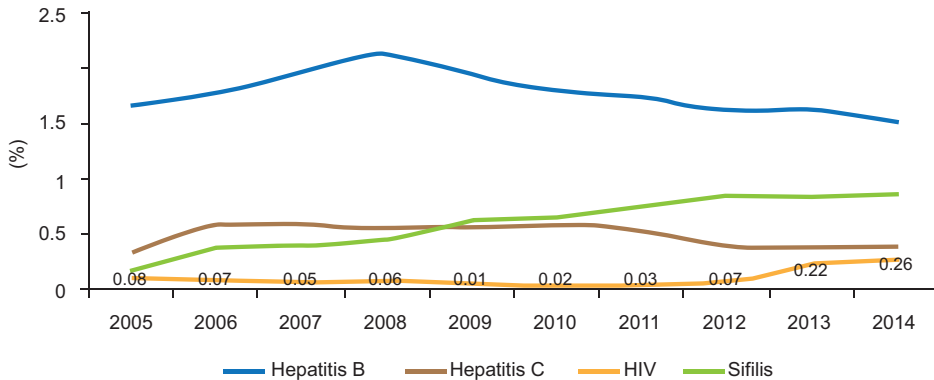
**Graph 10: HIV positive test among blood donations**



Source: Indonesia Red Cross report, 2014

In addition to the above, data provided by the Indonesia Red Cross regarding other infections are presented in graph 11 with trends on syphilis, Hepatitis B and C. HIV prevalence is keep increasing even though it is still below 1% as well as syphilis. In the other hand HVC and HVB has been slightly decreasing.

**Graph 11: National trends in transmitted blood infections: HIV, Syphilis, HVC and HVB**



Source: Indonesia Red Cross report, 2014

Donor recruitment programs have been directed toward 100% of Voluntary Non Remunerated Blood Donor (VNRD), which now have reached 81.3%. Dissemination of information on VNRD, donor recruiter's training and VNRD appreciation programs are strategies to increase and maintain the VNRD. Limited female donors and insufficient blood supply during the fasting month and holidays constitute major challenges (Soedarmono YS, 2010 Jan;38(1):43-6. doi: 10.1016/j.biologicals.2010.02.001). However, there have

been reports in the press that blood donations are paid in many cases and depending on the type of blood, the cost can be higher, <http://news.asiaone.com/news/asia/paid-donors-burgeon-supplies-run-low-indonesia>. However, Red Cross information reported that blood donation in Indonesia can be classified as three types, are voluntary donor (86,2%), family donor (13.5%) and paid donor (0.23%) according to the red Cross.

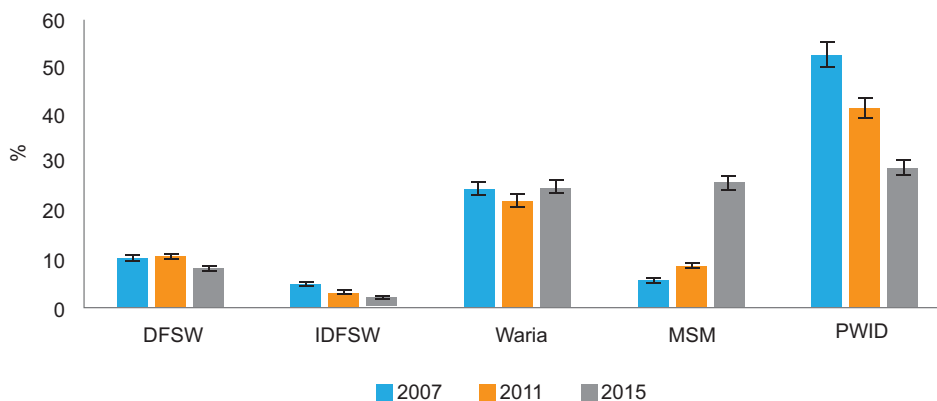
Blood donations, in spite of its limitations (one single test that need to be confirmed, repeated blood donors in the same year, bias towards sex in some countries). However, is a routine data collected that is useful to have as it represents HIV burden among low risk population and it can help to detect outbreaks in some cases, if is regularly monitored. However, understanding who are the donors and if the policies are in place are essential to understand the value of the information and its trends.

### HIV surveillance data results among KP

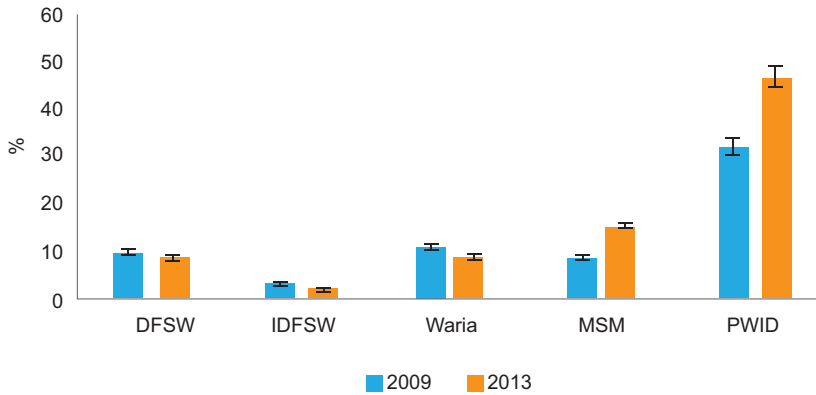
The following graphs and tables presents the overall results of available data for HIV prevalence among KP in the last years using IBBS Group A and Group B. It shows clearly that the levels of HIV prevalence among KP remain well above 5%, with a significant increase among MSM and declining among PWID in group A conducted surveys. In addition, co factors like STI that increase the risk of HIV transmission are also particularly high among all KP in both groups A and B survey sites as presented in tables 9 and 10.

#### Key Population

**Graph 12: Trends in HIV prevalence among KP, IBBS Group A in 2007-2015**



**Graph 13: Trends in HIV prevalence among KP, IBBS Group B in 2009-2013**



**Table 9: HIV and STI prevalence in Key Populations, IBBS Group A in 2011-2015**

Prevalence Rate (%)	DFSW			IDFSW			Waria			MSM			PWID		
	2007	2011	2015	2007	2011	2015	2007	2011	2015	2007	2011	2015	2007	2011	2015
HIV	10	10,4	7,97	5	2,9	2,2	24	21,9	24,8	5,2	8,5	25,8	52	41,2	28,8
Syphilis	15	10,2	6,5	6	3,1	2,2	27	25,3	17,4	4,3	9,3	15,7	1,2	2,1	1,5
Chlamydia	35	40,7	32,3	29	40,6	30,3	30	28,3	16,8	23,7	20,5	18,5	5,6	-	-
Gonorrhoea	32	37,8	21,2	14	18,7	9,7	29	28,8	12,2	19,6	20,8	12,7	0,8	-	-

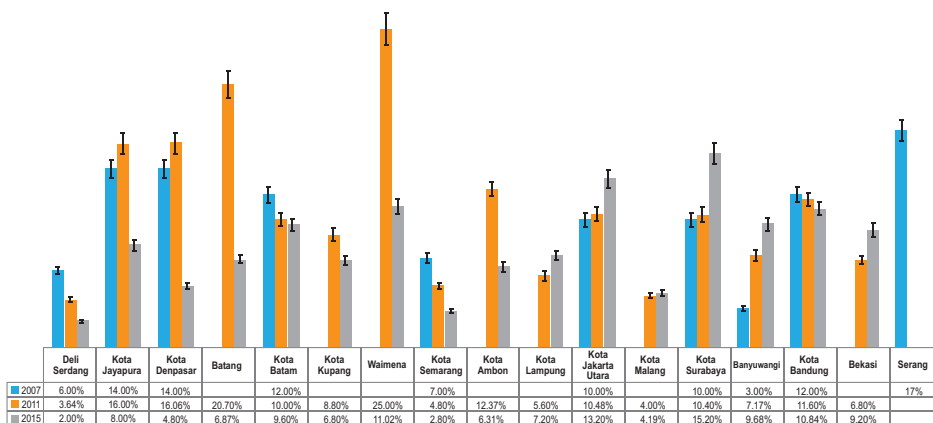
**10: HIV and STI prevalence in Key Populations, IBBS Group B in 2009-2013**

Prevalence Rate (%)	DFSW		IDFSW		Waria		MSM		PWID	
	2009	2013	2009	2013	2009	2013	2009	2013	2009	2013
HIV	8,0	7,2	2,6	1,6	9,2	7,4	7,0	12,8	27,0	39,5
Syphilis	6,3	4,0	3,0	1,8	12,0	9,7	8,0	11,3	1,0	2,9
Chlamydia	42,4	40,0	39,5	30,8	34,0	19,8	17,0	23,0	-	-
Gonorrhoea	34,8	32,2	21,8	17,7	29,0	19,4	17,0	21,2	-	-

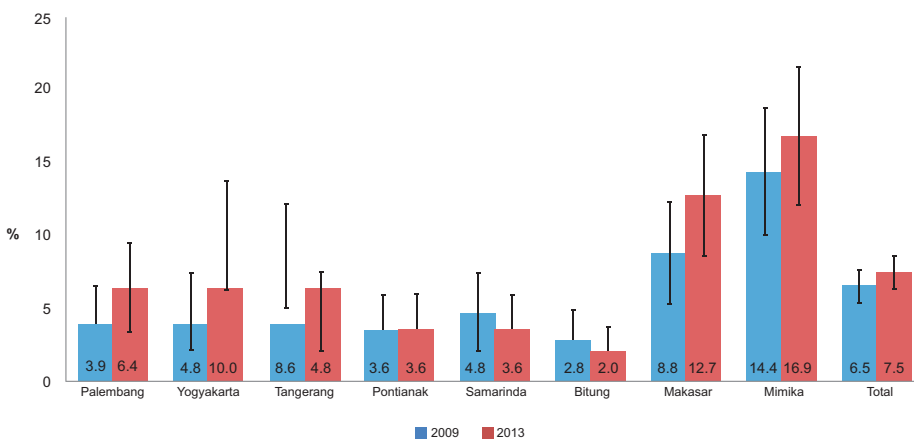


Direct Female sex workers

Graph 14: trends in HIV prevalence among DFSW, IBBS Group A in 2007-2015

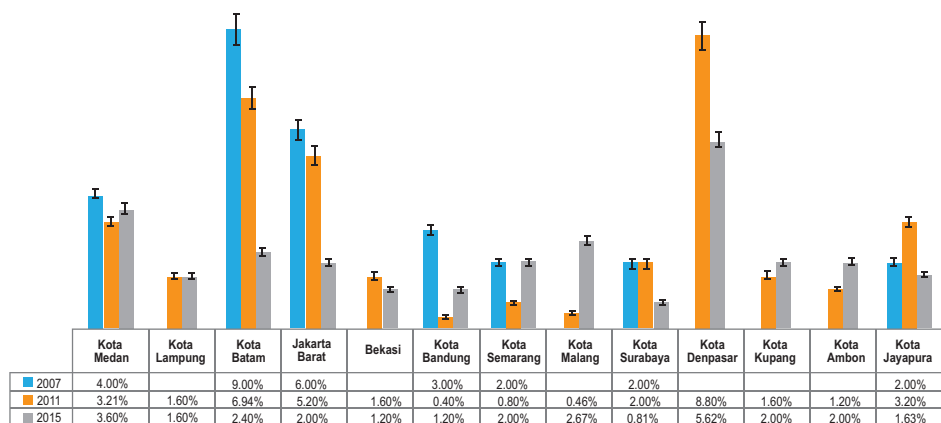


Graph 15: trends in HIV prevalence among DFSW, IBBS Group B in 2009-2013

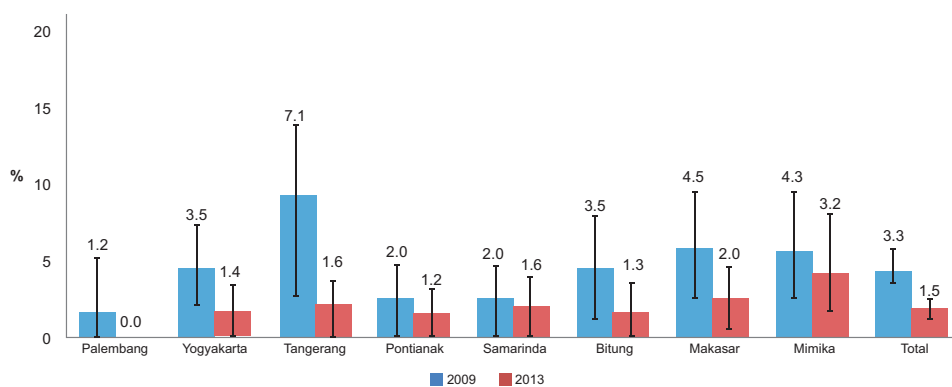


Indirect Female sex workers

Graph 16: trends in HIV prevalence among IDFSW, IBBS Group A in 2007-2015

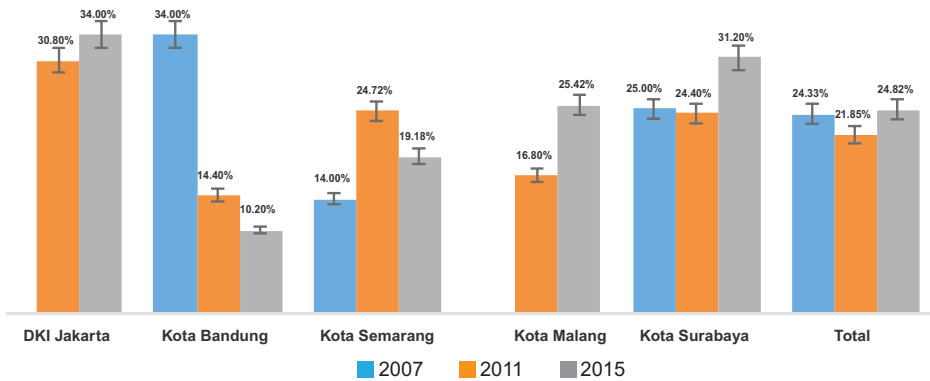


Graph 17: trends in HIV prevalence among IDFSW, IBBS Group B in 2009-2013

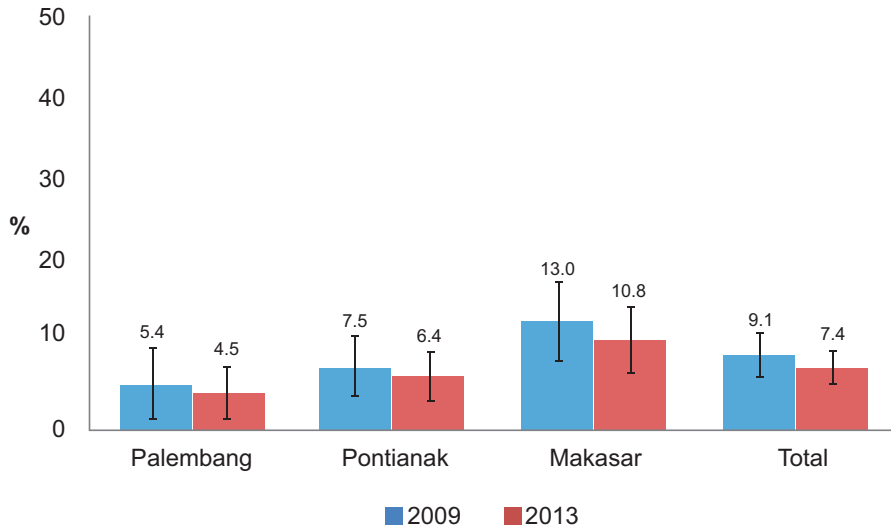


Waria

Graph 18: Trends in HIV prevalence among Waria, IBBS Group A in 2007-2015

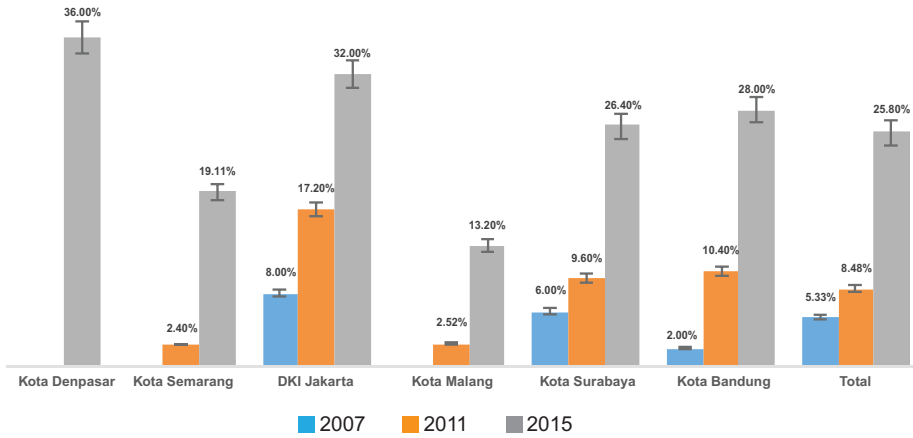


Graph 19: Trends in HIV prevalence among Waria, IBBS Group B, 2009-2013

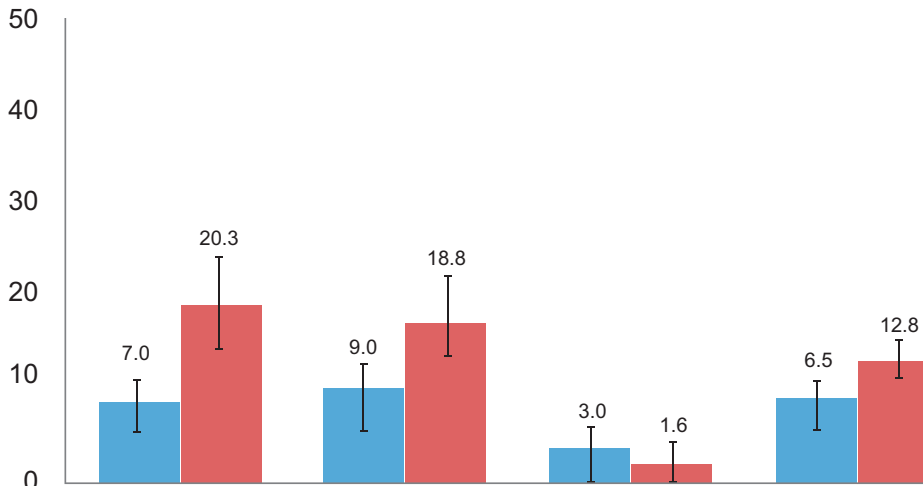


Men who have sex with men

**Graph 20: Trends in HIV prevalence among MSM, IBBS Group A in 2007-2015**

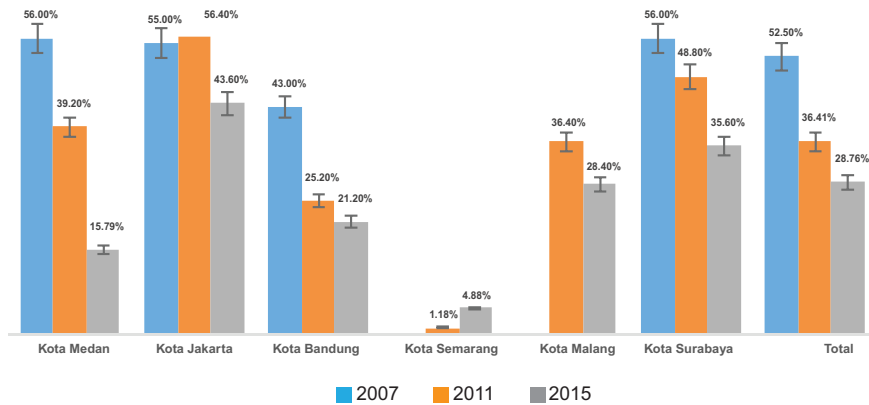


**Graph 21: Trends in HIV prevalence among MSM, IBBS Group B in 2009-2013**

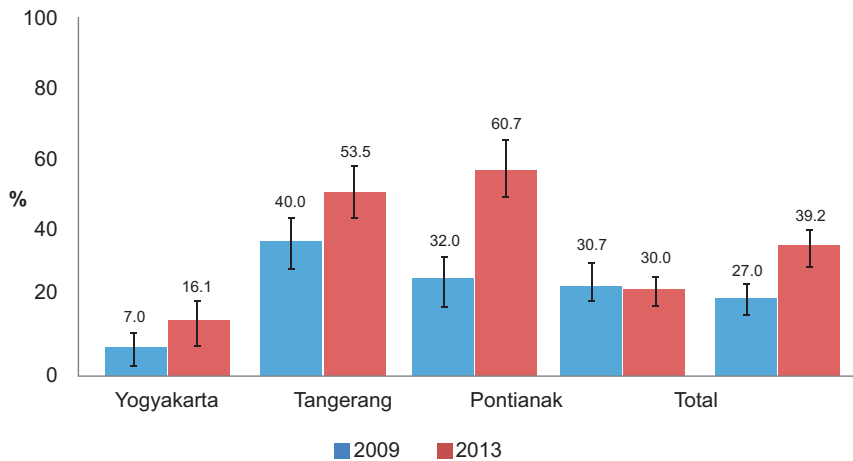


People who inject drugs

Graph 22: trends in HIV prevalence among PWID, IBBS Group A in 2007-2015

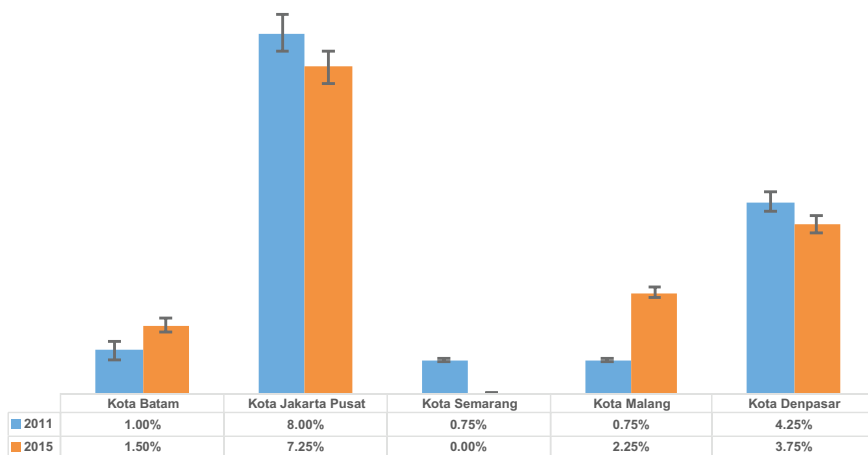


Graph 23: trends in HIV prevalence among PWID, IBBS Group B in 2009-2013

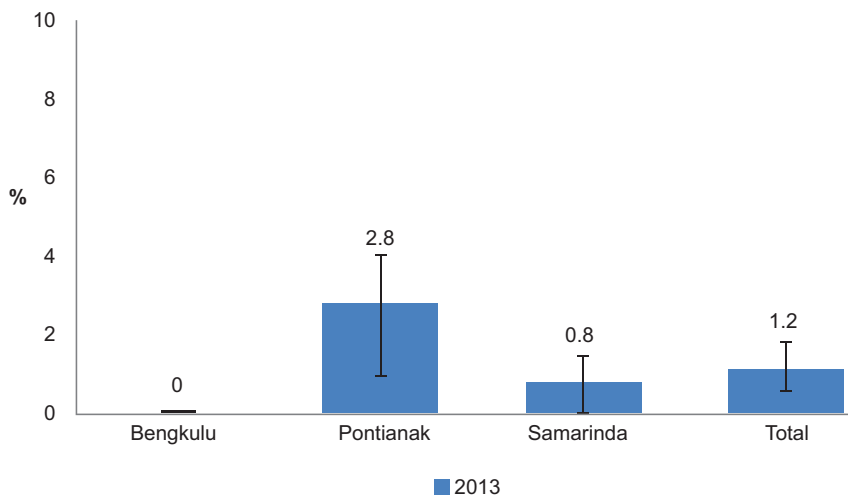


Prisoners

**Graph 24: HIV prevalence among Prisoners, IBBS Group A in 2011-2015**



**Graph 25: HIV prevalence among Prisoners, IBBS Group B in 2013**



Although there is not enough information to provide trends among people incarcerated, since the interventions in some prisons were put in place, there has been some IBBS conducted in some provinces. In general, HIV prevalence is well below the prevalence among the others KP, and the highest rates were reported in DK Jakarta.

Taking into account the overall information about KP and the available trends (as mobility of KP can affect trends) from three rounds IBBS, the overall situation in Indonesia is presented in **table 11**.

**Table 11: The following table presents the summary result of available trends by province and KP which implemented three rounds IBBS**

Key Population	Decreasing Trends	Stable Trends	Increasing Trends
DFSW	Deli Serdang Semarang	Bandung	Jakarta Utara Banyuwangi Surabaya
IDFSW	Batam Jakarta Barat	Medan	
Waria	Bandung		Surabaya
MSM			Jakarta Surabaya Bandung
PWID	Medan Jakarta Bandung Surabaya		
Prisoners	Jakarta Pusat	Denpasar Batam	Kota Malang

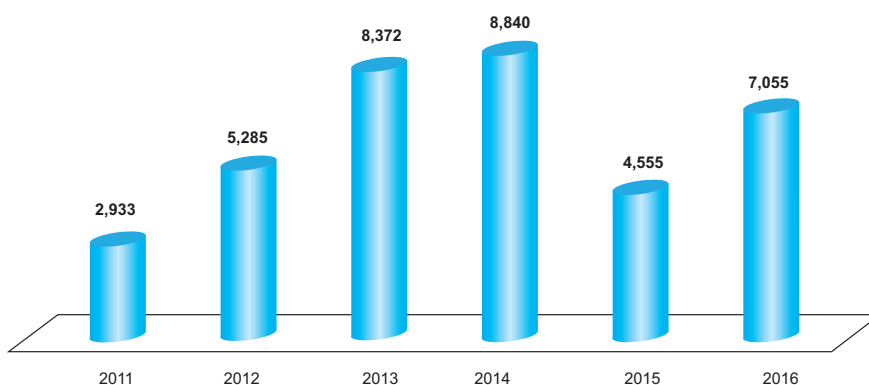
## Prevalence of STIs

STI are a proxy of unprotected sex among people, either general or KP. Furthermore, it has been well established that the presence of STI in sex partners increases significantly the rate of HIV transmission among sex partners and especially in the case of presence of Chlamydia or Gonorrhoea. It is clearly a risk factor for HIV transmission. STI has also other secondary effects besides HIV transmission and STI should be prevented and treated as a good measure of Public Health. Indonesia collects data on STI based on syndrome approach and laboratory diagnosis. In a recent study, it was found that elevated inflammation in the female genital tract is associated with increased HIV risk. In a prospective cohort of young, healthy South African women, it was found that individuals with diverse genital bacterial communities dominated by anaerobes other than

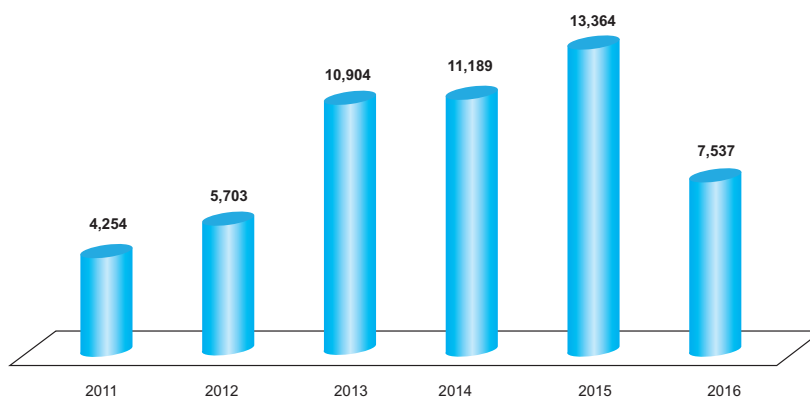
Gardnerella were at over 4-fold higher risk of acquiring HIV and had increased numbers of activated mucosal CD4+ ([http://www.cell.com/immunity/fulltext/S1074-7613\(16\)30519](http://www.cell.com/immunity/fulltext/S1074-7613(16)30519)).

The reporting routine system is based in syndromic approach and laboratory diagnosis. Overall, the number on STI reported in the country has been increasing for all STIs with some more stable numbers in 2014 and 2015, as data for 2016 is still incomplete. It seems more likely that this increase trends are based in improving reporting system. If we look at the trends in women in between 2011 and 2016 the number of women reported cases with vaginal discharge was 79,268, cases. According to the DHS 10% of women reported to have some symptoms related to STI, (some kind of discharge, that are not necessarily always an STI) this would have been represented a much higher number if all the cases would have been reported. The self-medication and private sector play a major role in this lack of notification by health services. Nevertheless, the trends seem to be increasing last five years.

**Graph 26: Reported syphilis cases, Indonesia 2011-2016**

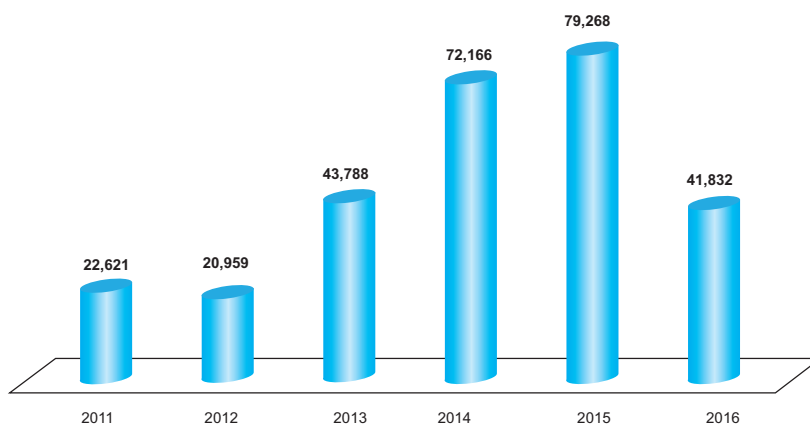


**Graph 27: Reported cases of urethral discharge, Indonesia 2011-2016**

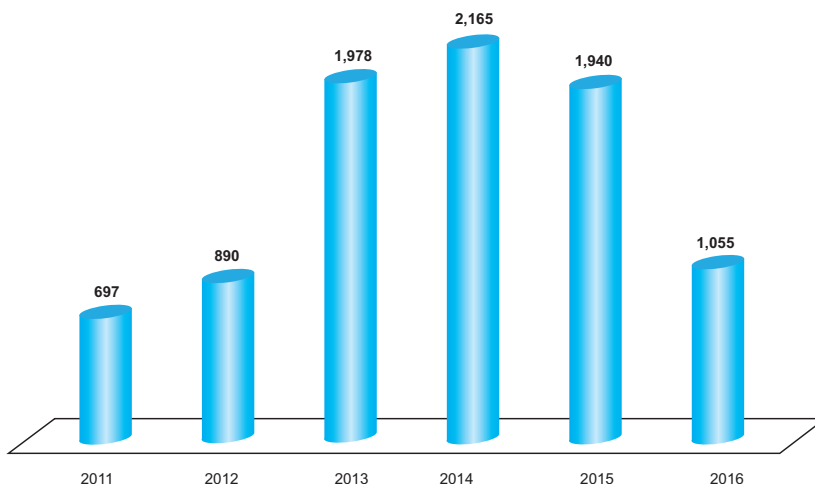




**Graph 28: Reported cases of vaginal discharge 2011-2016**



**Graph 29: Reported cases of genital ulcer 2011-2016**



### Transmission Dynamics

When compared the different surveillance data between KP and different locations between 2007 and 2015, a clear pattern arises. In the case of PWID that have been a big contributor to HIV epidemic in the country in some districts, it seems that there is a clear decrease in the level of prevalence especially in Medan, Jakarta, Bandung and Surabaya. This could be explained by interventions, if coverage of NEP and OST are in place or by higher mortality among this population and the turnover of population with less number of PWID. Nevertheless, the median value of HIV prevalence among PWID is very high with close to 30% of HIV infection.

In the other hand the prevalence levels of HIV among MSM continue to rise in the main big cities in Indonesia (Medan, Jakarta, Bandung, and Surabaya) with levels above 20%. Although in other cities the prevalence levels are lower, there is also an increasing significant trend. However, in the other hand the proportion of MSM those are using injecting drugs dropped from 5% to 0% in Jakarta between 2011 and 2015.

Equally high are the levels of HIV infections among Waria, with value above 20% in some cities and other with lower prevalence of infections but well above 5% levels. Whereas in some cities the trends are clearly downward like Bandung, in others are stable at levels of 20%.

More variation is still found in the prevalence trends of FSW. In some cities are clearly declining like in Deli Serdang, Batam, Semarang and Jakarta Barat and are below 5%. But in other cities like Jakarta Utara, Banyuwangi, Surabaya are on the rise. Direct female sex workers as expected have higher prevalence rates those indirect female sex workers. The turnover and mobility of this population needs to be taken into account, and careful analysis of the IBBS and HSS needs to be done to understand the trends.

Selected provinces (Table 11) are taken to be reviewed as representative for Indonesia situation, including provinces that have high HIV prevalence with high response (Jakarta, East Java, and Bali), provinces with high HIV prevalence and relatively low response (Papua, West Kalimantan), and provinces with low HIV prevalence and relatively less response (Maluku).

Among all provinces other than Papua, show that HIV epidemic still concentrated among the key population. The prevalence of HIV cases in the selected provinces is increasing (2011-2015), where sexual transmission (heterosexual and MSM) become major route of HIV transmission. The percent of HIV increase, the KP role in HIV transmission, and the maturity of the epidemic are varied among provinces. In Papua, the HIV epidemic is in the general population in low level, with heterosexual transmission as major route of transmission.

The surveillance data shows that the HIV prevalence in all provinces among KPs other than in Papua is vary in size and trend. Prevalence of HIV among DFSW is ranging from 8% to 10%, while prevalence of IDFSW is lower (below 5%); and among the waria is higher than DFSW (more than 25%). The HIV trend over five years among them is relatively stable. The prevalence of MSM is ranging between 5% to 25% and show consistent increasing trend in 2011 to 2015. While HIV prevalence among PWID is ranging at around 27% and 52% and shows decreasing trend for 5 years. In some provinces HIV prevalence among FSWs are much higher (2-3 times) than syphilis prevalence, reflected the maturity variation of the HIV epidemic among provinces. Outside the KP, the surveillance data among pregnant women show HIV prevalence below 1% (0% – 0.7%) which is consistent with data of PMTCT program (0.1% – 0.8%). HIV reported cases among male is consistently 1.1 to 4 times higher than female. In pregnant women, the HIV and STI syphilis prevalence are relatively comparable, reflected that the HIV epidemic still in the early stage.

The PMTCT data showed the proportion of HIV positive among pregnant mother has exceed 1% (1.35%), which is consistent with the IBBS among the general population (2.3%). Over five years (2011-2015) the ratio of HIV cases among male and female are 1:1.2-1.5, means female is more affected with HIV infection than male.

Regarding STI, most of KP is tested for syphilis. The syphilis rates are the highest among Waria and MSM, 17.4% and 15.7% respectively, and more moderate and lower among female sex workers, who present clear declining trends (6.5%) and PWID (1,5%).

The use of condoms among KP remains of the main cost efficient prevention measures to slow down and to stop new HIV epidemic and infections. Among MSM the use of condom has not change substantially in the last two IBSS 2011 and 2015. Although Denpasar reported condom use in the magnitude of 62%, is lower in the other cities like Semarang where does not reach 50%. Along the same trends FSW reported relatively low condom use and even decline in places like Semarang and Malang. Only the city of Denpasar reported an increase of condom use among FSW. The number of clients per week for direct sex workers remains stable with an average of four per week, except in Bali where this figure is higher.

Compared with 2011 the data about PWID shows that proportion of sharing needles remain stable in all locations except Semarang, Bandung, and Malang that reported clearly declining sharing and are well below 10% levels.

In summary, the levels, of HIV infection among all KP remain very high, and trends are by the most part stable with some declining among FSW, the condom use is relatively low in most of them, only in some cases reaching levels of 70%. There are in most population's high level of syphilis as marker for an STI and therefore increase risk of HIV transmission.

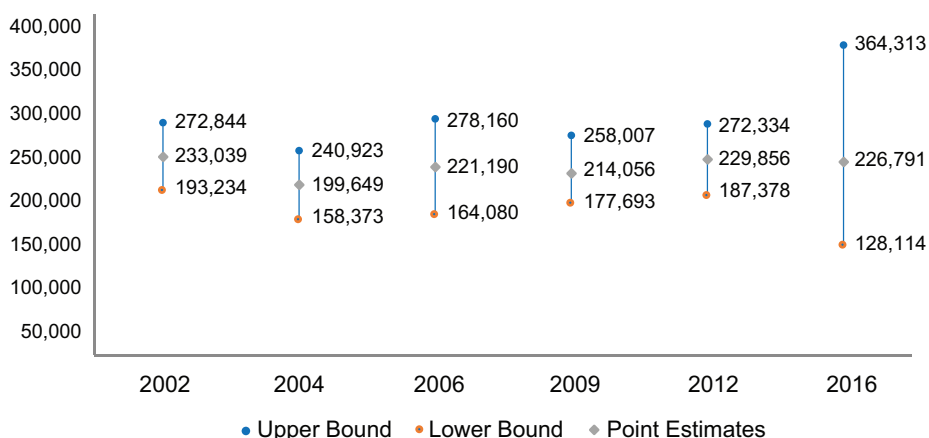
## Size estimations for Key Populations

Indonesia was one of the first countries to start estimating the size of key populations since 2002. In fact, UNAIDS published as best practice the case of Indonesia with the first estimates done in 2002. Since then the population size estimates (PSE) methods and results have been updated and improved on a regular basis. Indonesia uses a multivariable regression model to extrapolate estimates based on mapping conducted at locations (“venues”) frequented by KPs in selected districts to other districts where mapping had not been conducted, several adjustments are made to account for KP members who may not have been reflected in the mapping figures. The main data sources, variables and assumptions come from the IBBS. The regression model collects mapping information from about 20% of the districts (514 in total) to make the extrapolation and add up the estimated numbers to provide a provincial and national numbers. Then those are added up to estimate the national figures.

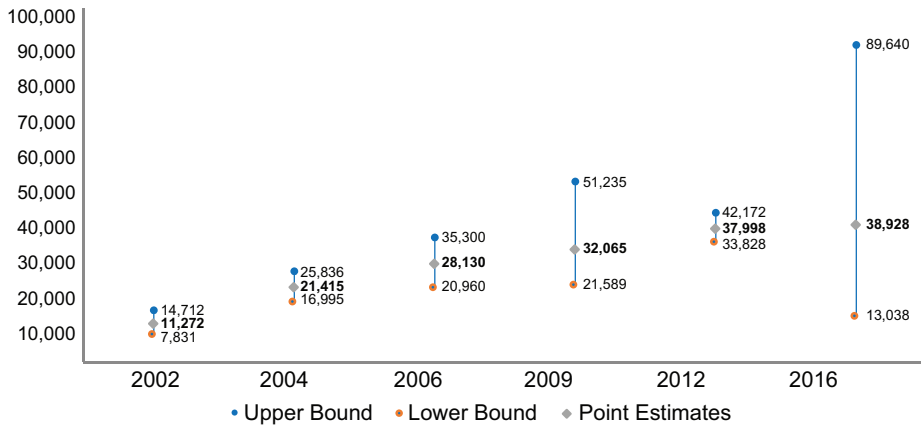
The PSE has been updated in 2016 using the IBBS from 2015. The methods and results are presented in solid technical reports that are prepared by national with support from external consultants from WHO/UNAIDS (ref PSE 2016 report). All these PSE fall between the ranges that is known in the Asian region.

Most of PSE have been within the same range during the last few years except PWID. This is confirming the fact that IBBS teams have been reporting that is more and more difficult to find PWID for undertaking the surveys. It seems that there is a transition in the use of drugs according also to other sources from NGOs. Graph 30-33 present the population estimations sizes and ranges over time for FSW, Waria, MSM and PWID. Table 12 presents the updated values for 2016.

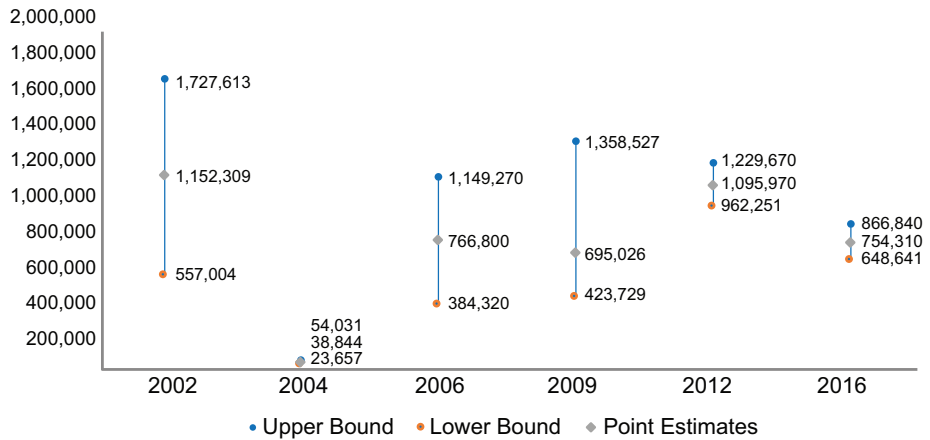
**Graph 30: Estimation of Female Sex Workers, 2002-2016**



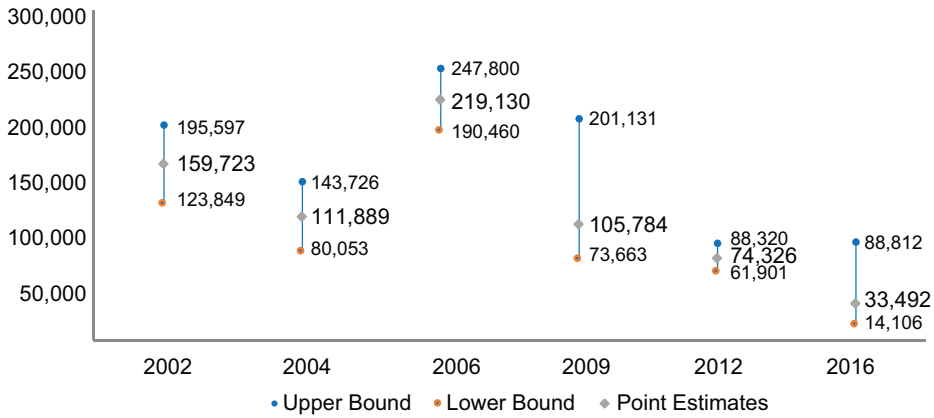
**Graph 31: Estimation of Waria, 2002-2016**



**Graph 32: Estimation of MSM, 2002-2016**



**Graph 33: Estimation of PWID, 2002-2016**



**Table 12: Estimated sizes for KP in 2016**

Population	Lower Bound	Point	Upper Bound
FSW	128.114	<b>226.791</b>	364.313
MSM	648.641	<b>754.310</b>	866.840
Waria	13.038	<b>38.928</b>	89.640
PWID	14.016	<b>33.492</b>	88.812
Client FSW	4.415.776	<b>5.254.065</b>	6.159.431
Client Waria	327.596	<b>350.119</b>	375.236

Source: Estimation of HIV key population 2016, MoH 2017

The PSE it could be refined if more data and variables are collected from other districts and areas. PSE are important at local level for planning interventions. Therefore, although at national level are important for estimations and projections and global planning, efforts should be addressed in the province with higher prevalence levels and using programmatic mapping tools that will improve where interventions should be located.

As many countries in Asia and globally internet and social media are very important these days, therefore it will be suitable if there is some exploration and research in estimating the apps and number of user of these ads, in order to plan some intervention in the communities using internet.

## Epidemic Estimation and Projections

The estimated national adult HIV prevalence in 2015 was 0,3% (among 15-49 years old). Graph 34 presents the projections for HIV prevalence and number of PLHIV. While the epidemic has kept at a low level, projections indicate a modest but steady rise until 2010 and more stable numbers about 49,000 new infections per year.

Indonesia uses the AIDS Epidemic Model (AEM) and Spectrum package recommended by UNAIDS, and WHO. UNAIDS conduct regular updates on the estimation tools revising the assumptions and some of the parameters used in AEM and Spectrum when new evidence is available. The last updated and training was organized in 2015 in Bangkok for which Indonesia attended with their latest estimates. The basic methods used are based in estimating the proportion of the population to be at risk of HIV infection (MSM, FSW, Waria and PWID) and the prevalence levels for HIV infection of those populations. AEM also uses behavioural data (condom use, number of partners, etc.) to adjust the epidemic curve and the level of infection by population category. AEM produces as well the number of new HIV infections. The incidence curve produced then by AEM is inputted into Spectrum package to produce the set of standard impact indicator taking into account the number of people on ART and PMTCT.

There were an estimated 613,435 persons living with HIV (PLHIV) in Indonesia in 2015. As in other Asia-Pacific countries, HIV & AIDS in Indonesia remains concentrated in sub-populations exposed to elevate risk of HIV transmission due to their behaviours. These people are commonly referred to as “Key Populations” (KPs), and include sex workers and their clients, persons who inject drug (PWID), men who have sex with men (MSM) and transgendered persons (Waria). Tanah Papua is an exception to the regional norm, with an estimated HIV prevalence of 2.3% in general population in 2013.

The national HIV prevalence rate among people aged 15 years and above was estimated to be 0.33% in 2015. Provincial estimates of HIV prevalence range from 0.1% to over 2.0%. The absolute numbers of PLHIV are highest in Jakarta and in the highly populated provinces of Java, as well as in Papua and West Papua. Although driven in earlier years by needle sharing among PWID, sexual transmission is now the primary mode of transmission of HIV.

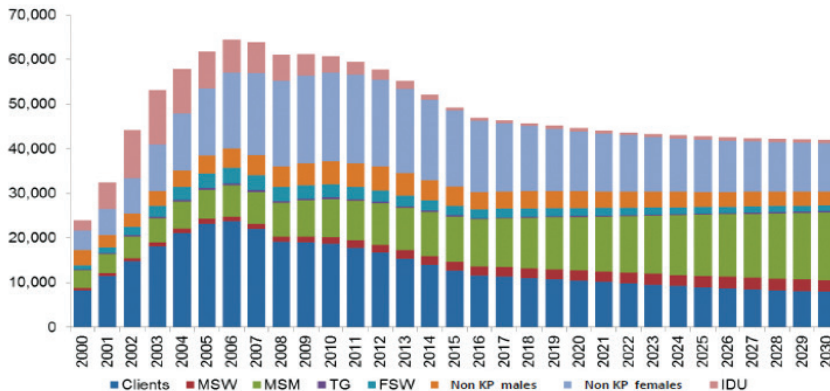
**Table 13: Summary of HIV estimates 2015**

Number of PLHIV	613.435
Number of New HIV Infection	49.199
Number of HIV - related deaths	36.936
HIV prevalence - general population	0,3%
HIV prevalence - FSW (high risk)	8,0%
HIV prevalence - FSW (lower risk)	2,2%
HIV prevalence - MSM	25,8%
HIV prevalence - Waria	24,8%
HIV prevalence - PWID	28,8%

Source: Estimates and Projection of HIV/AIDS 2015-2020, MoH 2017

Graph 34 shows the proportion of estimated new infections by sexual transmission for 2010 to 2020. The highest proportional increase in new infections is in MSM. An interesting observation is that the proportion of new infections due to sex work remains stable. Clients of sex workers remain an important bridge population.

**Graph 34: new infections estimates and projection 2015-2020**

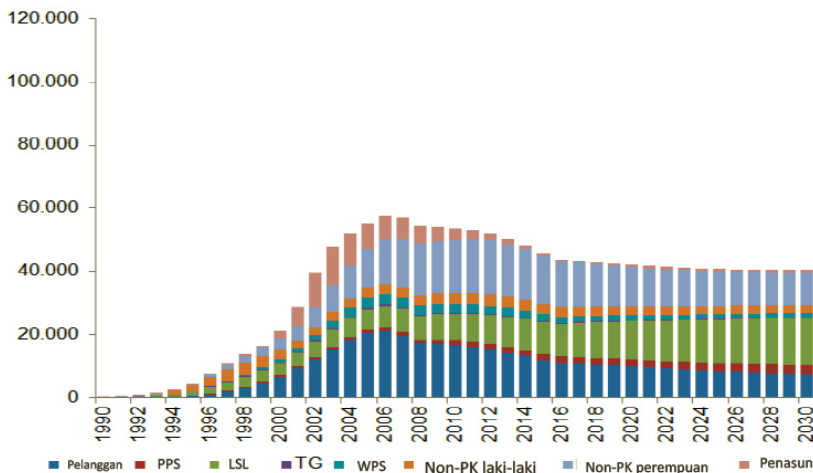


Source: Estimates and Projection of HIV/AIDS 2015-2020, MoH 2017

Graphs 35 and 36 present the new infections in the two distinctive epidemics patterns in Indonesia Papua and Non Papua with higher numbers in Non Papua because the large population differences.

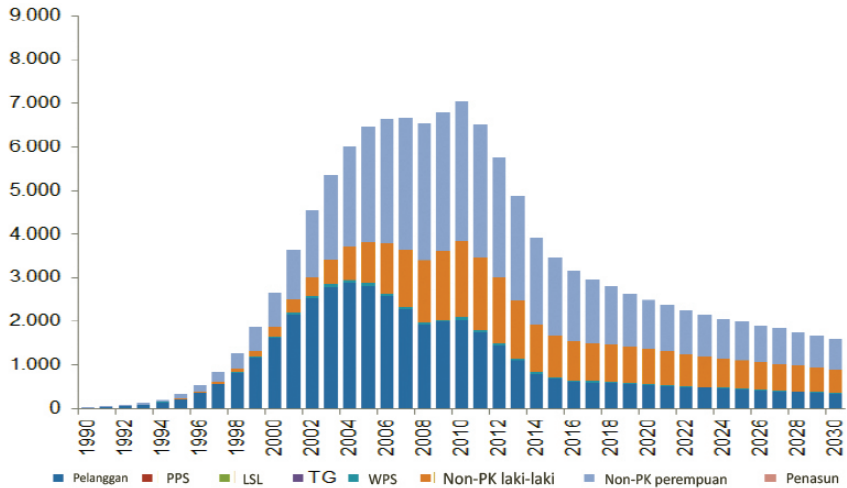
**Graph 35: new infections estimates and projection 2015-2020**

**Non-Papua**





## Papua



Source: Estimates and Projection of HIV/AIDS 2015-2020, MoH 2017

UNAIDS conduct regular updates in the tools used for HIV estimates and projections, with important variations sometimes. Next year UNAIDS will conducting a new training in the revised methods. It incorporates some additional changes in the curve fitting and a validation process where data from countries from HIV case reporting and mortality can be incorporated. Indonesia technical working group in estimates should update the 2016 estimates using the updated tools.

## Prevention Programs

The first pillar on prevention is the access to HIV testing and the number of people that have been diagnosed and they know their status. In DHS there is no information regarding this indicator for the general population. Regarding KP, the IBBS provides some information on the access to HIV testing and below is the table that provides overall trends of KP ever been tested for HIV, even though there is not information if all people had received their results. This indicator is cumulative therefore it would be expected that has very high values, however, the percentage of people tested overall in these KP is relatively low, as only DFSW are above 50%, and only 38% of MSM where the recent trends indicate an increasing HIV infection.

**Table 14: percentage of people among KP ever tested for HIV**

Indicator (%)	IBBS Group A			IBBS Group B	
	2007	2011	2015	2009	2013
Percentage of Direct FSW that ever tested for HIV	53	57	86	54	66
Percentage of Indirect FSW that ever tested for HIV	36	36	72	31	39
Percentage of Waria that ever tested for HIV	64	72	89	45	50
Percentage of MSM that ever tested for HIV	31	39	71	25	38
Percentage of PWID that ever tested for HIV	50	63	72	40	54

Source: IBBS among KPs, MoH

## Continuum of Treatment and Care

Indonesia has done a big progress in providing care and treatment to more and more people on ART, with more than 63,000 people on ART by 2015. However, this progress over the last few years has been slower than expected and overall coverage for ART remains too low.

**Table 15: On ART coverage 2011-2015**

Indicator	2011	2012	2013	2014	2015
ART coverage (adults and children), among eligible adults and children who are currently receiving who are currently receiving reporting period	15,7%	17,4%	19,6%	25,1%	19,2%
Percentage of children (0-14 years) living with HIV who are receiving ART	10,1%	11,2%	9,2%	13,9%	17,4%

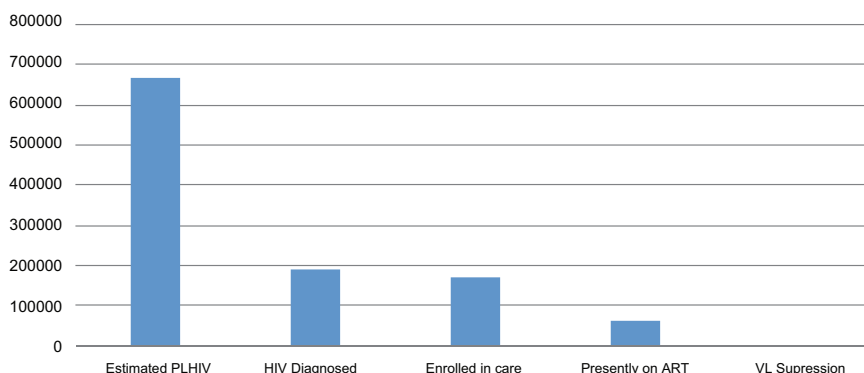
Source: Global AIDS Response Progress Report 2011-2015, UNAIDS

The NAP technical working group has participated in the cascade trainings organized by WHO in 2015 and 2016 and the results can be seen below with the national treatment and two provinces as example of care and treatment cascade. The gaps in the number of people diagnosed and linked to care and on ART are evident at national as well at the provinces of Jakarta and Papua. The viral load suppression data is not available in most provinces thus is not possible to assess the impact of ART programs, in addition there is not clear sources of data for retention and adherence.

**Graph 36 (a, b and c): National treatment cascade and two provinces (Jakarta and Papua)**

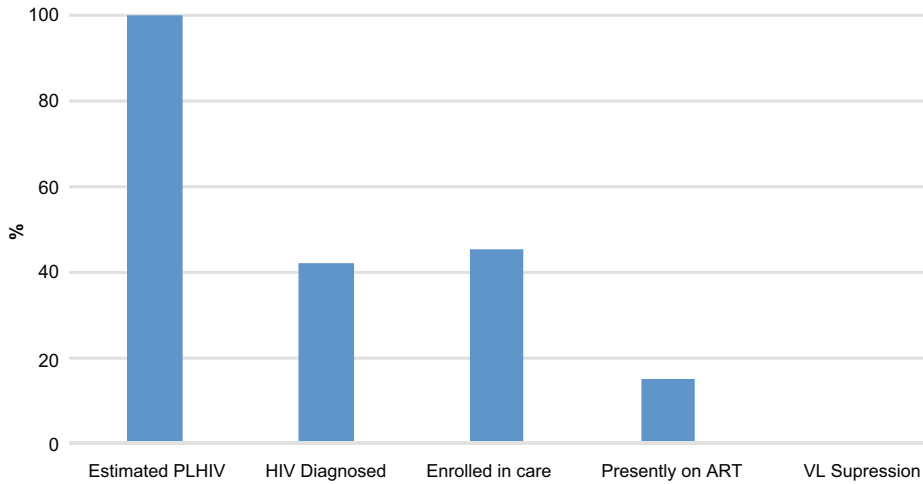
a)

**HIV testing and Care Cascade, Indonesia 2015**



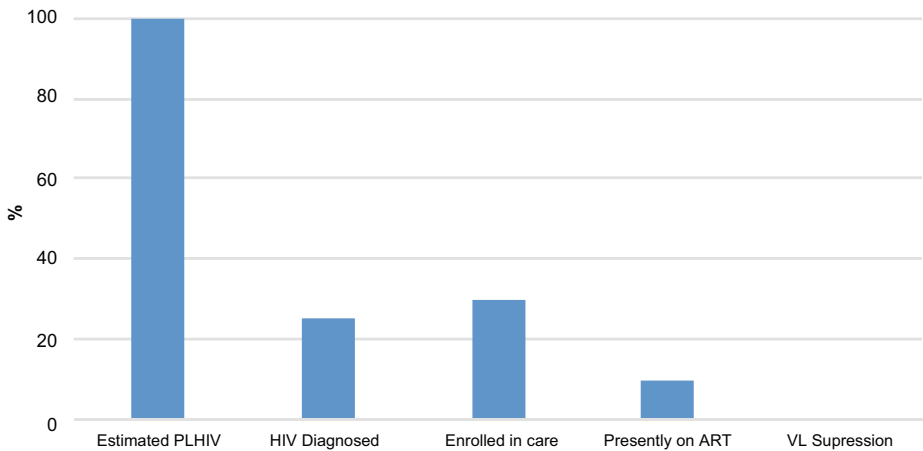
b)

### HIV testing and Care Cascade, Jakarta 2015



c)

### HIV testing and Care Cascade, Papua 2015

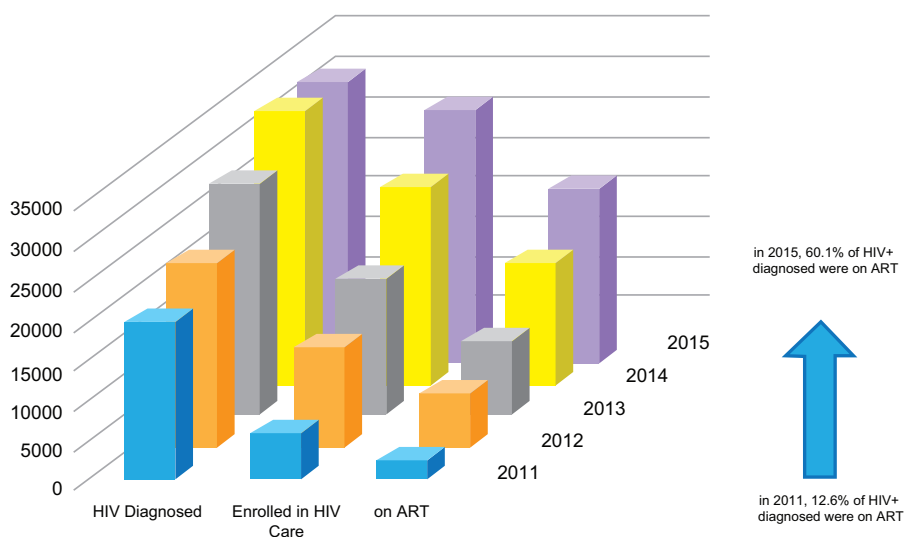


Source: HTC, ART and size estimated reports, MoH 2015

There is a challenge in building a good care and treatment cascade, as at national level is a cross-sectional vision of the HIV response and it may have different sources of data. The national technical working group has undertaken good efforts in understanding the cascade and improve the quality of information, so gaps can be identified and addressed in addition that the results of this exercise of data analysis should be use for programmatic purposes.

When looking at the data of cascade in relation to HIV diagnosed only, 89 % of people diagnosed were enrolled to care and 67% of them were on ART in 2015.

**Graph 37: Care cascade of people HIV diagnosed, comparative analysis 2011-2015**



Source: HTC, ART and size estimated reports, MoH 2015

There is not national data for the cascade of treatment for KP, but some provinces presented some interesting data on that during the review workshop. Efforts should be continuing at national and local level to develop and improve care and treatment cascade.

**Table 16: Population by province and HIV diagnosed cascade in 2015**

	Jakarta	Bali	Jawa Timur	Kalimantan Barat	Papua	Maluku
Population density (per km <sup>2</sup> ) (update 2014)	15.173	710	808	32	10	35
Fertility rate (update 2014)	2,3	2,3	2,3	3,1	2,59	3,2
Proportion of births attended by skilled health personnel (%) (SDKI 2012)	98,6	99,3	98,7	87,4	57,8	86,2
Infant mortality rate (update 2014)	22	20	25	31	54	36
HIV treatment cascade (2015)						
HIV diagnosed	5.132	2.249	4.525	506	3.807	427
HIV in care	5.936	2.117	3.963	568	2.210	237
On ART	3.648	1.626	2.704	363	1.583	165
Viral load suppression	NA	NA	NA	NA	NA	NA

Source: PHO reports presented in EPI review Yogyakarta, 14-16 December 2016

## TB - HIV

The estimated number of new TB cases (includes HIV+TB) in 2015 was 1,020,000 (658,000-1,450,000) with an overall declining TB notifications but an increase of TB/HIV + cases. The total number of TB cases notified were 330,729 (93% pulmonary) and 11% of them with known HIV status (Global WHO TB report 2016, [http://www.who.int/tb/publications/global\\_report/en/](http://www.who.int/tb/publications/global_report/en/)).

The data available for TB/HIV shows that the percentage of testing for HIV among people with TB is very low. However, the number of people tested and on ART has been increasing in the last 3 years. Table 17 and 18 presents the national and province data available.

**Table 17: Population TB/HIV diagnosed cascade by year**

Indikator	2011	2012	2013	2014	2015	2016	Source of report
Number of TB patient tasted HIV	NA	NA	NA	33.101	52.499	48,635	HTC report
Number of TB patient known HIV positive	NA	NA	NA	32.896	52.282	48,197	
Number of TB patient who HIV positive	NA	NA	NA	2.095	3.504	2,836	
Number of TB patient screened TB	2.850	10.487	18.472	24.481	41.898	51,762	CST report
TB-HIV coinfection	1.849	2.825	3.766	6.472	6.974	7,015	
TB-HIV received ART and OAT	486	1.655	1.993	4.059	6.559	5,228	

Source: HTC and ART reports, MoH 2015

**Table 18: Population by province and TB/HIV diagnosed cascade in 2015**

	Jakarta	Bali	Jawa Timur	Kalimantan Barat	Papua	Maluku
<b>TB-HIV Cascade (2015)</b>	22.927	2.952	44.057	982	1.754	3.590
Registered TB cases	6.721	1997	7.313	923	719	148
Tested for HIV	608	272	481	81	580	22
HIV positive On ARV treatment	2.927	63	106	72	258	22

Source: PHO reports presented in EPI review Yogyakarta, 14-16 December 2016

### Elimination of mother to child transmission of HIV

Elimination of mother to child transmission by 2030 is one of the international goals agreed by countries. This goal although in theory is easier in countries with concentrated epidemics, it has the challenges that the women infected are mostly sex partners or KP and often they do not consider themselves at risk. In addition, in large countries and with heterogeneous epidemics, these women are scattered so it is more difficult to target them. Indonesia has increase dramatically the number of women tested last 5 years, from over 20,000 in 2011 to almost 300,000 in 2014. Among those more than 15,000 women were identified as needing ART. The policy in Indonesia is “opt out” so pregnant women can test HIV along with the other routine testing. In low and concentrated epidemics, the question that rises are, should HIV testing for all pregnant women continue? Is cost-effective universal antenatal testing compared to focused approaches across high to very low HIV prevalence settings? In a recent paper published by Naoko Ishikawa et al, using a modelling analysis conclude that when HIV testing services were only focused in high-burden areas within a country, mother-to-child transmission rates remained high ranging from 18 to 23%, resulting in a 25 to 69% increase in new paediatric HIV infections and increased future treatment costs for children. Universal HIV testing was found to be dominant (i.e. more QALYs gained with less cost) compared to focused approaches in the Namibia, Kenya and Haiti scenarios. The universal approach was also very cost-effective compared to focused approaches, with \$ 125 per quality-adjusted life years gained in the Viet Nam-based scenario of very low HIV prevalence. Sensitivity analysis further supported the findings. <http://www.jiasociety.org/index.php/jias/article/view/21212> | <http://dx.doi.org/10.7448/IAS.19.1.21212>.

Taking into account these results, the program review should consider if PMTCT policy needs to be expanded in Indonesia, and perhaps focused in some provinces where the burden is larger.

**Table 19: National data for PMTCT 2011-2014**

Indicator	2011	2012	2013	2014	2015
Number of pregnant women tested	21.103	43.624	100.296	298.050	480.061
Number of pregnant women HIV positive	533	1.275	3.126	2.593	3.545
Mothers needing PMTCT (modelling, MoH 2014)	12.065	13.189	14.225	14.469	15.129
Positivity rate	2.5%	3%	3.1%	0.6%	0.6%
Number of pregnant women on ART	112	348	512	747	988
Percentage of child HIV infection from HIV positive woman delivery in the past 12 months (reported in GARPR)		Estimasi: 34,2%	Estimasi: 34,3%	Estimasi: 34,3% Data program : 6,86%	Estimasi: 0,53%* Data program : 10,40%

Source: HTC and ART reports, MoH 2015, Global AIDS Response Progress Report 2011-2015, UNAIDS, Estimates and Projection of HIV/AIDS 2015-2019 (modelling), MoH 2014; \*Denominator is updated from modelling 2014, MoH

**Table 20: Population by province and PMTCT cascade in 2015**

	Jakarta	Bali	Jawa Timur	Kalimantan Barat	Papua	Maluku
<b>PMTCT Mother Cascade (2015)</b>						
- Registered pregnant women at ANC	196.496	69.975	635.512	113.286	70.123	2.700
- Tested for HIV	66.964	29.338	30.246	5011	17.527	2.646
- HIV positive	559	172	140	8	236	20
- On ATV treatment	134	147	126	5	135	3
<b>PMTCT Children Cascade (2015)</b>						
- Children exposed to HIV	86	94	26	14	262	7
- Children having prophylaxis	90	93	21	14	247	-
- Tested for HIV	9	3	10	6	43	-
- HIV positive	6	2	0	0	6	-

Source: PHO reports presented in EPI review Yogyakarta, 14-16 December 2016



## CONCLUSIONS AND RECOMMENDATIONS

Indonesia presents a complex epidemic and dynamics in a very large country in land extension and number of islands as well as in population with a very dynamic and cosmopolitan urbanization in the last decade. Indonesia, as many countries in Asia, presents and heterogeneity of the epidemic in the context as well as in the level of HIV prevalence among KP. There are districts with very low level of HIV, others with concentrated epidemics in very well identified key populations and in Papua, the situation is more like a generalized epidemic, with a female to male ratio, over 1 that is more comparable to the epidemic in West Africa but a lower level. In addition, there is tremendous grade of mobility, not inherent only to KP but to the general population as well. The industrialization, increasing tourism and other factors have contributed to an increase urbanization of Indonesia and therefore fuelling the risk factors for HIV epidemic. In the context of these kinds of epidemics, three main determinant factors contribute to HIV infection. **First**, the level of infection among key populations. In Indonesia surveillance system, has shown that prevalence levels in some provinces and in some populations, are well above 20%. **Second**, the population size of these key populations. Indonesia has undertaken a unique approach to estimate the number of KP that are more at risk, as not all members of KP are at the same level of risk. Methods have been refined over the years. **Third**, the interaction between KP and other population groups. The IBBS conducted in Indonesia have shown the interactions and the level of contact between different population groups, and the level of protection that these populations have adopted. In the case of Indonesia, most of new infections are coming from key populations and their sexual partners. However, because in Indonesia is majority of Muslim communities and men are circumcised the risk of having an explosive HIV epidemic in the general population is very low.

The epidemic in Indonesia is mostly concentrated and extremely important in key populations as MSM, Waria, FSW and PWID with clear levels and trends in many of Provinces as presented in the report. In Papua and West Papua, the epidemic is different with more women infected and we could call low level generalized. The definition of the estimating tool AEM about was so called “the low risk population” has been changed to “non-key population”, since they are very high risk of contracting HIV, even outside of the traditional KP are sexual partners of SW, sexual partner of PWID, sexual partner of bi sexual males, former SW among sectors

HIV case reporting should have proved its value and SIHA is contributing to build a national system and given the opportunities to provinces to understand the epidemic rates and where interventions should be reinforced. All six provinces that presented data have clearly identified the districts and populations where the higher burden of HIV is present. Challenges were identified and those should be addressed with support from the NAP which in the process to develop HIV case reporting guidelines, including linkage between HTC services to HIV care and disaggregated by KPs.

The HIV testing strategy used in Indonesia is based in two independent tests; using dried blood spots and people are referring to VCT centre if they want to know their results. In the era of access to ART and following recommendations by WHO in December 2015 (“to treat all”), is imperative that participants in the HIV surveillance activities the results are returned to participants. An adequate HIV diagnosis strategy should be adopted as well in the HIV surveillance activities. How to return the results and refer to treatment where and other details may depend on the different provinces and local context of access to health services and populations. However, based on ethical grounds this it should be done.

HIV sentinel surveillance should be continuing as it has provided valuable information at local level and it is very useful for program planning. However, there are too many population groups being surveyed regularly, thus provinces, based in their data and priorities for intervention should design the HIV sentinel surveillance. The use of routine data, regarding HIV case notification, PMTCT, TB/HIV and ART should be reinforced.

Indonesia has acquired long and large experience in conducting IBBS with different methods and populations and has tried to be consistent over time in terms of location and populations. The use of this information is critical to plan interventions with KP in the right places. However, there was not much information presented in how these data was used. Taking into account the cost and complexity and the need to have a deeper analysis and use of data, IBBS could be spaced on time, and be conducted every 3-4 years, alternating sites and places but keeping the consistency. There is a need to select appropriate populations in each province and according to the level of HIV prevalence in the provinces. Preference should be given to high-level prevalence of course. Programmatic mapping for interventions should be also a priority, so districts can improve planning and implementation of preventions care and treatment activities.

Demographic Health Surveys provide very useful information among general population and other indicators. The next DHS is planned for 2017. The questionnaire used should be revised accordingly and take into account the latest developments.

The prevention, care and treatment cascade for all populations, and treatments services (TB, MTCT and ART) have shown many gaps that should be addressed. In the times of scale of ART and the fact that KP are very mobile and stigma is still very present, it is not straightforward to measure impact in a quick epidemiological analysis at national level. Much more pertinent is to measure new infections, HIV incidence among KP and mortality trends, but these indicators are hard to measure in concentrated epidemics. The fact also that KP are very uneven distributed it makes also harder to evaluate the impact of interventions at national level. Indonesia has done tremendous progress in increasing the number of people tested, (a question is these people the right population being tested?). In addition, increase the people on ART with more than 60,000 from a few thousands only in early 2011. Therefore, measuring impact should be done at more local level and for each KP, as well as looking at the scale up of interventions put in place.

The second-generation surveillance system in Indonesia has been able to track the HIV epidemic among KP with appropriate methods and tools. Further recommendations are listed below based in 2011 external program review recommendations regarding Strategic Information.

## Routine Data

Recommendations	Progress 2016	Further recommendations
Undertake sustainable efforts to improve analysis of routine report data: VCT, PMTCT, ART	A new system has been introduced for HIV and AIDS cases reporting: SIHA that collects information from VCT and some health services	SIHA needs to be refined, extended and linked to other services and increased stepwise with preferences in high endemic areas.
VCT cases should be reported by categories	Categories are reported	To continue improve quality of mode of transmission data
Collect reliable data on bacterial and ulcerative STI	Syndrome and laboratory diagnosis are reported by provinces in SIHA	To continue to undertake STI surveillance among KP and improve laboratory diagnosis
Attention should be given to passive systems like AIDS cases and ART	SIHA created but not fully performance yet in all services	To report only HIV cases and drop AIDS cases Incorporate sentinel events for HIV reporting. To perform an assessment of system every 2-3 years

## HIV Sentinel Surveillance

Recommendations	Progress 2016	Further recommendations
Restrict HSS beyond 47 core sites to maximize data collection and analysis	HSS undertaken in districts	To conduct HSS in biannual basis in districts where interventions are in place focusing in KP with high HIV prevalence.
Revise HSS sentinel protocol to become more practical. Definitions of KP	Protocol has been revised and new definitions for KP has been introduced	Implement new definitions and revised protocol
Used revised protocols to guide other provinces or districts	Training of provinces has taken place	To continue supervision and monitoring of Provinces and Districts to ensure quality of information
Train staff to improve HSS data quality	Implemented	To continue training in regular basis
Confidential testing should be considered as replacement for anonymous testing	Implemented	To continue informing participants of surveys of HIV testing results and refers to care and treatment.
Strengthening of HSS logistics and planning by Sub Directorate (Subdit) HIV AIDS and STI	Logistic for selected sites of HSS was supported by national government budget.	To continue supporting the logistic for the core sentinel sites by sub directorate AIDS and STI and recommend to get support from local government budget
Data must be collected and used. Use local consultants	Data use is not optimized for programme planning and evaluation	To improve data collection and data used at District level, focusing on those with highest burden

## Integrated Biological and Behaviour surveys

Recommendations	Progress 2016	Further recommendations
A core set of sites should be selected for IBBS	Yes, it has been done	To space IBBS on time and update questionnaires. Explore feasibility of BSS in social media and internet
IBBS should not be used as a diagnostics tool	To obtain the trends of HIV prevalence and behaviour among KP	To continue IBBS.
IBBS should be conducted every 2 years or 3 years.	IBBS has been undertaken very regularly	To conduct IBBS every 3 -4 years depending in the need of programs and data, reinforce local capacities.
Provincial, district and CSO should have access to their IBBS data	Subdit AIDS and STI provides the IBBS data requested from PHO, DHO, CSO and universities.	To continue provide data for local level and academicians and explore the risk factors of KP.
Questionnaire should include core indicator should be consistent with other surveys	The questionnaires have been modified including core indicators	To update questionnaires with new WHO IBBS guidelines.
Use of personal digital tools to enhance and improve quality of data, and drop paper based surveys.	The personal digital is planning in the IBBS 2017 implementation	To use digital tools for data collection. To include internet survey and social media in the futures.

## Estimation of HIV key population

Recommendations	Progress 2016	Further recommendations
MeDistinguish PSE: national level versus local for program interventions	Yes, has been done	To continue improvements
Develop PSE at national level using direct methods combined with extrapolation methods	PSE in 2016 has been refined with methods and other variables incorporated	To continue improvements based in weakness identified.
Training at provincial level on PSE	Subdit AIDS and STI need to develop the protocol first on validating the size estimation of KP at local level	To increase local capacity in programmatic mapping for data use and monitoring
Improve PSE in areas with largest KP and interventions in place or planned	Yes, undertaken	To continue improvements
The choice of locations for direct size estimation should be made in a manner that will allow for the most accurate measures of size in all areas of the country, while conducting the least amount of primary data collection.	PSE methods has been improved and number of districts mapped increased up to 111	To focus in provinces and districts where the burden of HIV is higher
Use systematic processes driven from provincial and central level	Provinces have been empowered and developed their epi profile and routine program data.	To continue with all the provinces. Develop a template for epi and program profile.
Validate the HIM (HIV Indonesia model) in 10 different epidemic regions based on the country context.	Subdit AIDS and STI uses the Asian Epidemic Model (AEM)	To develop the modelling tool
Update AEM with new data from IBBS	Estimates and projections have been updated regularly using new recommendations by UNAIDS/WHO	To undertake update estimation and projections in 2017 with updated spectrum. Try to estimate at some provincial level and validate with existing routine data.
To establish a national working group on modelling and policy analysis	A national Working Group has been established	To continue to engage in training and to look into impact in focus districts
At the provincial level, training and mentoring on use of strategic information for provincial level planning should be implemented.	It is a part of the HIV monitoring and evaluation and surveillance training	To continue to conduct the training and to look into impact in focus districts

## STI Surveillance

Recommendations	Progress 2016	Further recommendations
Develop STI surveillance guidelines and GAMR	Draft guidelines has been developed	To finalize the STI surveillance and develop protocol and undertake GAMR study in districts with highest STI levels.
Provide STI surveillance in districts	The STI case data has been reported by the district level	To finalize the STI surveillance guidelines
Train laboratory staff in sentinel sites for STI	The training has been conducted as part of the STI management training	To continue to engage in training in focus districts
Set up a quality assurance system including monitoring and supervision	This is a part of the programme monitoring	To develop the quality assurance for STI surveillance as part of the HIV programme monitoring

## WORKSHOP AGENDA

HIV Epidemiology and Programme Impact Review  
Yogyakarta, 14-16 December 2016

Date/ Day	Time	Activity	Purpose	Presenter/ Chair	Presenter/PIC	
14 Dec 2016 Wednesday	09.00-10.30	Opening and presentation from NAP	The presentation will share: 1. National health policy, strategies, organogram MoH 2. Update HIV surveillance and M&E of HIV control programme 3. Update the recommendation of SI from health sector review 2011 4. Objectives and deliverables of EPI review	Opening by DG/Dir. DTDC  Presenter: Ka. Subdit HIV AIDS & PIMS  Note Taker: Eva Muzdalifah	Ka. Seksi IMS / Victoria Indrawati	
	10.30-10.45	<b>Coffe Break</b>				
	<b>Objective 1</b>					
	10.45-12.00	Review the methods of data collection from the existing of second generation of HIV surveillance	To review the methods of data collection on: - HIV case reporting/HIV case based surveillance - STI case reporting - HIV sentinel surveillance	Chair: DR. Toha Muhaimin Co-Chair: DR. Rico Januar Sitorus  Note taker: Eva Muzdalifah	Victoria Indrawati	
	12.00-13.00	<b>Lunch and Pray</b>				
	13.00-15.15	Review the methods of data collection from the existing of second generation of HIV surveillance (continue)	To review the methods of data collection on: - Integrated biological behavioral survey - Mapping KAP, including definition of KAP - Size Estimation of key affected populations - Estimates and projection of HIV/AIDS, including definition of low risk population	Chair: Prof. Budi Utomo Co-Chair: DR. Rico Januar Sitorus  Note taker: Eva Muzdalifah	Ari Wulan Sari	
	15.15-15.30	<b>Coffe Break</b>				
<b>Objective 2</b>						

Date/Day	Time	Activity	Purpose	Presenter/Chair	Presenter/PIC
	15.30-17.00	Review the HIV prevention and care cascade in providing the information on country progress in the response to HIV epidemic	To review the HIV prevention and care cascade at national and provincial level, year 2011-2015, including the quality of data <ul style="list-style-type: none"> <li>- HIV diagnosed, in HIV care, HIV Cascade: initiated ART, ART retention 12 months, VL suppression, death</li> <li>- TB-HIV cascade: registered TB patients, know HIV status, HIV positive, on treatment for both TB and HIV</li> <li>- PMTCT cascade: estimate number of pregnant women, pregnant women attending ANC, pregnant women tested for HIV, HIV-positive pregnant women, HIV-positive pregnant received ART, HIV- exposed infants-received prophylactic ARV, HIV- exposed infants tested for HIV, infants confirmed HIV- positive</li> </ul>	Chair: Prof. Chatarina Wahyuni  Co-Chair: dr. Bony Lestari  Note taker: Diana Wijayaningrum	Victoria Indrawati / Sugeng Wiyana
<b>Conclusion of 1st day</b>					
<b>Objective 2</b>					
15 Dec 2016 Thursday	09.00-10.30	Review the prevention and care cascade (continue)	To review the EPI profiles from selected provinces (continue)	Chair: Prof. Chatarina Wahyuni  Co-Chair: dr. Bony Lestari  Note taker: Diana Wijayaningrum	
	10.30-10.45	<b>Coffe Break</b>			
<b>Objective 3</b>					
	10.45-12.30	Review level dan Trend of HIV epidemic	To review level and trend of HIV epidemic at national level 2011-2020: <ul style="list-style-type: none"> <li>- Definition of key affected population, including low- risk population HIV Prevalence, Incidence, mortality: key population, pregnant women, children and others</li> <li>- Syphilis prevalence</li> <li>- The level of HIV epidemic Papua vs Non Papua</li> <li>- Behaviour: condom used, circumcision, HIV testing coverage (testing, treatment, etc)</li> <li>- The proportion of female HIV (+), trend for 10 years</li> </ul>	Chair: Prof. Indang Trihandini  Co-Chair: Fetty Wijayanti  Note taker: Yulia rachma	Viny Sutriani



Date/Day	Time	Activity	Purpose	Presenter/Chair	Presenter/PIC	
	12.30-13.30	<b>Lunch and Pray</b>				
	13.30-15.15	Review level dan Trend of HIV epidemic (continue)	To review the EPI profiles from selected provinces: <ul style="list-style-type: none"> <li>- Demographic data, provincial mapping</li> <li>- Result from IBBS, HSS or other surveys</li> <li>- Identify the HIV surveillance activities which have been done, including the strenghts and weaknesses</li> <li>- Identification the hotspot/ mobility from each KAP</li> <li>- Strategy and programme response to control HIV epidemic at province</li> </ul>	Chair: Prof. Ridwan Amirudin/ Prof. Wirawan  Co-chair: Dolfinus Yufu Bouway  Note taker: Yulia rachma	Ari Wulan Sari	
	15.15-15.30	<b>Coffe Break</b>				
	15.30-17.00	Review level dan Trend of HIV epidemic (continue)	To review the EPI profiles from selected provinces: (continue) <ul style="list-style-type: none"> <li>- Demographic data, provincial mapping</li> <li>- Result from IBBS, HSS or other surveys</li> <li>- Identify the HIV surveillance activities which have been done, including the strenghts and weaknesses</li> <li>- Identification the hotspot/ mobility from each KAP</li> <li>- Strategy and programme response to control HIV epidemic at province</li> </ul>	Chair: Prof. Ridwan Amirudin/ Prof. Wirawan Co-chair: Dolfinus Yufu Bouway  Note taker: Yulia rachma	Ari Wulan Sari	

Date/Day	Time	Activity	Purpose	Presenter/Chair	Presenter/PIC	
16 Dec 2016 Friday	<b>Conclusion of 2nd day</b>					
	09.00-10.15	Review level and trend of HIV epidemic	To review the EPI profiles from selected provinces (continue)	Chair: Prof. Ridwan Amirudin/ Prof. Wirawan  Co-chair: DR. Dolfinus Yufu Bouway  Note taker: Yulia rachma	Rizky Hasby	
	10.15-10.30	<b>Coffe Break</b>				
	10.30-11.30	Discuss the conclusion and recommendation	To develop the consensus among the experts and provide conclusion and recommendations	Ka. Seksi IMS	Victoria Indrawati	
	11.30-13.30	<b>Lunch and Friday Pray</b>				
	13.30-15.00	Presentation of the Conclusion and recommendation		Ka. Subdit HIV AIDS & PIMS	Ka. Seksi IMS	
	15.15-15.30	<b>Coffe Break</b>				
	15.30-16.30	Closing the meeting		Dir. DTDCP (TBC)	Ka. Subdit HIV AIDS & PIMS	
	<b>Conclusion of 3rd day</b>					

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