

Regional Workshop on Strategic Information of HIV, STI and Hepatitis

Meeting Report
Bangkok, Thailand, 12–14 October 2015



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Regional Workshop on Strategic Information of HIV, STI and Hepatitis

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Acronyms

AIDS	acquired immunodeficiency syndrome
ANC	antenatal clinic
ART	antiretroviral treatment
BBS	biological behavioural surveys
CDC	Centers for Disease Control and Prevention, Atlanta, USA
EPI	expanded programme on immunization
FSW(s)	female sex worker(s)
GARPR	Global AIDS Response Progress Reporting
GHP	WHO Global Viral Hepatitis Programme
GPS	global positioning system
HIV	human immunodeficiency virus
HMIS	health management information system
HSS	health systems strengthening
IBBS	integrated biological and behavioural surveys
KP	key population
KPI(s)	key performance indicator(s)
MCH	maternal and child health
MDG(s)	Millennium Development Goal(s)
MSM	men who have sex with men
NAP	national AIDS programme
NHSO	national health security office
NSACP	national STI/AIDS control programme
PIMS	patient information management system

PLHIV	people living with HIV
PWID	people who inject drugs
SEARO	Regional Office for South-East Asia
SIHA	System Information HIV/AIDS
STI(s)	sexually transmitted infection(s)
TB	tuberculosis
UIC	unique identification code
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
VCT	voluntary counselling and testing
WHA	World Health Assembly
WHO	World Health Organization

Executive summary

The universal 2015 Sustainable Development Goals call for an end to the HIV/AIDS epidemic along with tuberculosis, hepatitis and other communicable diseases. Though the adult HIV prevalence is low in the WHO South-East Asia Region, prevalence among key populations (KPs) is high. Chronic viral hepatitis is 30 times more prevalent than HIV while prevalence of sexually transmitted infections (STIs) among KPs is high in some Member States. Ending epidemics necessitates a “data revolution”, which encompasses better-quality, local, real-time, granular and disaggregated data to be made available to design and support a sustainable response that ensures no one is left behind. This workshop was held to discuss how to strengthen the strategic information about HIV, viral hepatitis and STI programmes for evidence-based decision-making at the policy and programmatic levels.

WHO, with partner organizations, released the Consolidated Strategic Information Guidelines for HIV in May 2015. These guidelines recommend 10 global and 50 national indicators for generation, analysis and use of better quality data along the health sector cascade. This guide will be useful for national programmes to:

- prioritize indicators;
- identify data sources and priorities to strengthen data;
- build analysis capacity;
- make data-driven decisions; and
- evaluate the overall impact to improve the response.

Data for the indicators will be available from various sources, most importantly from surveillance, estimations and HIV programme, etc.

Surveillance is an intervention in itself that allows programmes and communities to better respond to the HIV/AIDS epidemic. In 2010–2014, HIV surveillance in the Region has improved as evident from the country experiences presented by Bhutan, India and Nepal. HIV prevalence surveys were conducted

among key population groups in eight countries. STI estimation and programme data from Global AIDS Response Progress (GARP) reporting have also improved but its surveillance is lagging behind. Some countries in the Region are taking advantage of HIV surveillance to conduct surveillance surveys for hepatitis. Country experience from Indonesia found such integration was feasible but there were challenges at the implementation level and with data analysis and reporting.

While the global 10 indicators cover the full spectrum of strategic information for the HIV epidemic and responses, monitoring the cascade of HIV services focuses on access and retention of HIV prevention, testing, care and treatment services. All countries in the South-East Asia Region are measuring and monitoring the continuum of HIV care and treatment services at the national level. Coverage of HIV testing is low and viral load testing is unavailable or has limited availability. Also, countries are using different methodologies to calculate the indicators. Limited attempts have been made to generate cascades at the sub national level, for community programmes and among KPs.

One of the key bottlenecks for monitoring the cascade of HIV services is lack of capacity to track HIV cases individually. HIV case-based reporting exists in all countries but data vary in quality, completeness and timeliness, primarily due to the lack of unique identifiers and the ability to link individual HIV cases across the cascade of HIV services. WHO is planning to formulate an HIV Patient Monitoring and Case Surveillance Guidance aimed at consolidating HIV patient monitoring and case reporting systems along the continuum of HIV care.

The Region is increasingly leveraging the use of information technology to improve the current information management systems that are characterized by fragmented reporting systems, a large number of indicators and increasing number of individuals receiving HIV services, inadequate geo-specific information, and limited use of data at the sub national levels. Health information systems in countries are increasingly moving from paper-based to electronic systems for data collection and reporting (e.g., System Information HIV/AIDS (SIHA) in Indonesia). Also, Thailand recently launched the “AIDS Zero” portal that consolidates complex data from existing sources at one place and translates it into simplified interactive visualized real-time, easy-to-use information. The WHO Regional Office for South-East Asia (SEARO) aims to pilot a “Regional HIV Intelligence Platform” that will capture geo-tagged information on critical intelligence indicators through mobile-based reporting solutions, which will be available at all levels of programme management in real time.

As countries move towards ending the HIV, STI and hepatitis epidemics, there are increasing needs and opportunities for strengthening the use of strategic information for these programmes. Countries are encouraged to implement the WHO Consolidated Strategic Information Guidelines to simplify programme monitoring and ensure consistent data across countries. Continued efforts are needed to strengthen and harmonize the measurement and monitoring of the cascade of HIV services, especially at the local level and among KPs on a real-time basis, to improve decision-making in a timely manner. Countries need to strengthen individual case reporting systems with the use of unique identifiers for monitoring the cascade of HIV services and 90-90-90 targets (90% of people living with HIV get diagnosed; 90% of those diagnosed with HIV receive treatment; and 90% of these on treatment get viral suppressed). Based on the epidemic situation in a country, opportunities to integrate surveillance for HIV, STIs and hepatitis also need to be more actively explored. Support from national programmes is required to implement new information technology platforms that improve capacity for individual patient monitoring and reporting, and of data use and analysis.

1. Introduction

1.1 Overview of HIV, hepatitis and sexually transmitted infections in the SEA Region

With an estimated 3.5 million people living with HIV (PLHIV), the World Health Organization's South-East Asia (SEA) Region has the second largest case of HIV epidemic after sub-Saharan Africa. The HIV epidemic is heterogeneous among the Region's Member States. Five countries – India, Indonesia, Myanmar, Nepal and Thailand – account for more than 99% of HIV infections and define the extent of the epidemic in the Region. There were an estimated 230 000 (160 000–370 000) new HIV infections and 190 000 (160 000–220 000) AIDS-related deaths in 2014. The HIV epidemic is showing signs of stabilizing and declining in most Member States except Indonesia. Both new HIV infections and AIDS-related deaths have plateaued over the past couple of years but are likely to increase if there is a “business as usual” response.

The Region is characterized by low adult HIV prevalence (at 0.3%); adult prevalence among all Member States is below 1% except Thailand. The HIV epidemic is concentrated among the key populations (KPs) – men who have sex with men (MSM), transgenders (TGs), people who inject drugs (PWID) and sex workers. HIV prevalence is particularly high among PWID in many Member States and is showing increasing trends.

The health sector response to HIV has shown significant improvement in this Region since 2000. Target 6(a) of the Millennium Development Goals (MDGs) – “to halt by 2015 and reverse the spread of HIV/AIDS” – has been achieved in the Region. At the end of 2014, more than 1.2 million people were receiving antiretroviral therapy (ART). Condom use among sex workers and MSM is high in many high-burden countries in this region. But HIV testing remains a major challenge with less than one third of KPs knowing their HIV status. The coverage of ART among PLHIV remains low at 36% in the Region (2014 data).

In the WHO South-East Asia Region, chronic viral hepatitis is 30 times more prevalent than HIV. An estimated 100 million people are living with chronic hepatitis B and 30 million with chronic hepatitis C. Over the next 10 years, more than 5 million people will die due to viral hepatitis in the South-East Asia Region. The Asia-Pacific Region accounts for 77% of 500 000–700 000 hepatitis B deaths globally each year (Institute for Health Metrics and Evaluation, Global burden of disease study).

Limited data on sexually transmitted infections (STIs) are available for the Region. Data reveal that the prevalence of syphilis among KPs varies significantly among Member States and is particularly high in Indonesia, Timor-Leste and Sri Lanka. Syphilis seropositivity is low among pregnant women in all countries. In antenatal care (ANC) settings, where syphilis testing is part of the essential care package, more than 80% pregnant women were tested for syphilis in four countries while only 1% received syphilis testing in Indonesia (2014 data), a country where syphilis cases are on the rise. In 2014, coverage of syphilis treatment was high in all Member States. As a result, cases of congenital syphilis have decreased in the Region.

1.2 Strengthening strategic information on HIV, hepatitis and STI programmes

Evidence-based decision-making leads to better health outcomes. Thus, better capacity to collect, analyse and interpret high-quality evidence is required for sound decision-making at the policy, planning and programme levels. Strategic information is important to:

- (1) understand the epidemics and their context;
- (2) design the response and adapt it to reach those in need;
- (3) track and assess the health sector response;
- (4) identify policy and programmatic bottlenecks and opportunities; and
- (5) inform future programme planning and implementation.

Achievement of universal access to the continuum of HIV services requires a strong strategic information component to identify gaps in

performance and improve programmes to meet targets. The effective generation and use of data is a key component of the national HIV programme to be able to monitor the epidemic, target the prevention intervention, improve the uptake and retention of PLHIV in HIV services, and maximize the benefits for improved survival and reduced transmission of HIV.

WHO in partnership with other technical agencies has been working intensively to support countries in strengthening the HIV strategic information systems in Member States. In particular, monitoring tools and protocols have been implemented and experiences gained to improve the quality and performance of HIV services. Surveillance has been carried out on HIV and STIs to generate important information on the epidemic and associated factors. Meanwhile, a number of important guidelines have been updated and launched by WHO recently, including surveillance of HIV, STI and HIV drug resistance, consolidated guidelines on HIV strategic information, the three interlinked [HIV, tuberculosis (TB) and maternal and child health (MCH)] patient monitoring system (3ILPMS), and the regional metrics for the entire cascade of HIV testing, care and treatment services.

Furthermore, TB-HIV co-infection is an important cause of morbidity and mortality in some countries. TB-HIV collaborative activities are therefore implemented across the two programmes, which necessitates joint planning, monitoring and evaluation. A guide to monitoring and evaluation for collaborative TB/HIV activities, published by WHO in 2015, assists TB and HIV programme managers and other stakeholders in monitoring and evaluation for collaborative TB/HIV activities. It is intended to facilitate collection of standardized data and help in interpretation and dissemination of this data for improvement of the programme at the national and subnational levels.

Following the World Health Assembly resolution WHA63.18 on viral hepatitis in 2010 and the establishment of a WHO Global Viral Hepatitis Programme (GHP) in 2012, WHO and countries have intensified efforts to strengthen surveillance, monitoring and evaluation for hepatitis B and C at the global, regional and country levels.

The 2015 Sustainable Development Goals (SDGs) herald a new era for health and data. Of the 17 focus areas, *'Healthy lives for all at all ages'* is represented as a single focus area and contains one communicable disease

goal related to ending the HIV epidemic along with TB, malaria, neglected tropical diseases, hepatitis, waterborne diseases and other communicable diseases. 'Data, monitoring and accountability' is also a central part of the SDGs for "strengthening the means of implementation". The data goal calls for measuring and managing real, disaggregated data: "By 2020, enhance capacity-building support to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographical location and other characteristics".

To strengthen the strategic information systems of HIV, viral hepatitis and STI programmes, a regional workshop on strategic information of HIV, Hepatitis and STI was convened in Bangkok, Thailand, on 12–14 October 2015. Participants at the workshop included: national HIV programme focal persons for strategic information; national STI programme focal persons for STI surveillance; and focal persons for hepatitis in the national communicable disease programmes from eight Member States, i.e., Bhutan, Bangladesh, India, Indonesia, Maldives, Nepal, Sri Lanka and Thailand. There were also participants from technical partners such as UNAIDS and USAID, and the WHO Secretariat (see Annex 2 for list of participants).

2. Objectives

General objective

The general objective of the workshop was to:

- strengthen the strategic information systems of HIV, viral hepatitis and STI programmes.

Specific objectives

The specific objectives of the workshop were to:

- (1) review current status of and share experiences on HIV and STI strategic information at the country level;
- (2) provide an update on the recent developments and WHO guides on HIV, hepatitis and STI surveillance and monitoring;

- (3) identify opportunities within the strategic information systems for HIV to collect data on hepatitis B and C; and
- (4) draft a framework of actions for further strengthening HIV, hepatitis and STI strategic information in Member States.

3. Proceedings

This meeting report summarizes the presentations, discussions and group work of different sessions in the following thematic areas: monitoring the progress of HIV, hepatitis and STI by 2030; releasing/launching the strategic information guidelines; surveillance for HIV, STI and hepatitis; cascade analysis and status of reaching the 90-90-90 targets; HIV case-based reporting and monitoring; and country experiences of implementation (see **Annex 1** for the detailed agenda).

3.1 Monitoring progress on HIV, STI and hepatitis by 2030

The world is embarking on the Joint United Nations Programme on HIV/AIDS (UNAIDS) Fast-track Strategy to end the AIDS epidemic by 2030. The Fast-track targets include:



NOTE: 90-90-90 stands for 90% of PLHIV are diagnosed; 90% of people with diagnosed HIV are on ART; and 90% of people receiving ART are virally suppressed (source: UNAIDS 90-90-90: An ambitious treatment target to help end the AIDS epidemic).

Monitoring to end epidemics necessitates “data revolution”, which calls for better quality, local, real-time, granular and disaggregated data to design and support a sustainable response and ensure that no one is left behind. There exist some good practices in the Region that have been based on strong local data use, such as in the case of Thailand’s prevention response. But disaggregated data (by modes of transmission, age, gender and geographical location) at the level of the response is still lacking significantly. Greater strategic use of local data can help focus programme response among the people and geographies where it will have maximum impact.

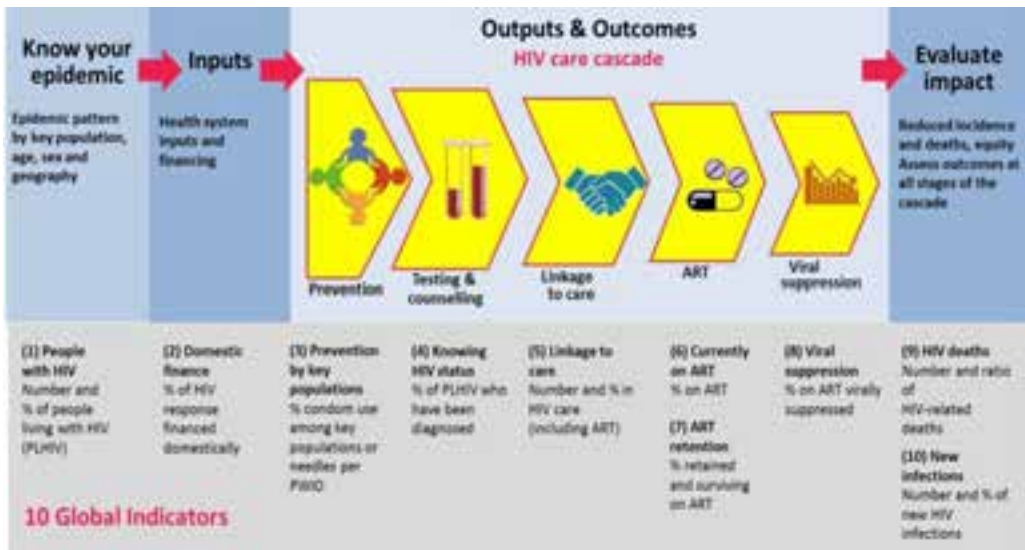
As we move towards ending the AIDS epidemic by 2030, priorities for HIV strategic information include:

- (1) monitoring the programme with fewer indicators, more disaggregated and real-time data at granular levels;
- (2) use of the “cascade analysis” to identify bottlenecks towards reaching 90-90-90 targets;
- (3) strengthen individual HIV case-based reporting and tracking for HIV surveillance and patient monitoring; and
- (4) conducting impact reviews (e.g., epidemiological and impact reviews, investment cases) to focus and prioritize programme activities.

3.2 Strategic information guidelines on HIV and hepatitis

WHO with partner organizations released the Consolidated Strategic Information Guidelines for HIV in May 2015 that recommend 50 national indicators, including 10 for global monitoring (Figure 1). The focused indicator list promotes generation, analysis and use of better quality data to assess and improve services along the health sector cascade; provide accountability for global reporting and the UNAIDS 90–90–90 targets; and link services along the cascade to outcomes and impact.

Figure 1: HIV strategic information



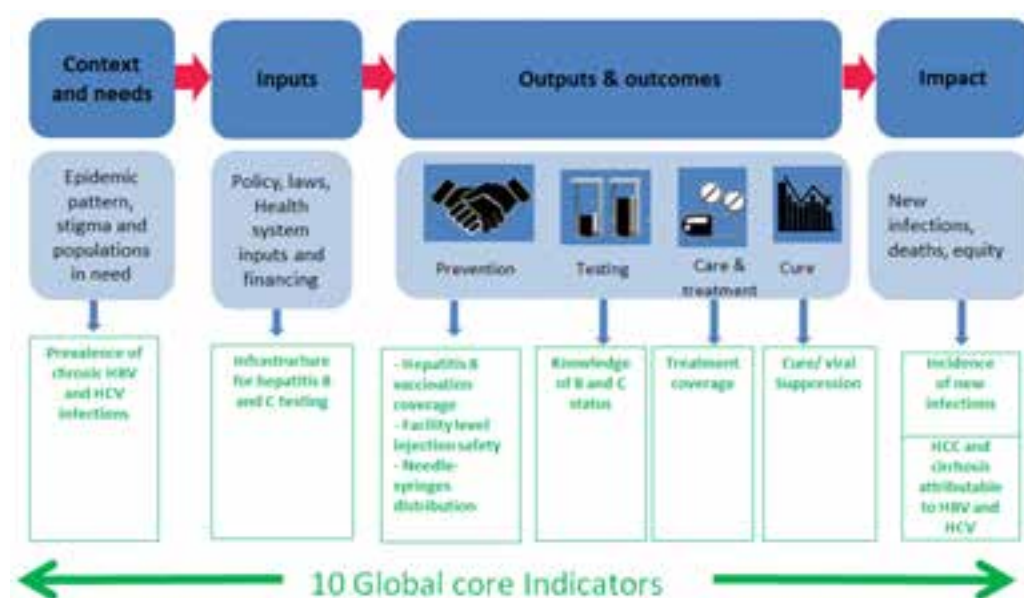
Data to calculate the inputs, monitor the outputs and outcomes, and evaluate the impact come from various sources: surveillance and behavioural data; population size estimates; modelling; administrative sources (finance, infrastructure, policy, human resources and drugs); facility and outreach reporting (health management information system or HMIS); and/or facility assessments. There are six indicators out of the 10 wherein the denominators are estimates. Modelled estimates are only as good as the inputs. Furthermore, since information comes from different sources, quality of the estimates is difficult to ascertain. Sometimes there are large uncertainties around estimates.

This guide will be useful for national programmes to consolidate and prioritize indicators when revising their monitoring and evaluation plans; identify data sources and surveillance priorities to strengthen data; plan disaggregation and build analysis capacity to assess data in a linked manner along the continuum of care; make decisions to improve the delivery of health-sector services; and evaluate impact at each stage of the cascade on incidence and mortality to improve the response. With the goal that 90% countries use consistent cascade data to support services, WHO will conduct global and regional cascade workshops to disseminate these

guidelines and continue providing technical support to countries in order to improve their strategic information systems.

Parallel to the framework developed for HIV, WHO is in the process of developing the first global guideline on strategic information for the viral hepatitis programme. There are 10 global indicators for viral hepatitis for monitoring the outputs and outcomes along the cascade of care, and the impact (Figure 2).

Figure 2: Hepatitis strategic information



3.3 Surveillance for HIV, hepatitis and STI

Public health surveillance is defined as the ongoing systematic collection, analysis and interpretation of health data essential for planning, implementing and evaluating public health activities. This is also closely integrated with timely dissemination of data to enable effective and efficient action to be taken to prevent and control disease. Surveillance is an intervention in itself, allowing programmes and communities to better respond to the epidemic.

HIV surveillance

Between 2010 and 2014, HIV surveillance data in the Region have improved, and more granular and disaggregated data are available. HIV prevalence surveys [which include HIV Sentinel Surveillance Surveys (HSS), Biological and Behavioural Surveys (BBS) and Integrated Biological and Behavioural Surveys (IBBS)] were conducted among key population groups in eight countries. **Table 1** shows the HIV surveillance choices and periodicity in five countries.

Table 1: *HIV Surveillance choices and periodicity (five countries)*

		India	Indonesia	Myanmar	Nepal	Thailand
Female Sex Workers	Serological survey (latest year)	HSS (2010–2011), IBBS (2014–2015)	IBBS (2013)	HSS (2014)		
	Behavioural survey (latest year)	IBBS (2014–2015)	IBBS (2013)	BSS (2008)		
	Periodicity	HSS – bi-annual IBSS - Undefined	Every 2-3 years	HSS - Annual BSS - undefined		
MSM	Serological survey (latest year)	HSS (2010–2011), IBBS (2014–2015)	IBBS (2013)	HSS (2014)		IBBS (2014)
	Behavioural survey (latest year)	IBBS (2014–2015)	IBBS (2013)	IBBS (2009)		IBBS (2014)
	Periodicity	HSS – bi-annual IBSS - Undefined	Every 2-3 years	HSS - Annual IBSS - Undefined		Every 2–3 years
PWID	Serological survey (latest year)	HSS (2010–2011), IBBS (2014-15)	IBBS (2013)	HSS (2014)	IBBS (2011)	IBBS (2014)

		India	Indonesia	Myanmar	Nepal	Thailand
	Behavioural survey (latest year)	IBBS (2014–2015)	IBBS (2013)	IBBS (2014)	IBBS (2011)	IBBS (2014)
	Periodicity	HSS – bi-annual IBSS - Undefined	Every 2–3 years	HSS - Annual IBSS - Undefined	Every 2–3 years	Every 2-3 years

Challenges with HIV surveillance include the following:

- technical guidance on surveillance (sampling/trend analysis especially for countries shifting from HSS to IBBS) is lacking;
- periodicity, influenced by financial and political factors, is not frequent;
- some countries have parallel HSS and IBBS; and
- data are not comparable for trend analysis, especially if the country is shifting to IBBS from HSS.

Surveillance data have certain limitations, such as that the quality of data is variable, representativeness of subnational and different sub-populations may not be factored in, and trends are unavailable. Additionally, testing under IBBS/HSS is anonymous and unlinked; a linkage to care for those testing positive needs to be considered.

Surveillance for hepatitis

There are three surveillance approaches to viral hepatitis that are dependent on the surveillance objectives and type of prevention of health consequences. Currently, many challenges are associated with all these surveillance approaches globally that translate into limited data on viral hepatitis (Table 2). While countries need to optimize already existing surveillance for acute viral hepatitis, there are opportunities for integrating surveillance for chronic hepatitis B and hepatitis C infections with HIV surveillance. Hepatitis surveillance has been integrated with HIV in some countries in the Region but there exists opportunities for further integration. The following are some of the notable events related to hepatitis surveillance.

- In 2015, HIV surveillance specimens were tested for hepatitis C in India.
- Indonesia conducted Integrated HIV-hepatitis surveillance in 2014.
- Specimens were tested for hepatitis B and hepatitis C in integrated biological and behavior surveillance (IBBS) with PWID in Myanmar in 2014.
- Bangladesh has been collecting data from 23 centres on anti-hepatitis C virus regularly through HSS since 1998.

Data on prevalence of chronic hepatitis B and C infections are also available from ANC clinics in four countries, from blood transfusion services in five countries, among PWID in four countries and among prisoners in one country. There is a need to institutionalize and integrate regular surveys.

Table 2: Surveillance approaches to viral hepatitis

Type of prevention	Prevention of new infections		Management of chronic hepatitis		Mortality reduction
Type of surveillance	1. Acute hepatitis reflecting new infections		2. Burden of chronic, prevalent infections		3. Burden of sequelae
Objectives	Detect outbreaks	Describe trends, Identify risk factors	Estimate the proportion of chronic infections that are identified	Estimate burden of chronic infections	Estimate incidence of HCC; cirrhosis attributable to hepatitis B & C
Population under surveillance	Persons with acute hepatitis in health-care setting		Persons without acute symptoms identified		Persons diagnosed with HCC in tertiary centres
			In health-care facilities / Laboratories	During population surveys	
Current surveillance challenges	Fragmented systems with low coverage; lack of laboratory testing; lack of data collection on risk factors; and acute hepatitis 'diluted' with chronic cases		Occasional, ad hoc surveys done in the context of studies; and lack of national prevalence estimates in many countries		Very little disease-outcome surveillance

Box 1

Assessment of HIV case-based surveillance in the SEA Region

In times of changing indicators, increased availability of routine data and declining resources, an assessment of surveillance data collection needs was done in Indonesia and Myanmar. The purpose was to see what case-based surveillance was like, whether it was ready to provide useful data for surveillance purposes, and the gaps. Key findings include the following:

Indonesia

- In principle, information on risk groups is recorded in HIV testing forms for all who are tested. But the information is only recorded for people whose point of entry is voluntary counselling and testing (VCT) centres, and not for those who enter through the provider-initiated testing and counselling (PITC) mode. While nongovernmental organizations (NGOs) are included in the VCT category, most STI patients in the public health facilities are included in the PITC category and therefore no information on risk group is recorded.
- Methods for de-duplicating data between testing facilities (or even within the same testing facility) are not working reliably.
- In most cases it is not possible to capture the linkages between diagnosed cases and linkage to care at the individual level, unless it is in the same facility. The number of people in care or on treatment sometimes surpasses the number of reported cases in specific geographical areas.
- There were several attempts to use different unique identifiers to track linkages between testing and care, as well as to identify duplicates. However, till now none have been working well. The anticipated National Health Insurance Scheme may provide an opportunity to obtain individual identifications (IDs) in the future. However, getting this system to work in a comprehensive manner will be challenging due to the large informal sector.

Myanmar

- Most KPs are tested in drop-in centres of international NGOs due to stigma and discomfort in the public sector; only 15% of KPs get tested at public sector HIV testing sites.
- HIV testing and reporting formats are organized by risk group. HIV-positivity rates among KPs can therefore be calculated but the data have not been systematically analysed. Also, coverage of HIV testing among KPs can be measured based on the aggregated data, but this is not done routinely.
- Reporting streams are fragmented. Registration numbers are used at ART centres, but there are no linkages with numbers assigned at other facilities.
- At present, testing data are in aggregate format and there are no national ID numbers. DHIS2 is piloting an individual tracking system for health information systems data but implementing of such a system for HIV would involve many challenges and costs (due to limited internet connectivity and staffing issues).

STI surveillance

Sexually transmitted infection is a key component of second-generation HIV surveillance since acute and treatable STIs are markers of unprotected sex. When triangulated with other data and control efforts, STI estimates can provide early warning of HIV epidemic potential and help identify sub-populations in need of vigorous programme interventions, such as condom use. Some core country-level STI indicators are routinely collected as part of the Global AIDS Response Progress (GARP) reporting and are used to monitor trends in prevalence and incidence, and also identify demographics disproportionately affected by STIs. Global STI estimation has significantly improved in 2012 as a result of tightening of study inclusion criteria, changes in regional grouping, and syphilis estimates being generated at the country level. But current methods for generating estimates are constrained by the lack of data. Thus, there is an urgent need to strengthen STI surveillance to generate country data; improve STI reporting through GARP reporting; enhance the use of non-published STI data; and improve estimation process by developing an STI module under the Spectrum software tool.

3.4 Strategic information of HIV, hepatitis and STI programmes presented by Member States

Several countries have shared their experiences of strategic information on HIV, hepatitis and STI programmes from several perspectives, including the surveillance systems, integrated activities for HIV and hepatitis, use of information technologies for data collection, reporting and presentation, and use of information for improvement of health services.

1. Bhutan: HIV surveillance

The HIV epidemic in Bhutan is characterized as a low-prevalence diffused epidemic, with an estimated 1000 PLHIV. Until June 2015, 432 HIV cases were detected from 18 of the 20 districts; the maximum cases were diagnosed in Thimphu, among housewives and farmers, in the age group of 25–39 years, and through contact tracing. Nearly 90% transmission was through sexual contact.

HSS has been conducted in selected sites among ANC attendees, STI patients, armed force personnel, migrants and TB patients regularly from 1989–2006. From 2006, health information service centres (HISCs) and voluntary counselling and testing centres were in place to offer tests for ANC, STIs, TB patients and the general population. In 2014, based on routine VCT data, none of the STI and TB patients tested positive for HIV while seven HIV cases were detected among ANC attendees. Challenges with surveillance in Bhutan include: the lack of any proper surveillance strategy; absence of M&E unit and technical capacity; lack of any epidemiologist in the country; difficulties in reaching out to key populations (especially MSM); and no definite group being identified as having high prevalence.

There exist, however, opportunities for improving surveillance since the population is small and manageable; no private practice exists; health care is free in the country; political commitment from the highest level and momentum from PLHIV are strong; HISCs have been established in districts with larger populations; health reporting systems are improving; and linkages between programmes are becoming stronger. In the future, Bhutan needs to make decisions regarding which surveillance activities to strengthen, conducting HSS or IBBS, conducting contact tracing, and ANC and blood transfusion testing in the country context. Technical support and resources are needed from partner organizations.

2. *India: HIV surveillance*

HIV surveillance in India was initiated in 1985 and has evolved since then. Between 1998 and 2015, HSS was scaled up rapidly among ANC and high-risk group populations, and 308 400 blood specimens from ANC attendees in the 2015 round of the HSS have been collected. HSS provides data related to levels and long-term trends of HIV among various risk groups, and some very basic demographic and socioeconomic profile information. It is the key to impact assessment and guiding programmes for priority setting and resource allocation. As a result, HSS data show a decline in HIV prevalence among all KPs and ANC attendees since 2003.

Table 7: Methodology of HSS in India

	Key populations	Bridge population	Pregnant women attending ANC
Sentinel site	TI projects	STI clinic; TI projects	Antenatal clinic
Sample size	250	250	400
Duration	3 months	3 months	3 months
Frequency	Biennial	Biennial	Biennial
Sampling method	Consecutive/ random	Consecutive	Consecutive
Age group	15–49 years	15–49 years	15–49 years
Testing strategy	Unlinked anonymous with informed consent	Unlinked anonymous with Informed consent	Unlinked anonymous
Blood specimen	Dried blood spot	Dried blood spot	Serum
Bio-marker	HIV	HIV	HIV, syphilis
Testing protocol	Two-Test Protocol	Two-Test Protocol	Two-Test Protocol

The HSS methodology is described in Table 7. Syphilis testing is a component of HSS among ANC and used for estimating maternal syphilis burden (elimination of congenital syphilis). Hepatitis C was included as an additional biomarker for specimens collected under HSS 2015. The domestic budget is primarily used for HSS and it costs about US\$ 7–8 per sample collected.

The IBBS 2014–2015 was conducted in six groups: female sex workers, MSM, PWID, transgender, migrants and currently married women in high out-migration districts. Hepatitis C was included as an additional activity under IBBS 2014–2015. IBBS provides data related to HIV prevalence levels; demographic and socioeconomic profile; risk behaviour and safe practices; STI-related knowledge and self-reported prevalence; HIV-related knowledge; stigma and discrimination, including knowledge of HIV testing and counselling centre as well as ART centres; experiences of

physical and sexual violence; and service utilization. The domestic budget has largely been used for IBBS and costs range from US\$ 70 to US\$ 75 per respondent.

A comprehensive “Integrated Information Management System” for IBBS has been developed for data management, analysis and dissemination of the findings. It enhances data quality due to entry-level validations; facilitates real-time compilation and aggregation of data; provides extensive scope for real-time process monitoring, feedback and corrections; ensures robust quality control and minimizes malpractices through GPS tracking and time-stamping; and makes available extensive granular data for investigation and troubleshooting.

Key learnings from regular surveillance activities in India are that surveillance is a long-term agenda and takes a while to stabilize, hence investment in system development is essential. Building the existing system and bringing complementary pieces together are key for surveillance system evolution. Making data quickly available for decision-makers and IT system support are vital for its efficiency and sustainability. In the future, India plans to consolidate gains and lessons from HIV surveillance activity, include behavioral questions for KPs in HSS, introduce point-of-care diagnostics, and strengthen linkages between testing and treatment databases for effective case reporting and patient tracking.

Surveillance data has been complemented by programme data, and research and evaluations for evidence-based decision-making in India. Triangulation of data from multiple sources has shaped the programme effectively by helping to prioritize geographies and populations most affected by the epidemic, implement new strategies to complement HIV interventions, and make mid-term corrections, if needed.

3. *Nepal: HIV surveillance*

Nepal has a concentrated HIV epidemic with an estimated 39 249 PLHIV in 2014. HIV surveillance is a key component of strategic information to understand the epidemic in Nepal, and is guided by the National Guidelines on HIV and STI Surveillance 2012. Since 2002, IBBS is regularly conducted with national consensus and covers all key populations, including female sex workers, clients of FSW, PWID, MSM/male sex

workers/transgender, and male labour migrants and their wives. Mechanisms of HIV case-reporting have been established and more than 250 sites reported in 2014. Size estimation has been the practice since 2003, with a new round planned for 2015. There is broader involvement of communities and stakeholders in size estimations. All this information is disseminated using epidemiological factsheets, web updates and country progress reports.

However, IBBS, size estimation and HSS in Nepal are dependent on external funding from the Global Fund, which will end in 2016. Maintaining expertise on surveillance due to staff turnover; changes in reporting structures and channels after integration with HMIS; and lack of unique ID for HIV case-reporting are other challenges that the HIV surveillance programme in Nepal is currently facing. In the future, Nepal will continue with the current system activities of IBBS, HSS and case reporting. Additionally, Nepal is planning HIV drug resistance surveillance. The frequency of these activities will be determined by WHO guidance. Support is needed to establish unique ID in the country and formulate new guidelines and recommendations.

4. *Indonesia: Experience in developing SIHA (information system on HIV/AIDS & STI)*

SIHA is a web-based information system developed to support recording and reporting of HIV/AIDS and STI services. Development of SIHA began in 1987 with AIDS surveillance; the period 2000–2010 saw the development and scale up of recording and reporting. In 2011–2014 SIHA was converted into a web-based platform. Currently, 371 ART centres, 1499 STI service providers, 1950 HIV testing and counselling centres, and 230 prevention of mother-to-child transmission of HIV (PMTCT) service-providers are using SIHA. SIHA, in offline format, is installed in providers' computers and used to input and store individual data. Monthly reports (aggregated) are generated and uploaded on SIHA online. The SIHA online database is stored in the Ministry of Health server and can be accessed and utilized by service providers. Modules in SIHA include:

- (1) Inputted offline by providers: HIV testing and counselling; ART; STI; PMTCT; methadone maintenance therapy; needle/syringe programme; AIDS case surveillance; PLHIV support; and antiretroviral logistics.
- (2) Inputted online by the District Health Office: Equipment and disposable materials; sero-surveillance; human resource; blood donor screening.

Health facilities can assign the national registration number for ART patients but this number still cannot link between services. Indonesia is in the process of developing the NIK (Citizen ID number) as a unique identifier code for all HIV services. SIHA is facing certain challenges related to completeness of data and reports, timeliness of reporting, data validation, data analysis and usage, human resources (skills and availability), and internet connection and computers. For SIHA to be successful, support is required for:

- expanding SIHA to more service-providers;
- conducting trainings for local facilitators in all provinces;
- capacity-building for national staff on data analysis and data usage; and
- developing a data analysis module in SIHA for the providers to conduct standard analysis.

Integrated HIV-hepatitis surveillance

Indonesia registers with moderate-to-high endemicity of hepatitis B and hepatitis C, and a concentrated epidemic of HIV. To find out the magnitude and trend of hepatitis B and C in high-risk populations and use this information for programme evaluation and planning, the Ministry of Health in 2014 integrated the hepatitis surveillance system with the robust HIV surveillance system. Hepatitis B, hepatitis C and HIV have similarities related to transmission modes, type of virus, prevention interventions and risk groups. Hepatitis surveillance, integrated with HSS and IBBS, was conducted among high-risk populations (commercial sex workers, PWIDs and transgenders), children below five years of age, and pregnant women at seven sites in seven provinces. Such integration was feasible and high-risk

populations did not reject hepatitis testing since there is less stigma and discrimination associated with this disease. However, there were challenges at the implementation level since integration needed more preparation, socialization, and capacity-building among operators. Data analysis and reporting was also challenging.

As hepatitis surveillance will be expanded to 14 sites in 2016 and 34 sites in 2017, challenges are being overcome by building the capacity of staff at the national and regional levels, integrating data analysis of HIV and hepatitis, and strengthening coordination at the district and provincial levels. In the future, there are plans to use data for programme planning and advocacy at the national and provincial levels, socialization at the national and provincial levels, and building capacity of CDC staff at the district level.

5. *Sri Lanka: STI surveillance and monitoring*

The National STI/AIDS Control Programme (NSACP) is a combined programme headquartered in Colombo and networks with 30 full-time and 20 branch clinics situated in all districts across the country. The STI monitoring system in Sri Lanka includes a combination of manual and electronic systems. Information management from STI clinics is done manually mostly; data are recorded in patient records and registers at STI clinics and reported quarterly to the Strategic Information Management unit at NSACP, where the data are analysed and disseminated. Standardized forms and guidelines are used at all clinics. Electronic patient information management system (PIMS) is currently functional in five clinics with support from WHO to maintain the software.

Data are disseminated using annual reports, local and international reporting, circulars to clinicians/laboratories and on the web. Data from 2014 show that there were 2886 reported cases of genital herpes and 1466 cases of syphilis, accounting for 30% and 15% of all reported cases of STIs respectively. Incidence of congenital syphilis has been low. It is difficult to interpret trends in data since cases of some STIs are reported to have increased in public clinics but not at testing sites operated by NGOs.

6. Thailand: National AIDS Programme (NAP) database and 'AIDS Zero' portal

The National Health Security Office (NHSO) was established in 2002 to create "health security" for every Thai citizen. In 2013, 99.9% citizens were covered by government health insurance schemes. The NHSO management of HIV/AIDS is responsible for developing and maintaining hospital and patient registration systems, an effective service protocol, service benefit package, IT system for the national AIDS programme (NAP), and monitoring and evaluation.

The NAP has an online programme with a central database. All the service providers are registered to the NAP. Service providers can access individual data to provide patient care and reimbursements. There are serious concerns about confidentiality of patient reports that has implications on stigma. People accessing health services are identified by personal identification (PID). It is needed only once during the first time of registration. PID number is encrypted before saving in the database. People testing positive for HIV are registered and provided new reference identification – the 'NAP number' – to replace the encrypted PID. Data users are provided user identification and can access data on patients only in their cohort.

All deaths are registered with the Ministry of Interior's (Mol) district office in order to obtain the death certificate. The data is transferred to the Mol's central database and then to NHSO on a daily basis. PID from mortality data is matched with PID in the NAP database.

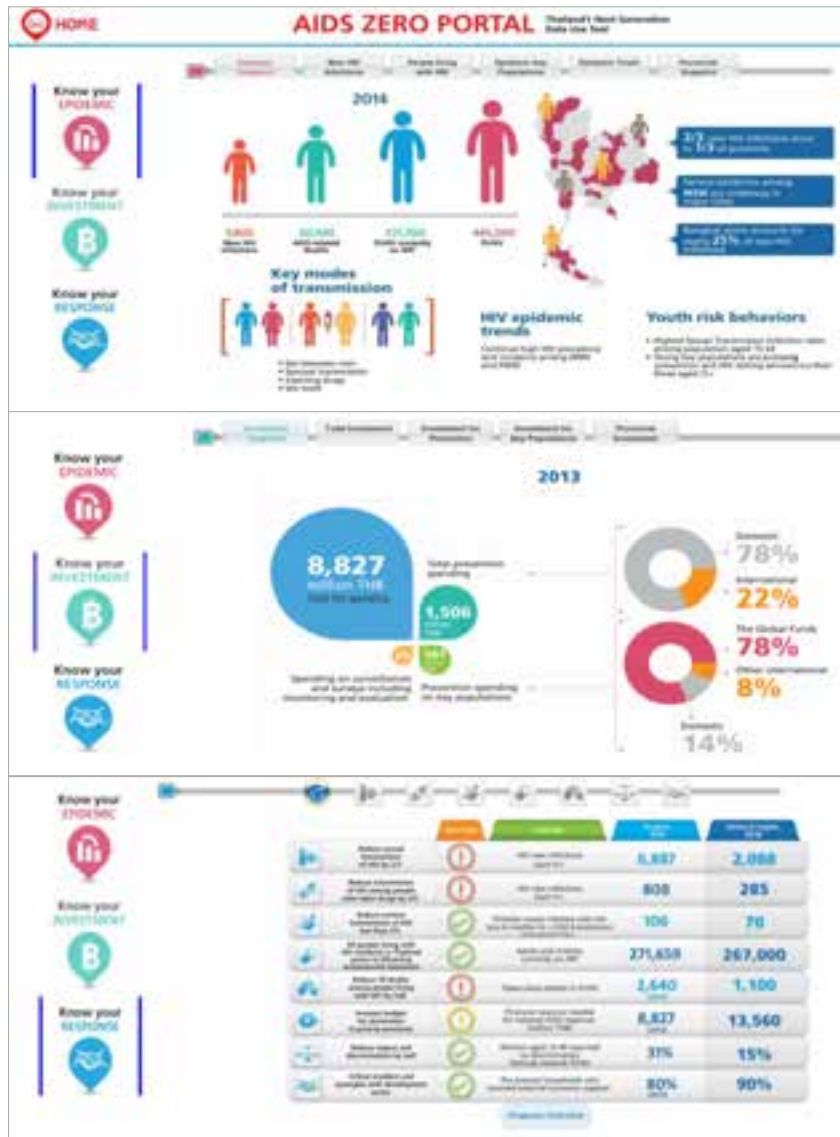
Data is utilized for multiple purposes. This includes:

- budget planning, based on volume of each drug used per year, drug prices, and trends in patient registration;
- drug price negotiations, drug procurement and inventory;
- monitoring the progress and planning actions at the national and regional levels;

- frequently reporting on key HIV services and indicators at the sub national and national levels and for international reports (e.g., GARPR, WHO AIDS Medicines and Diagnostics Service survey); and
- clinical papers, and clinical and billing audits.

Timely accessibility to data that are not fragmented and are complex to use is needed for effective data use. To increase the availability of high quality data to guide programme planning and intervention at all levels, Thailand recently launched the next generation data-use tool called the “AIDS Zero Portal” (Figure 4). This tool consolidates complex data from existing sources at one place and translates it into simplified interactive, visualized, real-time, easy-to-use information (pertaining to national, sub national and service-delivery levels).

Figure 4: AIDS Zero Portal (available from <http://www.aidszeroportal.org/>)



3.5 Cascade analysis and status of 90-90-90 targets

While the global 10 indicators cover the full spectrum of strategic information for HIV responses, HIV cascade monitoring focuses on access and retention to HIV prevention, testing, care and treatment services. The

90-90-90 targets form the core for the HIV cascade monitoring. In 2014, the WHO South-East Asia and Western Pacific regions, with support from partner organizations, developed and published the “Metrics for Monitoring the Cascade of HIV Testing, Care and Treatment Services in Asia and the Pacific”. This is the first systematic guide on cascade analysis and provides step-by-step guidance on presentation, analysis and use of data.

HIV cascade analysis is a useful tool to identify and quantify the magnitude of losses/gaps along the continuum of HIV prevention, care and treatment. There are two types of cascades:

- (1) **Cross-sectional cascades** look at aggregate data across the continuum of care at a specific point of time; the same individuals are not followed through the cascade. Sources of data for the indicators included in the cascade are:
 - prevention - surveys, programme records;
 - estimated number of PLHIV - national-level estimates (some have sub-national estimates) generated by Spectrum and other internationally recognized models;
 - number of PLHIV diagnosed - estimated using national data on HIV testing and surveys; needs updated case-reporting system (to remove duplicates and the names of those who died);
 - number of PLHIV enrolled in care and retained; viral load (VL) data - routine reporting from facilities, surveys.

Cross-sectional cascades, however, have a few limitations: they do not reflect programme performance for specific time periods; and their quality also depends on accurate and complete case report data and quality of other surveillance and programmatic data.

- (2) **Cohort-based cascades** follow a cohort of people diagnosed during a specific time period and track them (for at least a year) as they progress through the continuum of care. A series of consecutive cohorts can be graphed to compare progress in linkages and retention over time. Cohort-based cascades are not without limitations. They require unique identity codes, linked systems and an electronic database if the number of PLHIV is

large. Their quality is also dependent on the quality of reporting, and it is difficult to distinguish among persons lost to follow-up, or are re-engaging in care, or transferring between clinics, and also assess how many PLHIV died and at which point in the cascade.

Almost all countries in the Region have adopted the cascades concept and have developed cross-sectional national cascades with support from WHO, UNAIDS and other partners.

Tables 3 and 4 provide a full summary of cascade analysis of nine countries, including the status of continuum of HIV care and 90-90-90 targets, as well as the analysis of data sources and gaps. It reveals, among other things, that:

- Countries are in different stages of achieving the 90-90-90 targets by 2020.
- Countries are using different methodologies to calculate the indicators, especially for PLHIV diagnosed. There is a need to standardize the methodologies to facilitate better measurement.
- Coverage of HIV testing and treatment is low in many countries.
- Viral load-testing is unavailable or has limited availability.
- Prevention cascade is currently not available.

Table 3: Cascade analysis of HIV services and achievement of 90-90-90 targets in Member States (2014 data)

Country	Estimated PLHIV		Diagnosed		Linked to care		On ART			ART retention			Viral suppression		
	Number	% of PLHIV	Number	% of PLHIV*	Number	% of PLHIV	Number	% of PLHIV	% diagnosed*	Number	% of PLHIV	% on ART	Number	% of PLHIV	% viral suppressed (of VL tested)*
Bangladesh	8 935	100	3 111	35	1 517	17	1 287	14	41	NA	NA	NA	NA	NA	
Bhutan	1 000	100	403	40	307	31	167	17	41	145	15	87	NA	NA	
India**	2 117 000	100	1 400 000	67			747 175	36	50						
Indonesia	658 510	100	160 138	24	NA		50 400	8	31	35 935	5	71	NA	NA	
Maldives	30	100	8	27	8	27	8	27	100	8	27	100	8	27	100
Myanmar	212 560	100	NA		NA		85 626	40		70 213	33	82	8 295	4	87
Nepal	39 249	100	25 839	66	25 421	65	10 407	27	40	8 731	22	84	1 004	3	84
Sri Lanka	3 336	100	1 737	52	825	25	644	19	37	586	18	91	483	14	83
Thailand	445 642	100	356 514	80	301 959	68	271 652	61	76	211 546	47	78	203 264	46	96
Timor-Leste	464	100	NA		NA		173	37		NA	NA		NA	NA	

S Source: CARPR 2015, and as reported by the participants.

Notes: PLHIV – people living with HIV; ART – antiretroviral therapy; VL – viral load; NA – not available;

*Highlight the status of achieving 90-90-90 targets

**WHO, HIV/AIDS factsheets, 2015. <http://www.searo.who.int/entity/hiv/data/factsheets/en/>

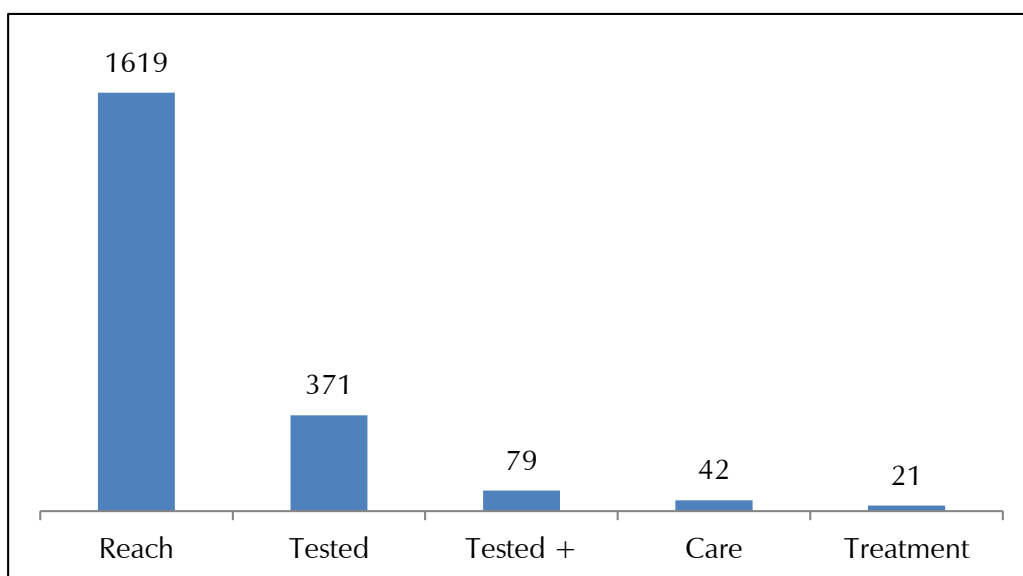
Table 4: Data sources for cascade analysis

Country	Estimated No. people living with HIV	Diagnosed	Linked to care	On ART	ART retention	Viral suppression
Bangladesh	UNAIDS estimate	Programme data; Cumulative number of people diagnosed with HIV (excluding deaths)	Programme data	Programme data	NA	NA
Bhutan	UNAIDS estimate (estimate size small and not reliable)	Programme data; using unique ID code or UIC (no duplication)	Programme data; using UIC (no duplication)	Programme data; using UIC (no duplication)	Programme data; using UIC (no duplication)	NA
India	UNAIDS estimate	Programme data	Programme data	Programme data	Programme data	Programme data (Currently targeted VL monitoring for ART failure; process initiated for routine VL monitoring)
Indonesia	UNAIDS estimate (issues in data inputs)	Programme data; Cumulative number of people ever diagnosed with HIV (excluding deaths)	NA	Programme data; but duplication between providers cannot be tracked	Programme data; but data not available from all service providers	NA
Maldives	UNAIDS estimate (estimate size small and not reliable)	Programme data (from case reporting)	Programme data (from case reporting)	Programme data (from case reporting)	Programme data (from case reporting)	Data from case reporting; VL done in Mumbai
Myanmar	UNAIDS estimate	NA (data are collected but not analyzed)	NA	Programme data (collected quarterly)	Programme data (incomplete cohort data)	Laboratory data (limited availability and use of VL for monitoring/ART failure)
Nepal	UNAIDS estimate	Routine HIV reporting through HMIS; cumulative number of people ever diagnosed with HIV (excluding deaths)	ART register	ART register	ART register	ART register (limited availability)
Sri Lanka	UNAIDS estimate	Programme data	Programme data	Programme data	Programme data	Programme data
Thailand	UNAIDS estimate	Programme data	Programme data	Programme data	Programme data	Programme data

Source: Based on the inputs from group exercises of participants.

Capacity and use of national-level cascade data are limited, particularly at the sub national level. In concentrated epidemic settings, where improving access to the entire HIV cascade of services among KPs is essential for total epidemic control, national HIV cascade data often mask significant cascade gaps among KPs. Limited attempts have been made to generate continuum of care at the sub national level for community programmes and among KPs. With the expansion of community-based HIV testing and ART programmes, continuum of care monitoring at the community level will assume importance in the future.

Figure 3: Rainbow Sky (RSAT) continuum of care among MSM



Source: Presentation, Stephen Mills, Regional Workshop on Strategic Information of HW, STI and Hepatitis, Bangkok, 12–14 October 2015.

Figure 3 shows an example of HIV cascade dashboard monitoring progress towards 90-90-90 among MSM reached through Rainbow Sky (RSAT), Bangkok, Thailand. While the reach to testing services ratio is low, high case-finding suggests good outreach targeting. Also ART initiation is low, suggesting that the test and treat policy needs to be scaled up at the implementation level.

Box 2

One of the challenges at the local level is estimating the number of people living with HIV (the total and the figure disaggregated by KPs). An assessment was conducted in Indonesia to assess the scope of elevating the role of HIV testing data for surveillance purposes. Sites which test clearly defined populations (e.g., NGO clinics testing KPs) and strong documentation disaggregating KPs and/or the reason for testing were selected. Data from 2010–2014 were examined. Positivity was adjusted to account for testing coverage, assuming equal chance of testing among PLHIV and people not living with HIV.

Five key scenarios emerged from Indonesia female sex worker data (**Table**) and interpretations were made about HIV prevalence. In situations where testing of KPs can be distinguished from non-key populations, testing coverage of KPs has been moderately high for several years (e.g., >30%). Where the approximate population size of KPs is known, we can approximate HIV prevalence from HIV positivity by accounting for those already diagnosed.

Table: Interpretation about HIV prevalence based on HIV testing

Number of sites	Scenarios	Interpretation about HIV prevalence
40	High testing coverage for 3+ years; HIV positivity is consistently moderate to high (3+%)	After several years, all existing PLHIV should be diagnosed and new cases are likely to be new infections (or new to the area)
10	Testing coverage is moderate; HIV positivity appears to be declining or stable	A declining or stable positivity is likely to mask increasing prevalence
17	Testing coverage is low; HIV positivity is high and unstable	Testing is likely to be highly selective and unrelated to prevalence level or trend
2	Testing coverage is low but of a reasonable size (>100); HIV positivity is low and stable	HIV positivity is likely to reflect in the prevalence

Continuum of care for hepatitis

Limited data are available for monitoring the outcomes along the continuum of prevention and care for hepatitis (**Table 6**). Overall, some progress in prevention of viral hepatitis has been observed, expansion of care and treatment is in a very early stage, and documentation of progress till date is needed. Countries need to set up data collection and analysis systems and coordinate with those handling the information.

Table 6: Availability of data on indicators along the continuum of care for hepatitis

Level	Indicator	Observations
Prevention outcome	Vaccination (third dose coverage in infants)	Good results, but data with Expanded Programme of Immunization (EPI)
	Injection safety at facility level	Progress, but quantified estimates missing
	Harm reduction (needle distribution among PWID)	Limited number of projects (four countries with some programme), integration with HIV programme needed
Testing outcome	Knowledge of hepatitis B and C status	Mostly unknown (in at least seven countries); rough estimate of 30% in one Member State
Treatment outcome	Treatment coverage	Treatment programme in some Member States, very limited coverage data (20% for hepatitis B and 33% for hepatitis C in one Member State)
Cure/ suppression		One Member State with registry on cure, no data

3.6 HIV case-based reporting and monitoring

One of the key bottlenecks for monitoring the cascade of HIV services is the lack of capacity to track HIV cases individually and de-duplicate those reported in the system. Investments in HIV case-based reporting and patient tracking with unique IDs can pay huge dividends for health systems strengthening and achieving universal health coverage. HIV case reporting exists in all countries but greatly varies in terms of data compilation,

synthesis and utilization. It has been under-utilized in the past due to its caveats (such as duplication, weak death registries, and biases due to expansion of testing in certain areas). There is a need to strengthen the case-reporting systems in the light of data need for monitoring the continuum of care and the 90-90-90 targets.

HIV case-based reporting (surveillance) has many advantages:

- it provides an accurate (unduplicated) number of persons diagnosed with HIV/AIDS;
- it collects routine data from multiple sources/sites and combines into longitudinal data along the care cascade;
- it generates data at the sub national and national levels;
- it can be used to generate estimates on HIV prevalence and incidence;
- it is cost-effective; and, most importantly;
- it enables to track individual HIV cases across the continuum of care and improve the services accordingly.

WHO recommends case-based surveillance as part of a comprehensive system of second-generation HIV surveillance.

Multiple patient monitoring systems are already in place in countries. Also, many countries are moving from paper to electronic patient registries that have increased the level of sophistication in both functionality and reports. For better health information systems and improved decision-making, multiple registries need to be consolidated over time using unique ID codes (UIC). WHO is planning to formulate a HIV Patient Monitoring and Case Surveillance Guidance aimed at consolidating HIV patient monitoring and case-reporting systems along the continuum of HIV care, and also for updating all operational tools such as patient cards, registers, reporting templates, etc.

Box 3

Unique ID code (UIC)

- The UIC will be in use for 300+ years, so size it appropriately.
- Evaluate universal versus health-only ID.
- Identify multiple ID registration points, such as during pregnancy, at birth, at issuance of drivers' license, in the hospital OPD, passport registration, etc.
- Think about existing health records and how to index them to the new ID.
- Allow for and implement strong de-duplication protocol.
- Avoid embedding any data in the number.
- Use a check digit at the end of the ID to detect key punching mistakes.
- Couple UIC with ID verification (photo, fingerprint and other biometric marker).

3.7 Use of information technology for generating and use of HIV, hepatitis and STI strategic information

Regional HIV Intelligence Platform

To achieve the fast-track goals, the focus has shifted towards (a) locations and populations that matter the most, (b) review and analysis of data at the local level, and (c) real-time data monitoring for rapid corrective action backed by capacity-building and approval from higher levels.

The current information management systems are characterized by the following:

- fragmented reporting systems;
- huge number of indicators;
- periodic reporting that does not allow quick response;
- inadequate geospecific information;
- limited use of data at the sub national level.

Thus, there is a need to leverage technology to collect information on critical areas from the most decentralized level in real time and use it to take action. The WHO South-East Asia Region aims to pilot a “Regional HIV Intelligence Platform” that will capture geo-tagged information on critical intelligence indicators through mobile-based reporting solutions, which will be available at all levels of programme management in real time, and with automated alerts for corrective action. Objectives of the platform are to:

- (1) establish evidence-based mechanism to fast-track country responses;
- (2) enable real-time, geo-enabled programming at the local/sub national level; and
- (3) operationalize end-game strategies.

A key feature of this platform is “real-time monitoring”, which refers to making data instantly available and actionable when it is most needed, across all levels of decision-making. Considerations in real-time monitoring include data security and confidentiality; programme readiness and sub national capacity; community engagement and ownership; legal and financial risk management; and data inept for audit/project evaluation. Other key features include:

- highly selective critical indicators required for taking action;
- implementation only in prioritized locations and populations;
- daily reporting of critical indicators;
- regular reporting of outcome indicators, validated by review/survey;
- automated dashboards and alerts to all levels.

Critical intelligence indicators that will be included are:

Thematic area	Critical indicator
Need	Size, prevalence, new infections (one-time/annual)
Input	Funds, human resource, commodities (monthly)
Coverage	KP full reach: Contact, condoms/NS, STI, testing (daily) Cascade: Detection, care, treatment, viral load (daily)
Outcomes	Prevention adherence: Consistent condom/NS use (daily) Treatment: ART retention and viral suppression (daily)

Priorities and technical support needs

During group discussions, countries identified priority actions for policy, programme and strategic information on HIV (include TB/HIV), hepatitis and STI, and the need for technical support (Table 8).

Table 8: Priority actions for policy, programmes and strengthening strategic information in Member States

Country	Data strengthening priorities	Policy and programmatic priorities	Technical support
Bangladesh	<ol style="list-style-type: none"> 1. Data management with unique ID through district health information system (DHIS) 2. IT logistics at field level 3. Regular hepatitis surveillance 	<ol style="list-style-type: none"> 1. Increase HIV testing 2. No interruptions in treatment 3. Enhance social mobilization to reduce stigma 4. Resource allocation and financing 5. Improve health system to prevent stock-outs 6. Public-private partnerships 	<ol style="list-style-type: none"> 1. Information technology 2. Establish VL testing

Country	Data strengthening priorities	Policy and programmatic priorities	Technical support
Bhutan	<ol style="list-style-type: none"> 1. Strengthen estimation 2. Assessment of high-prevalence population 3. Initiate STI and acute hepatitis surveillance 	<ol style="list-style-type: none"> 1. Strengthen ART sites with human resources 2. Strengthen VL facility 3. Strengthening the linkages between MCH, TB and HIV programmes 4. Linking HIV programmes across borders 	<ol style="list-style-type: none"> 1. Identification strategy in general and key populations 2. Training
India	<ol style="list-style-type: none"> 1. De-duplication of diagnosed cases 2. Loss to follow-up estimation (before taking ART) 3. Referral and linkages analysis by typology 4. VL estimation of all PLHIV 	<ol style="list-style-type: none"> 1. Refine testing strategy to expand reach 2. Extended quality improvement activities to improve testing and linkages to ART 3. Expansion of VL 4. Strengthen HIV surveillance for additional biomarkers like STI and Hepatitis 	<ol style="list-style-type: none"> 1. Strengthen district-level data analysis 2. Strengthen linkages between ICTCs & ART 3. Integrated surveillance system
Indonesia	<ol style="list-style-type: none"> 1. Strengthen data staff in districts 2. Expand SIHA and develop additional modules to de-duplicate records and for data analysis 3. Link SIHA and TB information system 4. Revise M&E guidelines and roll out web-based M&E system 5. Develop guidelines for HIV-hepatitis integration and for STI surveillance 6. Review existing hepatitis surveillance system (acute and chronic) 	<ol style="list-style-type: none"> 1. Expand services with VL testing capability 2. Strengthen treatment, especially to start and maintain ART 	<ol style="list-style-type: none"> 1. Conduct training for local facilitator in all provinces 2. Capacity-building for national staff on data analysis and data usage 3. Develop analysis data module in SIHA 4. SIHA expansion to more sites

Country	Data strengthening priorities	Policy and programmatic priorities	Technical support
Maldives	<ol style="list-style-type: none"> 1. Key population size estimates 2. Determine the extent to which KPs are captured in the general population testing 3. Capacity-building and resource development for improving surveillance activities 4. Improving data collection across the country 	<ol style="list-style-type: none"> 1. Outreach to improve diagnosis for KPs 2. Establish more drop-in and testing centres and train more personnel for HIV testing activities 3. Maintaining confidentiality in a small country 4. Prevention on new infections in the wake of increasing drug use, sex work, migration 5. Establish VL monitoring capacity 6. Reduce stigma and discrimination 7. Capacity-building and resource development for national programme, and linking it with TB and reproductive health programmes 	<ol style="list-style-type: none"> 1. Technical support for clinical care to train more clinicians for providing care and treatment 2. Electronic data system 3. Training of personnel in all aspects of surveillance
Myanmar	<ol style="list-style-type: none"> 1. Case-based reporting with unique identifier system 2. Electronic recording system 3. Strengthening human resource to reinforce and sustain M&E system 4. Strengthen vital registration 5. Implement a detailed surveillance and research plan for 5 years, including programmatic mapping and sub national population size estimate 	<ol style="list-style-type: none"> 1. Confidential systems to track and monitor activities and individuals across the continuum 2. Address key gaps in testing and treatment, VL, follow-up of HIV-exposed infants, and engaging KPs 3. Establish appropriate service delivery models for high-, middle- and low-burden townships and communities 	<ol style="list-style-type: none"> 1. UIC 2. Integration of HIV, TB and malaria into DHIS 2 3. Decentralize DHIS 2 to the township level 4. Human resource capacity-building and recruitment 5. Financing for equipment

Country	Data strengthening priorities	Policy and programmatic priorities	Technical support
Nepal	<ol style="list-style-type: none"> 1. Patient-tracking system with a unique identifier 2. Sub national level information for cascade 3. Updating strategic information guidelines 4. Develop National Hepatitis C treatment protocol 5. Regularize the reporting of STI through HMIS 6. Integrate hepatitis C component in IBBS among PWIDs 	<ol style="list-style-type: none"> 1. Scale-up HIV testing services in high-burden areas and populations 2. Improve and scale-up of treatment services with comprehensive care 3. Decentralize VL testing 4. Strengthen linkages between HIV and TB programmes 	<ol style="list-style-type: none"> 1. Patient tracking system with a unique identifier 2. Initial establishment support for linkage of hepatitis B and C programme 3. Updating strategic information guidelines
Sri Lanka	<ol style="list-style-type: none"> 1. Convert to electronic system for testing, HIV care and ART programme 2. Data disaggregation by KPs 3. Improving validity and reliability of estimates for low-prevalence setting 4. Improve IT infrastructure at the facility level 5. Include hepatitis testing in HSS and IBBS surveillance 6. Conduct special surveys of hepatitis and STIs in vulnerable populations 	<ol style="list-style-type: none"> 1. HIV should be a notifiable infection 2. HIV testing as a routine investigation in health care 3. All testing laboratories should be accredited 4. Establish linkages between HIV, TB and reproductive health programmes 5. Human capacity-building at the national and sub national levels 	<ol style="list-style-type: none"> 1. Develop an electronic system for HIV care and ART programme 2. Laboratory accreditation 3. Updating the testing algorithm
Thailand	<ol style="list-style-type: none"> 1. Develop HIV case-based report among KPs 2. Improve sample size of transgender 3. Link HIV and TB database to get data on TB/HIV co-infection prevalence, TB/HIV death and TB screening in HIV clinics 4. Capacity-building of health-care personnel on STI diagnosis and treatment to improve case reporting 5. Develop hepatitis B & C surveillance 	<ol style="list-style-type: none"> 1. Improve early testing and early treatment, and VL coverage 	<ol style="list-style-type: none"> 1. Update knowledge on data management and surveillance 2. Share experience or site visits in successful countries 3. IT and data management

4. Conclusions and recommendations

Member States of the WHO South-East Asia Region have been striving to achieve the Fast-track 90-90-90 targets for HIV, and the health-related SDGs including HIV, hepatitis and STI. There are increasing needs, as well as opportunities, for strengthening the generation, collection and use of strategic information for HIV, hepatitis and STI programmes in countries, which would ultimately improve services to people affected and infected.

Strengthening strategic information at decentralized levels for programme improvement

To achieve the fast-track HIV goals, and the health-related SDGs, the evidence management and decision-making processes need to evolve to a stage where strategic information on critical areas of the HIV, hepatitis and STI epidemic and responses from the most decentralized level is obtained in real time and used to guide local responses. Programme activities need to focus on and prioritize locations and populations that matter the most. There is the need for rapid diagnosis of critical failures through real-time, location-specific monitoring at all levels and rapid corrective action at the sub national level. WHO is working with countries and partners to develop these tools, and aiming to employ the most recent information technologies for real-time programme monitoring at decentralized levels.

Intensifying the monitoring of the continuum of HIV prevention, treatment and care services

There are gaps in the measuring and monitoring of the continuum of HIV care and treatment services in terms of data availability. While measuring and monitoring the essential prevention services should not be overemphasized, they are currently neglected. Continued efforts are needed to strengthen and harmonize the measurement and monitoring of the cascade of HIV services, particularly at decentralized levels. Data need to be triangulated from different sources (e.g., estimates, population-based surveys and surveillance, programmes data, and community-based programmes). The focus of these efforts should be on identifying gaps and improving HIV prevention, testing, care and treatment services: improving HIV testing services to expand the reach, especially for KPs; strengthening linkages between HIV, TB and MCH programmes; and expanding VL testing.

Strengthening and integrating surveillance for HIV, STI and hepatitis as much as possible

Between 2010–2014, HIV surveillance data in the Region has improved, and more granular and disaggregated data are available. However, challenges related to periodicity and non-comparability of HIV surveillance data for trend analysis remain. STI estimation and programme data from GARPR have also improved but STI surveillance needs to be strengthened. Some countries in the Region are taking advantage of HIV surveillance to conduct surveillance for hepatitis, given the limited resources available for hepatitis surveillance.

Developing hepatitis surveillance or integrating it with HIV surveillance for some KPs has become important data strengthening priorities for countries in the region; and technical and financial support from WHO and partner organizations are needed to implement them. Opportunities to institutionalize and integrate surveillance for HIV, STIs and hepatitis need to be more actively explored. Additionally, the level of integration and populations to be covered should depend on the epidemic situation in the countries.

Revitalizing HIV case-reporting/case-based surveillance

Lack of functioning HIV case-based reporting systems is recognized as one of the major gaps in HIV surveillance and monitoring. While HIV case-reporting is practised in many countries in the Region, the data vary in quality, completeness and timeliness, primarily due to the lack of unique identifiers and inability to link the individual HIV case across the cascade of HIV services. Countries need to strengthen individual case-reporting systems with the use of unique identifiers for monitoring the continuum of care and the 90-90-90 targets.

Exploring appropriate information technology for generation and use of data

Health information systems in countries are increasingly moving from paper-based to electronic systems for data collection and reporting. Now, new information technology tools are emerging and available, giving us much-needed platforms to improve the capacity of individual patient

monitoring and reporting, and data use and analysis for data-driven decision-making. Such data platforms also improve transparency and accountability. There is potential for using geo-tagged information on critical intelligence indicators through mobile-based reporting solutions, with automated alerts for corrective action.

Annex 1

Agenda

Regional and Global progress on HIV, STI and HIV co-infections epidemic and response

- Strategic information for monitoring progress of HIV/hepatitis/STI epidemic and response in the South East Asia Region
- Status of HIV surveillance, monitoring 90-90-90 and fast track indicators towards ending AIDS in the Asia Pacific Region
- Monitoring progress on addressing TB/HIV co-infections in the SEA Region
- Global progress update on HIV, hepatitis and STI surveillance, monitoring and reporting (and SDG monitoring framework)
- Global update on STI surveillance and GASP monitoring
- Integration of HIV, hepatitis and STI data collection and reporting: Opportunities and challenges

Normative guidance on HIV and Hepatitis Strategic Information

- Introduction of the Consolidated HIV Strategic Information Guidelines and roll-out plan
- Introduction of guidance and approaches for cascade analysis
- Global developments on HIV surveillance, patient monitoring and case reporting
- Global guideline on hepatitis surveillance and M&E, indicators for discussion

Using IT for strengthening HIV programme monitoring

- Strengthening HIV patient monitoring in the context of overall health information system
- The use of DHIS2 for programme monitoring and tracking of HIV services

- Country experience
 - Indonesia
 - Thailand

HIV surveillance – lessons learnt and future directions

- Country presentations:
 - India
 - Nepal
 - Bhutan
- Country assessment and future directions of HIV surveillance in the South-East Asia Region
- Facilitated discussion: the roles of different surveillance methods and future directions in different countries

Group work and panel discussion: sources, analysis and gaps for HIV, hepatitis and STI data

Group work 1: Top 10 HIV, hepatitis and STI indicators at the national and sub-national levels: data availability, issues, gaps and ways for improvement

- Panel discussion: Data availability, issues, gaps and opportunities to improve data generation and analysis for HIV, hepatitis and STI programmes (in response to group work presentations).

Maximizing opportunities for strengthening integrated surveillance and monitoring for HIV/STI/hepatitis

- Country experience sharing:
 - STI monitoring and surveillance system of Sri Lanka
 - Integrated HIV/hepatitis surveillance survey in Indonesia
 - FHI360: Monitoring HIV services with involvement of key populations
 - Use of programme data analysis for decision-making in India

Country intelligence and use of programme data for monitoring

- Regional database for real-time programme monitoring: - challenges and opportunities for data capture, monitoring and use of data at local level
- Demonstration of the AIDS Zero Portal of Thailand
- Demonstration of the prototype of the HIV country intelligence platform
- Discussions

Group work 2: Identify challenges/gaps/opportunities and technical support needs for improving SI of HIV, hepatitis and STI at the country level

- Maximizing opportunities of integration and synthesization of surveillance and M&E to strengthen the strategic information of HIV, hepatitis and STI.
- Reporting back
- Closing session

Annex 2

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The WHO Regional Office for South-East Asia convened a regional workshop on strategic information of HIV, hepatitis and STIs in Bangkok, Thailand, on 12–14 October 2015. Officers from the national HIV, hepatitis and STI programmes of eight Member States of the South-East Asia Region – Bangladesh, Bhutan, India, Indonesia, Maldives, Nepal, Sri Lanka and Thailand – participated.

The workshop aimed to strengthen the strategic information systems of the HIV, viral hepatitis and STI programmes in Member States. Participants identified post-2015 priorities for strategic information on the three disease programmes.



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