



सत्यमेव जयते

2014-15

HIV Sentinel Surveillance

A Technical Brief



National AIDS Control Organisation

India's voice against AIDS

Ministry of Health & Family Welfare, Government of India

www.naco.gov.in



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सत्यमेव जयते

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Foreword

The national response to the HIV epidemic is guided *inter alia* by data obtained through HIV Sentinel Surveillance (HSS). This surveillance, conducted annually since 1998, generates data to improve tracking of HIV trends, as well as to improve the understanding of the epidemic's characteristics and its level of proliferation. From 2008 onwards it has been conducted once in 2 years, but the system witnessed major expansion in the number of sentinel sites covered as well as enhancement in data collected along with standardized guidelines and tools, rigorous monitoring and supervision, and increasing use of information technology.

The 2015 Technical Brief provides the data from the most recent, 14th round of HIV Sentinel Surveillance among ANC clinic attendees. Findings in the technical brief clearly show that India's success story of halting and reversing the epidemic continues. At the same time, it also indicates the challenges which State and District programme managers need to take into cognizance.

Blood samples collected under the ANC HSS are tested for Syphilis also. This technical brief, for the first time, also presents the results of the Syphilis test that will be extremely useful to the programme, specially in the context of focus on the elimination of congenital Syphilis.

This technical brief is an output of collective efforts of many teams. First and foremost, efforts of medical officers, nurses, counselors and laboratory technicians, who implement the surveillance programme maintaining highest possible quality standards, are acknowledged. State AIDS Control Societies and District AIDS Prevention Control Units facilitate timely implementation of surveillance activities and we congratulate all Project Directors and their teams for owning up the activity and ensuring its timely completion. We appreciate the role of regional & nodal institutes as they bring the highest scientific rigor in the surveillance process through intensive training and supervision. We thank CDC, WHO and UNAIDS for the technical support extended during implementation of 14th round of implementation. Last but not the least, I commend Dr. Neeraj Dhingra (Deputy Director General, Monitoring & Evaluation, NACO, Government of India) for his leadership in timely implementation, analysis and publication of this technical brief.

This technical brief is being published at a very important juncture when NACO is almost halfway through implementation of the National AIDS Control Programme Phase IV. Also this data will be used for estimating key epidemiological parameters, such as HIV burden, new infections and deaths due to AIDS, as well as need for ART and PPTCT. Having high quality, comparable data from a robust HIV surveillance system as well as dissemination of the same to policy makers and program managers is fundamental in this endeavor. We are confident that this brief will be carefully studied by all stakeholders and be of use to them and the programme.

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अपनी एचआईवी अवस्था जानें, निकटतम सरकारी अस्पताल में मुफ्त सलाह व जाँच पाएँ

Know your HIV status, go to the nearest Government Hospital for free Voluntary Counselling and Testing

Acronyms

AIDS	:	Acquired Immuno-Deficiency Syndrome
AIIMS	:	All India Institute of Medical Sciences, New Delhi
ANC	:	Antenatal Clinic
CDC	:	Centers for Disease Control and Prevention
CI	:	Confidence Interval
DAPCU	:	District AIDS Prevention and Control Unit
EQAS	:	External Quality Assurance Scheme
FSW	:	Female Sex Worker
HIV	:	Human Immuno-deficiency Virus
HRG	:	High Risk Group
HSS	:	HIV Sentinel Surveillance
ICMR	:	Indian Council of Medical Research
IDU	:	Injecting Drug User
LDT	:	Long Distance Trucker
M&E	:	Monitoring and Evaluation
MSM	:	Men who have Sex with Men
NACO	:	National AIDS Control Organisation
NACP	:	National AIDS Control Programme
NARI	:	National AIDS Research Institute, Pune
NICED	:	National Institute of Cholera and Enteric Diseases, Kolkata
NIE	:	National Institute of Epidemiology, Chennai
NIHFW	:	National Institute of Health and Family Welfare, New Delhi
NIMS	:	National Institute of Medical Statistics, New Delhi
OBG	:	Obstetrics & Gynecology
PGIMER	:	Postgraduate Institute of Medical Education and Research, Chandigarh
RI	:	Regional Institute
RIMS	:	Regional Institute of Medical Sciences, Imphal
RPR	:	Rapid Plasma Reagin
SACS	:	State AIDS Control Society
SMM	:	Single Male Migrant
SRL	:	State Reference Laboratory
STD	:	Sexually Transmitted Disease
TG	:	Transgender
ToT	:	Training of Trainers
TRG	:	Technical Resource Group
UNAIDS	:	Joint United Nations Programme on HIV/AIDS
WHO	:	World Health Organisation

Executive Summary

1. India has one of the world's largest and most robust HIV Sentinel Surveillance (HSS) Systems. Since 1998 it has helped the national government to monitor the levels and burden of HIV among different population groups in the country and craft effective responses to control HIV/AIDS. It is implemented across the country with support from two national institutes and six regional government public health institutes of India.
2. The 14th round of HSS was implemented during 2014-15 at 776 Antenatal Clinic (ANC) Surveillance Sites covering 572 districts across 35 States and UTs in the country. For High Risk Groups (HRGs) and Bridge Population, National Integrated Biological and Behavioral Surveillance (IBBS) was carried out as a strategic shift to strengthen the surveillance system among these groups.
3. The methodology adopted during HSS 2014-15 continues to be Consecutive Sampling with Unlinked Anonymous. Specimens were tested for HIV following two test Protocol. A total of 3,04,982 ANC samples were tested from 767 valid sites during HSS 2014-15.
4. The overall HIV prevalence among ANC clinic attendees, considered proxy for prevalence among general population, continues to be low at 0.29% (90% CI: 0.28%-0.31%). The highest prevalence was recorded in Nagaland (1.29%), followed by Mizoram (0.81%), Manipur (0.60%), Gujarat (0.56%) and Chhattisgarh (0.41%). Telangana (0.39%), Bihar (0.37%), Karnataka (0.36%) and Andhra Pradesh (0.35%) were other states which recorded HIV prevalence of more than the national average. Maharashtra (0.32%), Punjab (0.32%), Rajasthan (0.32%) and Tamil Nadu (0.27%) recorded HIV prevalence similar to national prevalence. Haryana (0.25%), Delhi (0.25%) and Odisha (0.24%) recorded HIV prevalence slightly lower than the national average.
5. Site-wise analysis indicate that a total of 70 sites had shown HIV prevalence of 1% or more among ANC clinic attendees. Of these, 32 sites were in the moderate and low prevalence states of Assam, Bihar, Chhattisgarh, Delhi, Gujarat, Haryana, Jharkhand, Madhya Pradesh, Meghalaya, Odisha, Punjab, Rajasthan, Uttar Pradesh and Uttarakhand. Nine sites across the country recorded a prevalence of 2% or more including 3 sites, in the low prevalence states of Chhattisgarh, Gujarat and Rajasthan.

6. Data from consistent sites was analysed to interpret HIV trends. HIV prevalence among ANC clinic attendees continues to be on the decline nationally as well as in erstwhile high prevalence states of Andhra Pradesh, Maharashtra, Karnataka and Telangana. In the northeastern states of Manipur, Mizoram and Nagaland, long term trend continues to be declining; however, stabilization in trend in recent past has been noticed in these states. Trend appeared to be rising in moderate and low prevalence states of Bihar, Delhi, Gujarat, Haryana, Punjab, Rajasthan and Uttar Pradesh.
7. The number of valid surveillance sites among ANC has increased from 416 sites in 2003 to 566 in 2006, and finally to 767 sites in HSS 2014-15. However, in the same period, number of ANC HSS sites showing a prevalence of 1% or more has decreased from 140 in 2003 to 70 in 2014-15, consistent with long term declining prevalence trend.
8. Overall sero-positivity of Syphilis at national level was recorded at 0.14% (90% CI; 0.13-0.15). Madhya Pradesh (0.98%) had the highest sero-positivity. Seven states recorded Syphilis sero-positivity above the national average.
9. The HIV epidemic in the country continued to be heterogenic in terms of geographical spread. Sustained declining trend among ANC clients, considered as proxy for general population, is consistent with India's strategy of large scale implementation and high coverage during National AIDS Control Programme (NACP)-III & IV. However, there is diversity in level and trends of the HIV epidemic across states and districts. The Programme needs to take note of these diversities and take informed decisions to further change the trajectory of HIV epidemic as it aims to achieve NACP IV goal.

1. Introduction

The 14th round of HIV Sentinel Surveillance (HSS) was implemented among Antenatal Clients (ANC) in 35 States and Union Territories (UTs) of India in 572 districts during January-March 2015 except for Andhra Pradesh and Telangana, where HSS was implemented during March-May 2015. This report presents the findings of the 14th National HSS among ANC clinic attendees and shows prevalence levels and trends of the HIV epidemic from 2003 to 2014-15. Though the 14th round of HSS was carried out among ANC only, this report also includes data on HIV prevalence among High Risk Groups (HRG) and Bridge Populations from earlier rounds of HSS.

1.1 Objectives

- To understand the levels and trends of the HIV epidemic among the general population, bridge population as well as high risk groups in different states.
- To understand the geographical spread of the HIV infection and to identify emerging pockets.
- To provide information for prioritization of Programme resources and evaluation of Programme impact.
- To estimate HIV Prevalence and HIV burden in the country.

1.2 Applications

- To estimate and project burden of HIV at state and national levels.
- To support programme prioritization and resource allocation.
- To assist evaluation of programme impact.
- Advocacy.

1.3 Expansion

Over the past three decades, HIV Sentinel Surveillance in India has evolved significantly. While HIV surveillance, for the first time, was initiated in India by the Indian Council of Medical Research (ICMR) as early as 1985, sentinel surveillance was conducted by National AIDS Control Organisation (NACO) at 52 sites in selected cities during 1993-94. In 1998, NACO formalized annual sentinel surveillance for HIV infection in the country with 176 sentinel sites (of which 92 were ANC sites).

During the 14th round of HSS implementation, 572 districts had at least one ANC surveillance site, 57% of them were in northern, eastern and central regions, 30% were in the southern and western regions and the remaining 13% were in the north-eastern region of the country. Figure 1 a-c depicts the changing pattern of distribution of ANC surveillance sites in the country. The details on state wise distribution of HSS sites for the year 2003, 2006, 2010-11 and 2014-15 are provided in Annex-1.

Table 1: Expansion of Surveillance sites in India

Site Type	2002	2003	2004	2005	2006	2007	2008-09	2010-11	2012-13	2014-15
STD	166	163	171	175	251	248	217	184	13	–
ANC	200	476	390	391	628	646	660	696	750	776
IDU	13	18	24	30	51	52	61	79	–	–
MSM	3	9	15	18	31	40	67	96	–	–
FSW	2	32	42	83	138	137	194	261	–	–
Migrant	–	–	–	1	6	3	8	19	–	–
TG	–	–	–	–	1	1	1	3	–	–
Truckers	–	–	–	–	15	7	7	20	–	–
TB	–	–	–	4	–	–	–	–	–	–
Fisher-Folk / Seamen	–	1	–	–	1	–	–	–	–	–
Total	384	699	649	703	1122	1134	1215	1359	763	776
Note: IBBS was implemented among HRG and Bridge population during 2013-15										

Figure 1a: Distribution of ANC HSS sites, HSS 2003

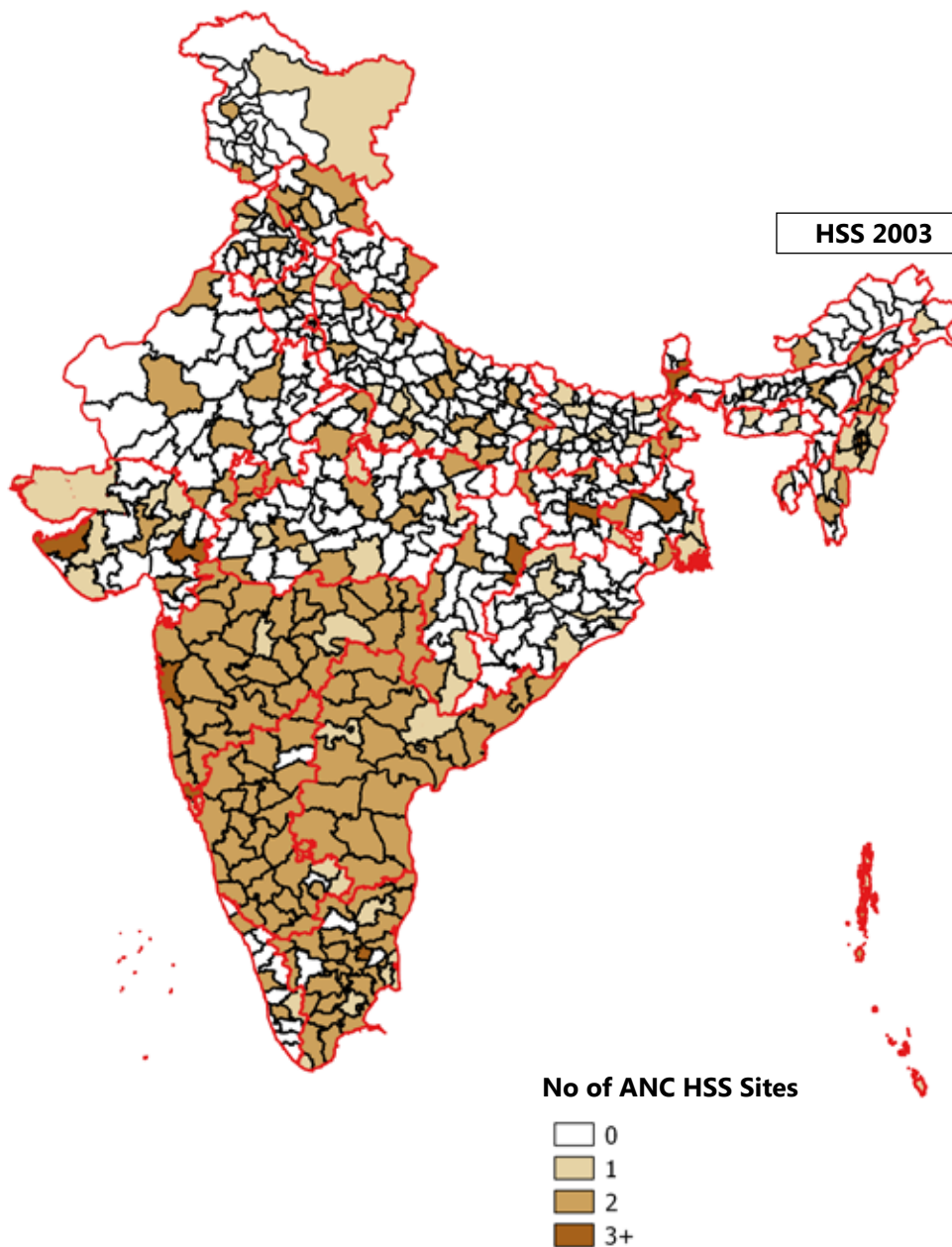


Figure 1b: Distribution of ANC HSS sites, HSS 2006

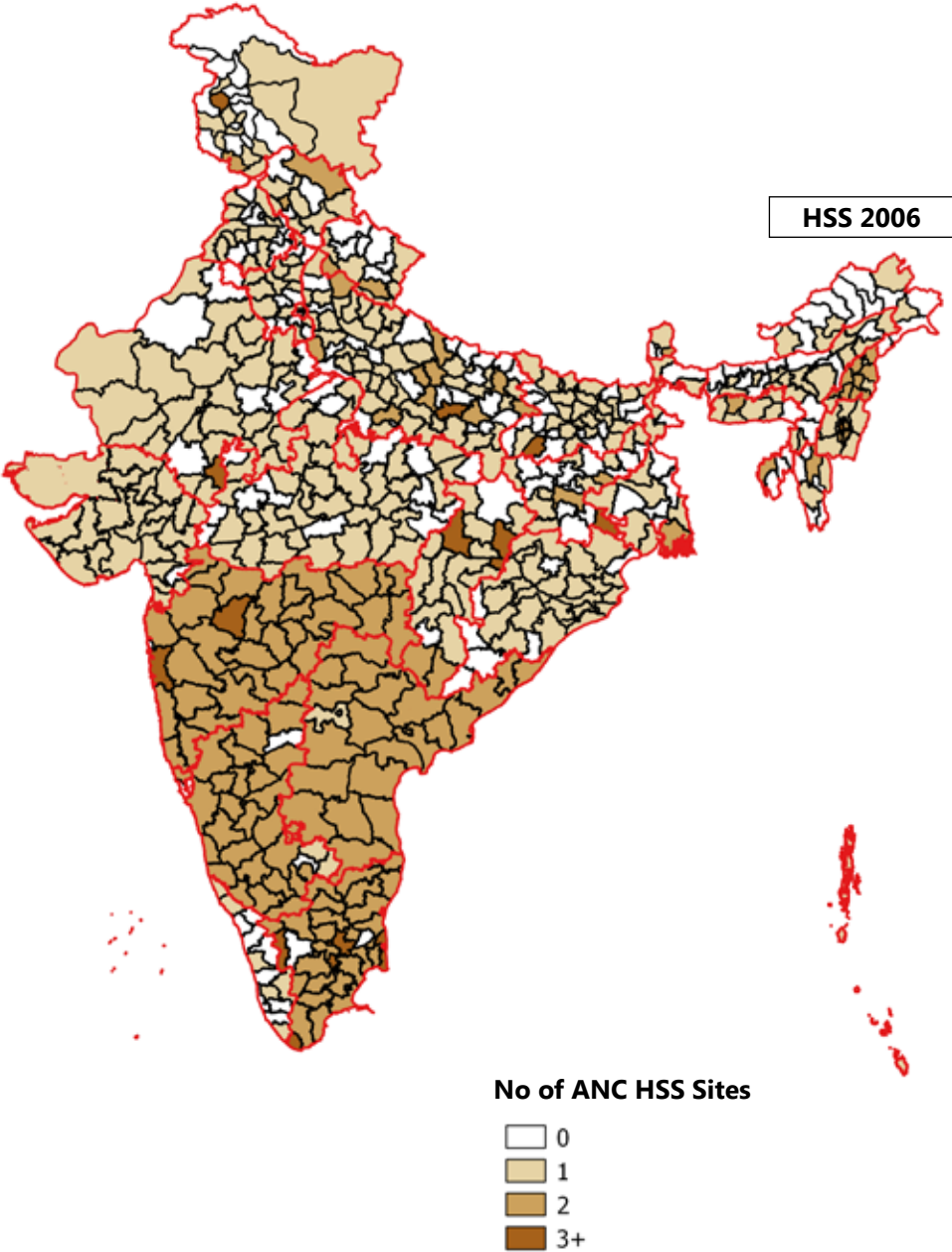
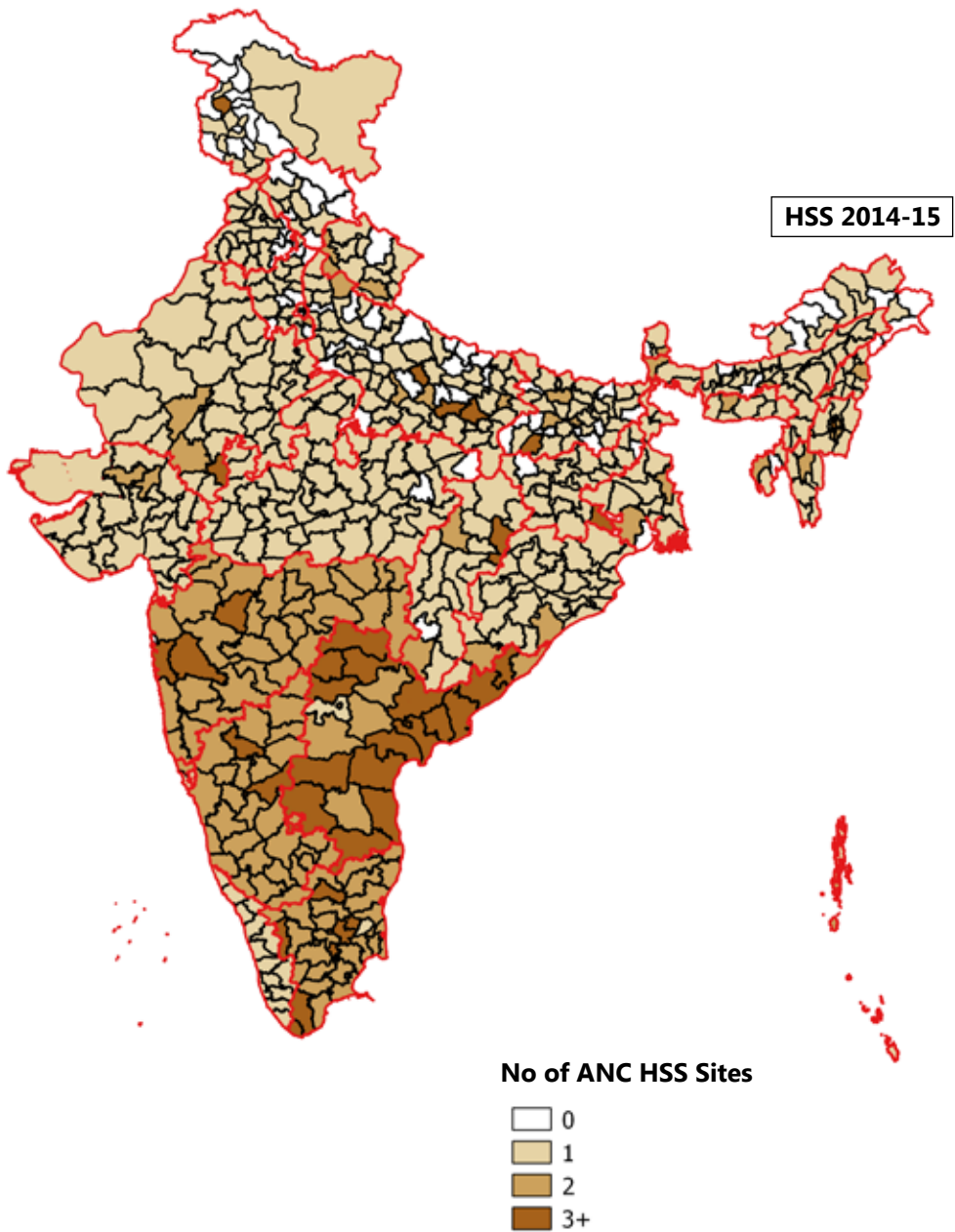


Figure 1c: Distribution of ANC HSS sites, HSS 2014-15



1.4 Implementation Structure

HSS has a robust structure for planning, implementation and monitoring at national, regional and state levels. The structure and key functions of each agency involved are shown in Figure 2 below.

National level: The National AIDS Control Organisation (NACO) is the nodal agency for strategy formulation and commissioning for each round of HSS. The Technical Resource Group on Surveillance and Estimation, comprising of experts from the fields of epidemiology, demography, surveillance, biostatistics, and laboratory services, advises NACO on the broad strategy and implementation plans of HSS and reviews the outcome of each round. Two national institutes—National Institute of Health and Family Welfare (NIHFW) and National Institute of Medical Statistics (NIMS)—support national level activity of planning and coordination. In addition, the central team, which is coordinated by NIHFW, New Delhi and comprises experts from the Centers for Disease Control and Prevention (CDC), World Health Organisation (WHO), The Joint United Nations Programme on HIV and AIDS (UNAIDS), medical colleges, and other national and international agencies, provided support in training and supervision.

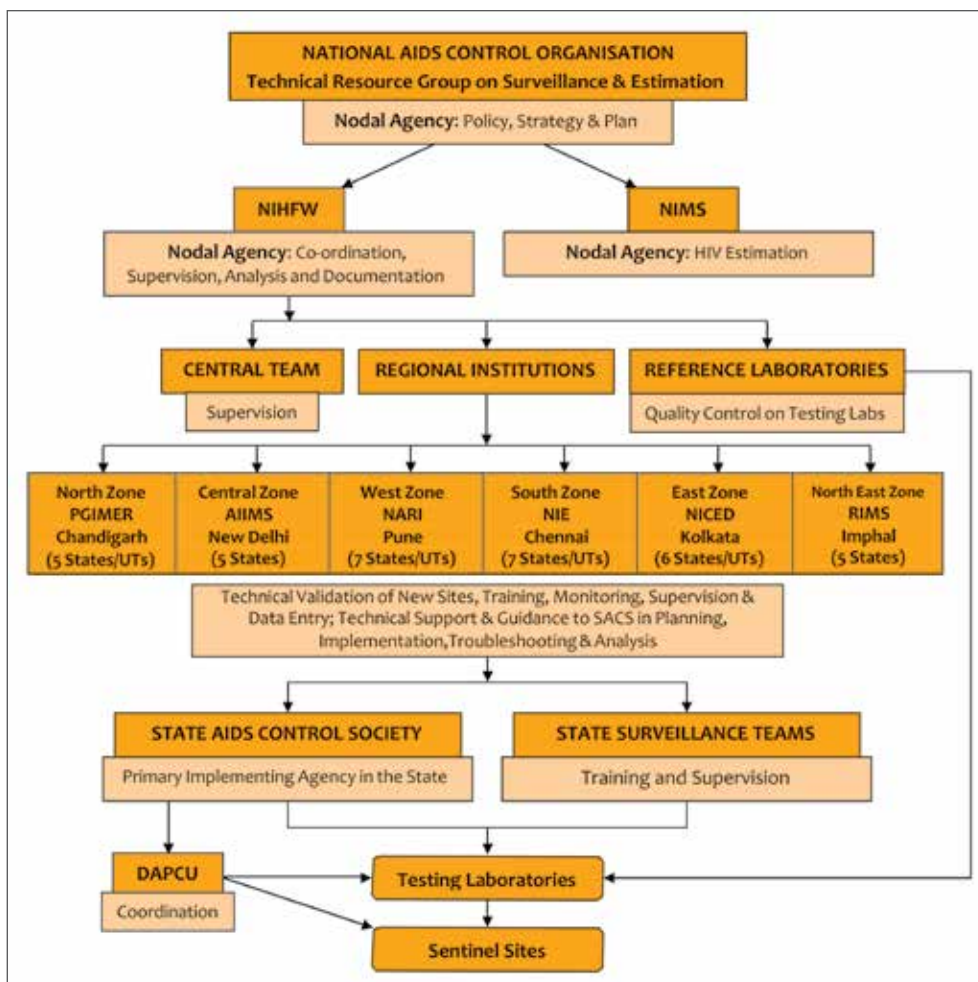
Regional level: Since 2006, six public health institutes in India have been identified as regional institutes (RIs) for HSS to provide technical support to the State AIDS Control Societies (SACS) for all HSS activities, starting with identification of new sites, training, monitoring and supervision, and improving quality of the data collected and their analysis. Data entry is another function performed by RIs. Core team at each RI has two epidemiologists/public health experts and one microbiologist, which is supported by one project coordinator, two research officers, one computer assistant/data manager, and between four to 10 data entry operators, depending on the volume of data entry.

State level: SACS is the primary agency responsible for implementation of HSS. Every state has a surveillance team comprising public health experts and microbiologists who support SACS in the training, supervision, and monitoring of the personnel involved in sentinel surveillance. State surveillance teams (SSTs) are formed by RIs in consultation with SACS.

District level: In districts with functional district AIDS prevention and control units (DAPCU), the DAPCU staff is involved in the coordination of HSS activities at the sentinel sites and the associated testing labs.

Laboratory network: Laboratory support is provided by a network of testing and reference labs. There are 117 state testing laboratories (SRLs) that conduct primary testing of blood specimens collected under HSS. Thirteen national reference laboratories (NRLs) provide external quality assurance to the SRLs through repeat testing of all HIV- positive blood specimens and five percent of HIV negative specimens.

Figure 2: Implementation Structure of HIV Sentinel Surveillance



2. Methodology

Complete details of the HSS methodology may be found in the HIV Sentinel Surveillance Operational Guidelines available on the website of the National AIDS Control Organisation (NACO)¹. Key elements of the HSS methodology are summarized in Table 2.

Table 2: Snapshot of HSS methodology at ANC sites

Element	Summary
Sentinel Site	Antenatal clinic
Sample Size	400
Duration	3 months
Frequency	Once in two years since 2008-09
Sampling Method	Consecutive
Eligibility Criteria	Pregnant Women, aged 15-49 years, attending the antenatal clinic for the first time during HSS period
Exclusion Criteria	Already visited once at the ANC site during the current round of surveillance
Blood Specimen	Serum
Testing Strategy	Unlinked Anonymous
Testing Protocol	Two Test Protocol

The data collection tool used in HSS 2014-15 at ANC Surveillance sites is given in Annex-2.

¹http://naco.gov.in/NACO/National_AIDS_Control_Program/10711/

3. Initiatives during ANC HSS 2014-15

SMS-based Daily Reporting from Sentinel Sites

In order to address the key issues identified in the implementation of HSS during previous rounds, and to improve the quality and timeliness of the surveillance process in the 14th round of surveillance 2014-15, SMS based reporting was introduced. The 14th round of HSS 2014-15 implemented an approach of daily reporting of the number of samples collected at each sentinel site through an SMS from a Registered Mobile Number to a central server. The system automatically compiled and displayed site-wise data on an excel format on real time basis. Access to this web-based application was given to SACS, RIs and NACO. This facilitated easy identification of sites with poor performance and enabled initiation of corrective action at sites, (i) that initiated HSS late, (ii) where sample collection was too slow or too fast, (iii) where there were large gaps in sample collection etc.

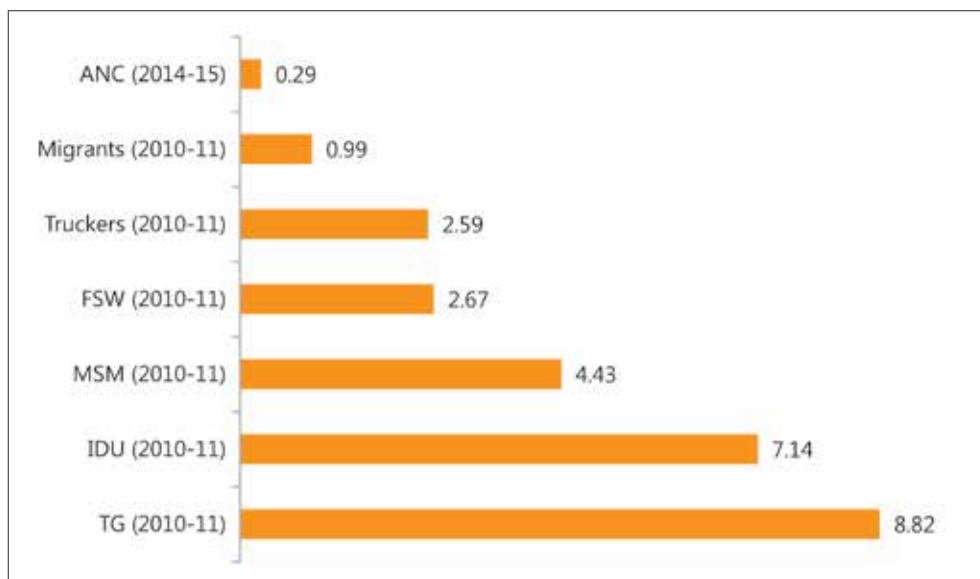
Overall 85% of sites reported through SMS based system; 20 states had more than 90% reporting. In the states of Arunachal Pradesh, Chandigarh, Daman and Diu, Delhi, Goa, Gujarat, Himachal Pradesh, Jharkhand, Madhya Pradesh, Puducherry, Punjab, Rajasthan, Uttar Pradesh and Uttrakhand, 100% counselors reported on the portal for sending daily SMS.

4. Overview of HIV Levels and Trends among ANC clinic attendees

Under HIV Sentinel Surveillance, prevalence data from pregnant women at ANC clinics is considered as a surrogate marker for prevalence among the general population. During HSS 2014-15, HSS was implemented at 776 ANC sentinel sites across the country. Out of these 767 sites achieved a valid sample size of 300 or more (minimum 75% of target) and only data from these valid sites has been used for this analysis. Overall, 3,04,982 samples were collected from these 767 sites.

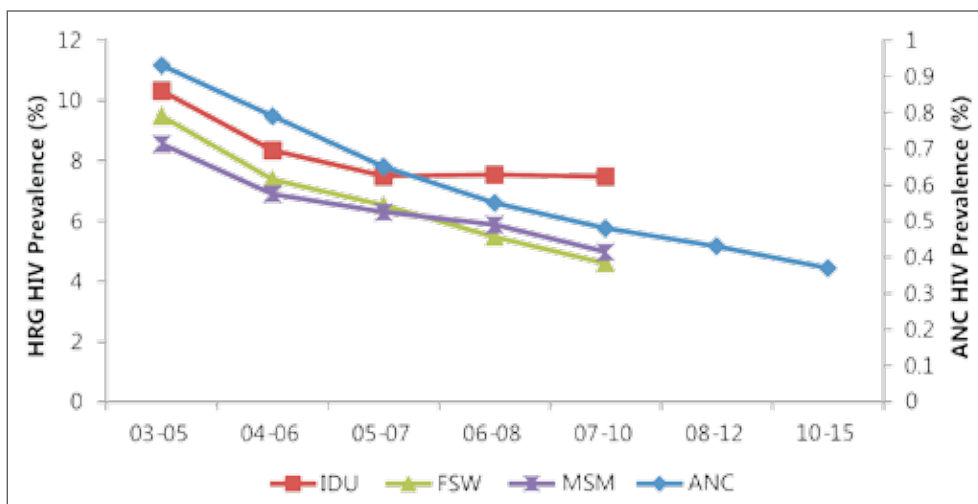
Figure 3 depicts the overall HIV prevalence at national level among ANC clinic attendees from HSS 2014-15 and HRGs and bridge populations from the HSS 2010-11, based on valid sites. The HIV prevalence observed among ANC clinic attendees, considered as proxy for HIV prevalence in general population, during 2014-15 was 0.29% (90% CI: 0.28-0.31).

Figure 3: HIV Prevalence (%) among ANC Client (2014-15) and other risk groups (2010-11), India



Trends among different population groups at national as well as state level are derived using three year moving averages of HIV prevalence at consistent sites from 2003 to 2015 for ANC, and from 2003 to 2011 for HRGs and bridge populations. At national level, trend appeared to be continuously declining among ANC clinic attendees, FSW and MSM; while the trend appeared to be stable among IDU. Data was inadequate to present trends among TG, migrants and truckers.

Figure 4: HIV Prevalence trend across different groups, India, 2015¹



¹3-yr moving averages based on consistent sites(2002-2006 for ANC and 2002-2005 for HRG); ANC-561 sites, FSW-89 sites, MSM-22 sites, IDU-38 sites.

5. State-wise HIV Level among ANC clinic attendees

Figure 5 shows state-wise HIV prevalence among ANC clinic attendees. Differences continued to exist in the prevalence rates across different geographical regions. Overall nine states had recorded prevalence higher than the national average. Similar to the ANC HSS 2012-13, three of the higher prevalence states among ANC clients were from the north-eastern region of the country with Nagaland recording the highest prevalence (1.29%) followed by Mizoram (0.81%) and Manipur (0.60%). HIV Prevalence higher than the national average was also recorded in the states of Gujarat (0.56%), Chhattisgarh (0.41%), Telangana (0.39%), Bihar (0.37%), Karnataka (0.36%) and Andhra Pradesh (0.35%). Maharashtra (0.32%), Punjab (0.32%), Rajasthan (0.32%) and Tamil Nadu (0.27%) recorded HIV prevalence similar to national prevalence. Haryana (0.25%), Delhi (0.25%) and Odisha (0.24%) recorded HIV prevalence slightly lower than the country average. Figure 6 shows the state-wise color-coded map of India based on five HIV prevalence categories.

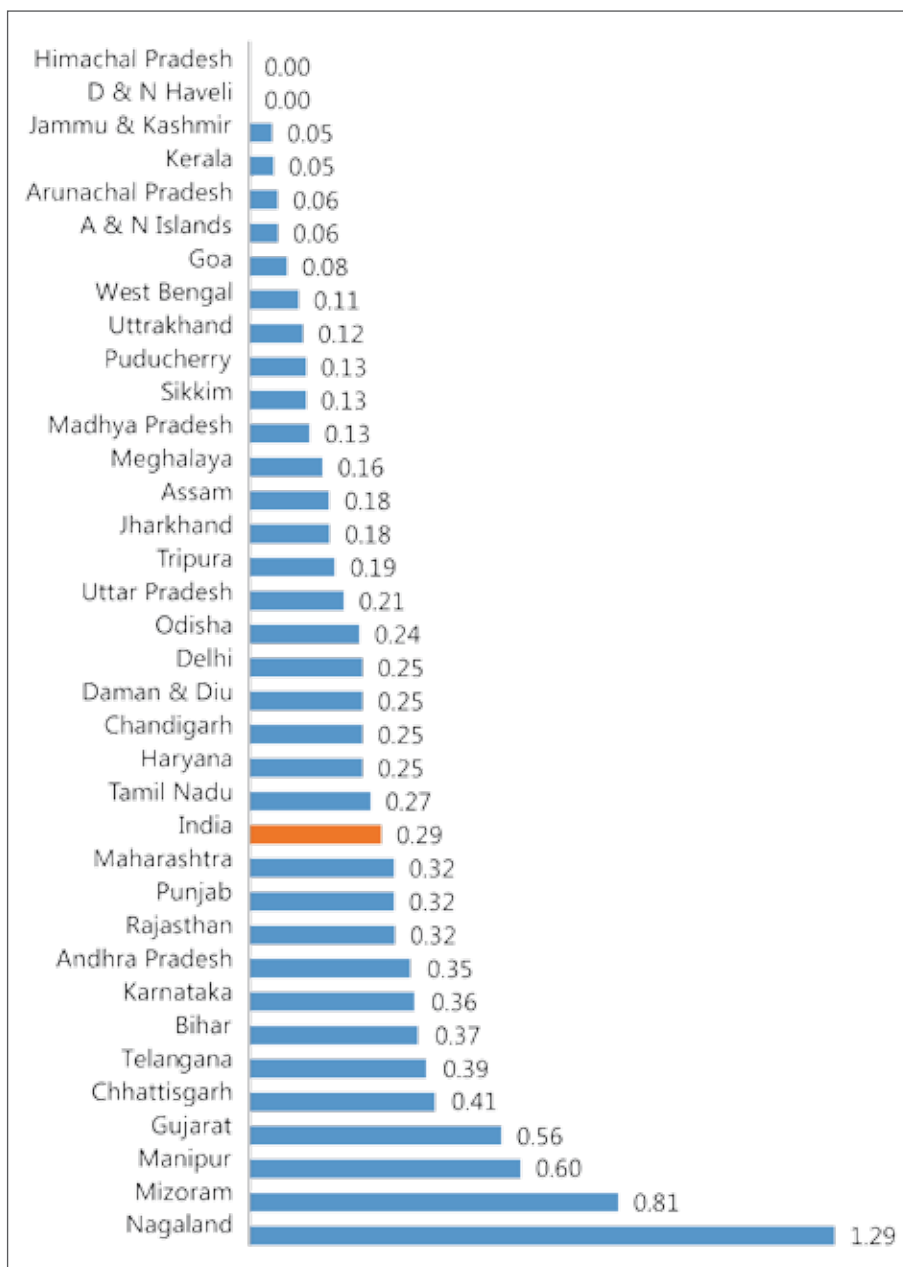
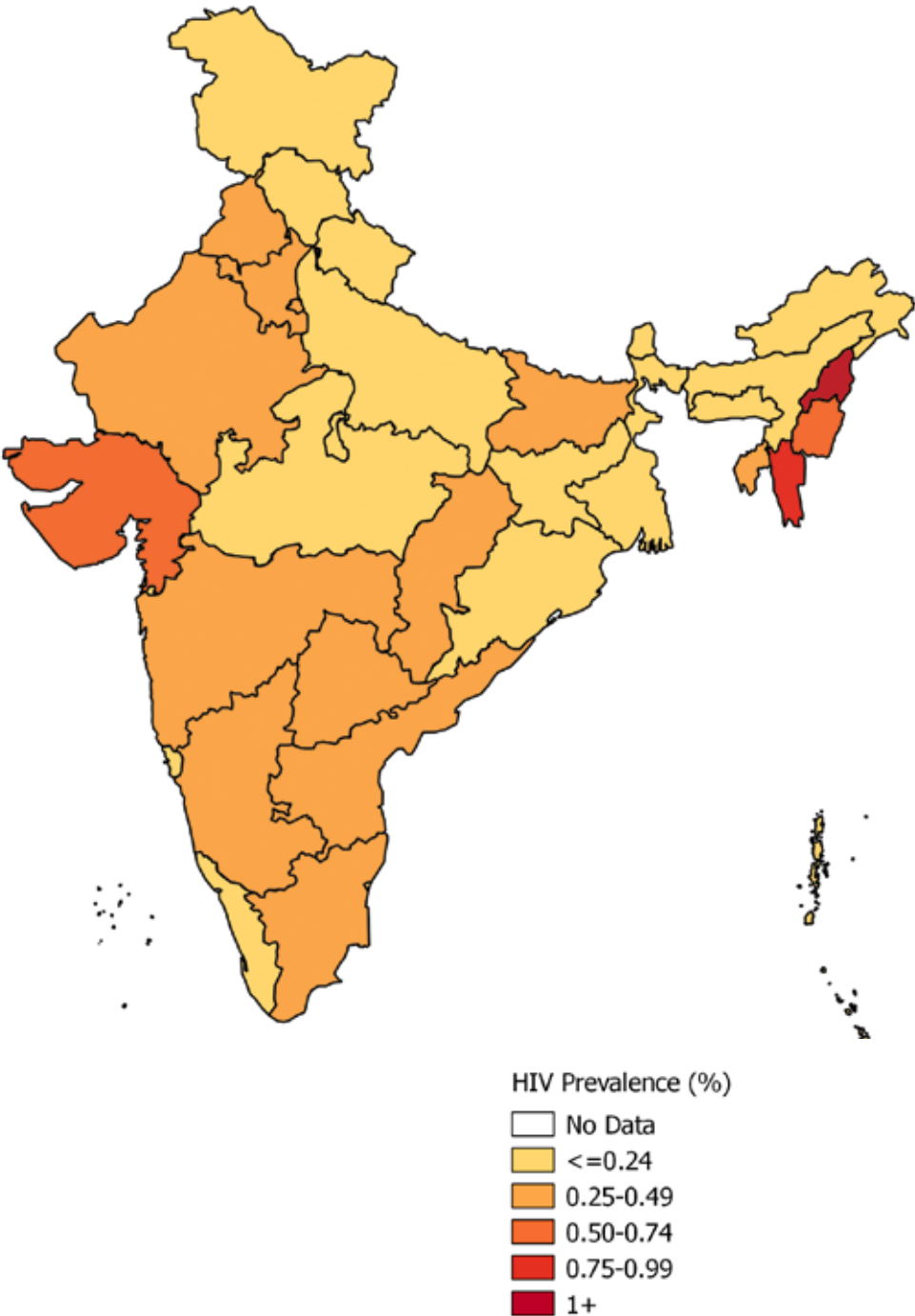
Figure 5: HIV Prevalence (%) at ANC sites, India and States, 2014-15

Figure 6: State-wise HIV Prevalence (%) at ANC sites, HSS 2014-15



HIV prevalence among ANC clinic attendees at different sentinel sites shows the heterogeneous distribution of the HIV epidemic and also the emerging pockets of HIV infection. Table 3 summarizes the distribution of pockets of high HIV prevalence among ANC clinic attendees in India.

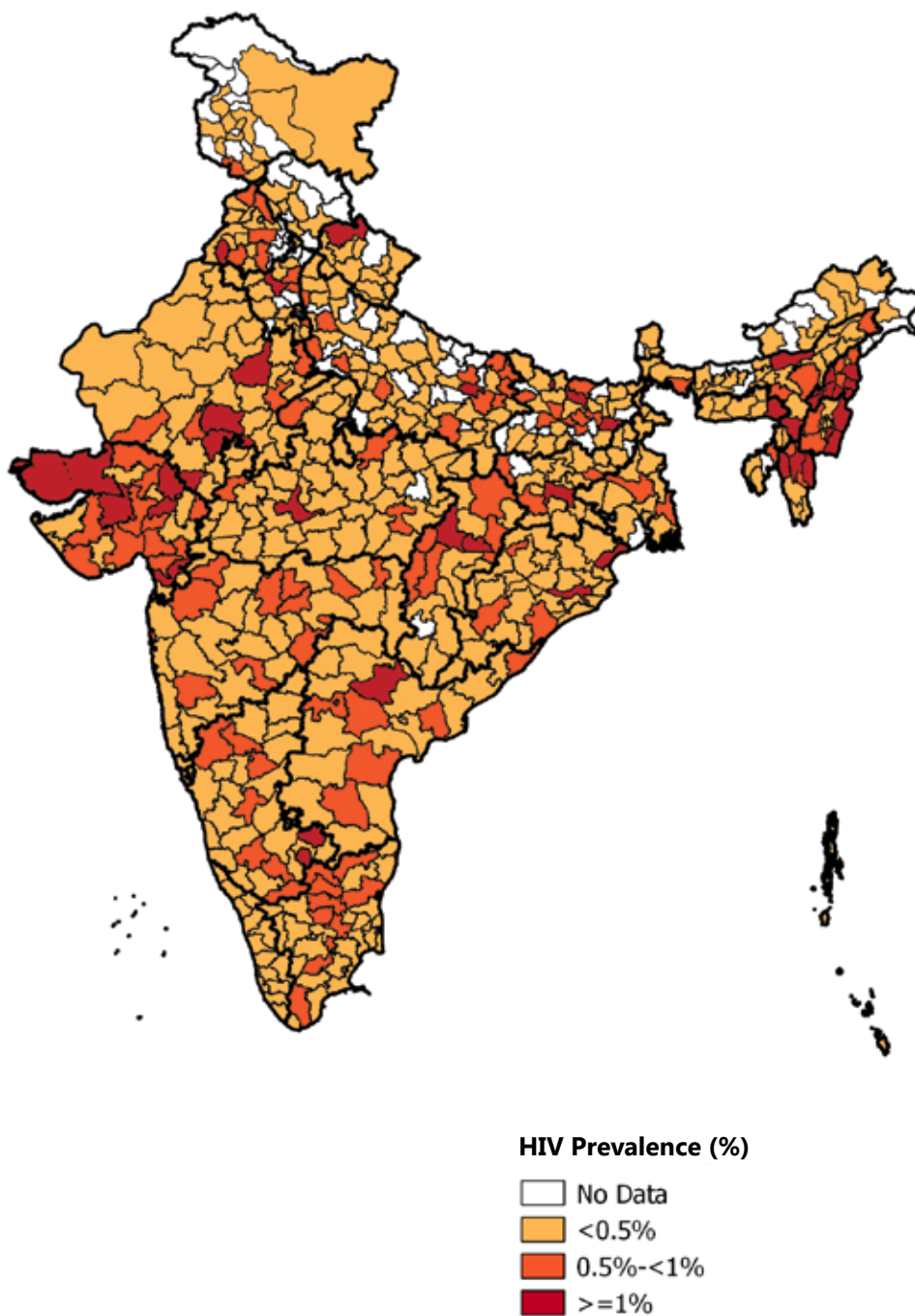
There were 70 sentinel sites, across 22 states, which recorded a prevalence of 1% or more during the 14th round of HSS. Of them, 54% (38) were from the known high prevalence southern and north-eastern states of Andhra Pradesh (3), Karnataka (5), Maharashtra (8), Tamil Nadu (6), Telangana (3), Manipur (3), Nagaland (7), and Mizoram (3). However, among the low/moderate prevalence states, Bihar, Chhattisgarh, Gujarat, Odisha and Rajasthan had three or more sites each with HIV Prevalence of 1% or more among ANC clinic attendees in 2014-15. Sites with prevalence of 1% or more had also been observed in Assam (2), Delhi (1), Haryana (1), Jharkhand (1), Meghalaya (1), Punjab (1), Uttar Pradesh (2) and Uttarakhand (1). Of the 70 sites which recorded a prevalence of 1% or more, nine sites showed prevalence of 2% or more. Out of these 9 sites, 3 were in Nagaland.

There were also 149 sites across 138 districts in 22 states that showed moderate HIV prevalence of 0.50-0.99% during HSS 2014-15. Figure 7 shows the map of India where districts are color-coded into low (<0.5%), moderate (0.50-0.99%) and high (> 1%) based on HIV prevalence recorded among ANC clinic attendees in HSS 2014-15. Overall, 44 districts in the country recorded a prevalence of 1% or more, 15 of them were from western and north-eastern states of Gujarat (5), Mizoram (3) and Nagaland (7).

Table 3: State-wise number of high prevalence ($\geq 1\%$) ANC Surveillance sites in HSS 2014-15

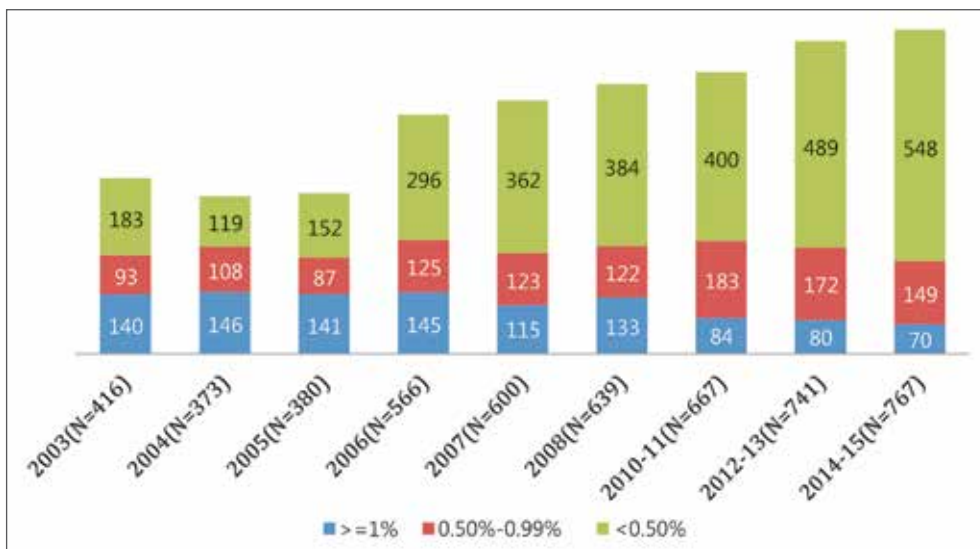
State	No. of sites with ANC HIV prevalence of 1% or more	No. of sites with ANC HIV prevalence of 2% or more
Andhra Pradesh	3	-
Assam	2	-
Bihar	4	-
Chhattisgarh	3	1
Delhi	1	-
Gujarat	7	1
Haryana	1	-
Jharkhand	1	-
Karnataka	5	1
Madhya Pradesh	1	-
Maharashtra	8	-
Manipur	3	1
Meghalaya	1	-
Mizoram	3	1
Nagaland	7	3
Odisha	3	-
Punjab	1	-
Rajasthan	4	1
Tamil Nadu	6	-
Telangana	3	-
Uttar Pradesh	2	-
Uttarakhand	1	-
India	70	9

Figure 7: District-wise HIV Prevalence (%) among ANC clinic attendees, HSS 2014-15, India



There had also been a decline in the number of sites showing a prevalence of 1% or more during the year 2003-15 despite a continuous increase in number of surveillance sites across the country. In the year 2003, more than one-third (34%) of ANC surveillance sites, out of a total of 416 valid sites, showed a prevalence of 1% or more; 128 (91%) of them were in six high prevalence states of Andhra Pradesh, Karnataka, Maharashtra, Manipur, Nagaland and Tamil Nadu. In the 2006 HSS round, of the total 566 valid ANC sites, 26% recorded a prevalence of 1% or more, 121 (81%) of these high prevalence sites were in six high prevalence states. In contrast, during the 14th round of surveillance, only 70 of total 767 valid sites recorded a prevalence of 1% or more, 38 of them were in high prevalence states. Figure 8 depicts the changing pattern of ANC HSS sites in different HIV prevalence categories in the country.

Figure 8: Year-wise distribution of valid sites in different HIV prevalence (%) categories among ANC clinic attendees, HSS 2003-15



The changes in prevalence category, discussed above, was also evident in Figure 9 which highlights not only the declining number of districts with more than 1% prevalence in country, but also the emerging pockets of high prevalence in states having low/moderate epidemic.

Figure 9: Year-wise distribution of districts in different prevalence (%) categories among ANC clinic attendees, HSS 2003, 2006 and 2014-15

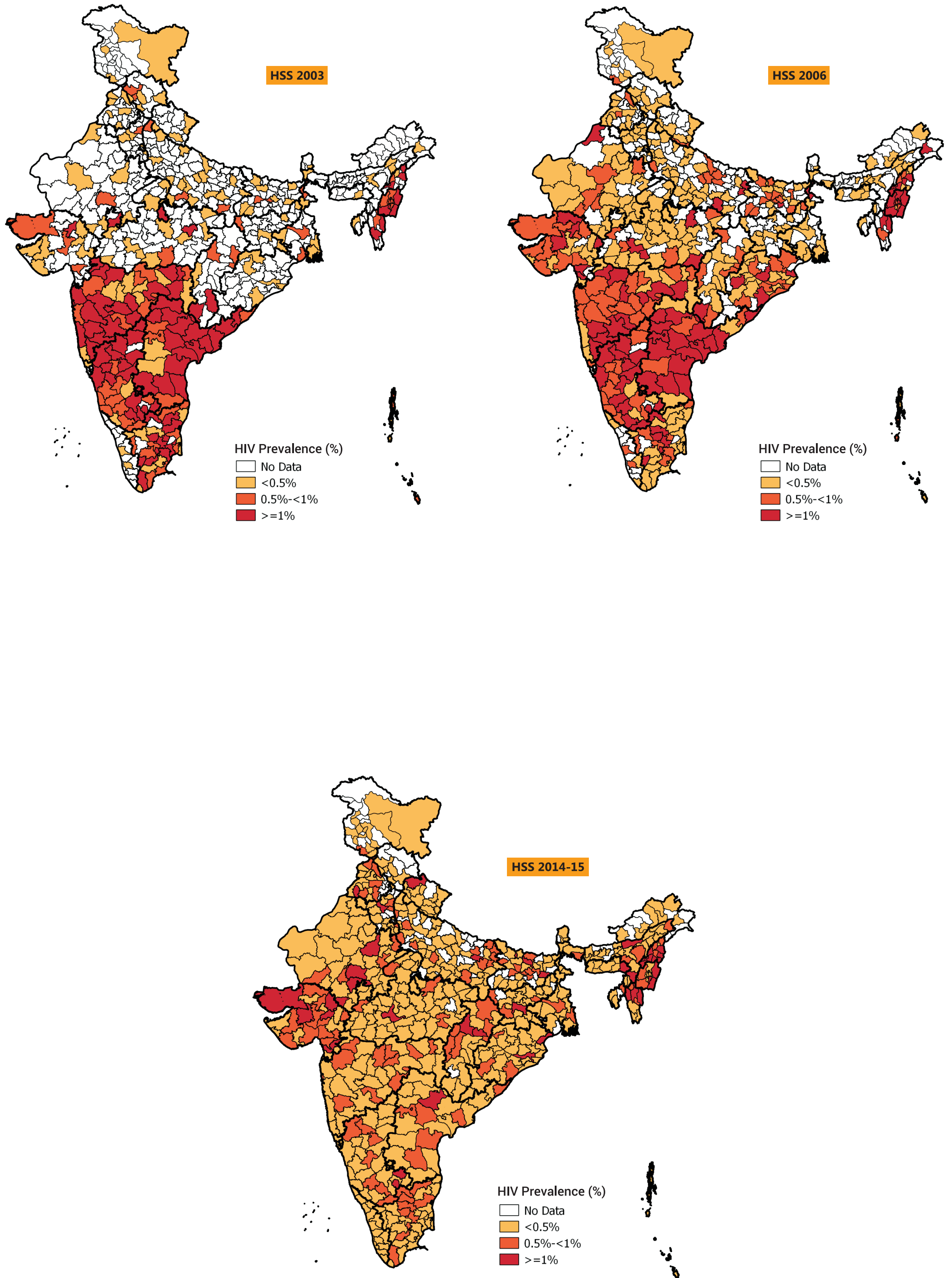


Table 4 shows districts with at least one ANC sites showing HIV prevalence of 1% or more among ANC clinic attendees in 3 out of 6 rounds of HSS, i.e., from HSS 2006 to HSS 2014-15. While most of them were in high prevalence states from southern and north-eastern regions, Bihar (Patna), Chhattisgarh (Bilaspur, Raigarh), Gujarat (Mehsana, Sabar Kantha and Surat), Odisha (Ganjam, Anugul and Cuttack), and Rajasthan (Chittaurgarh and Bhilwara) also had districts in this category. There were 310 sites across 224 districts which recorded HIV prevalence $\geq 1\%$ at least once or more in the last six rounds.

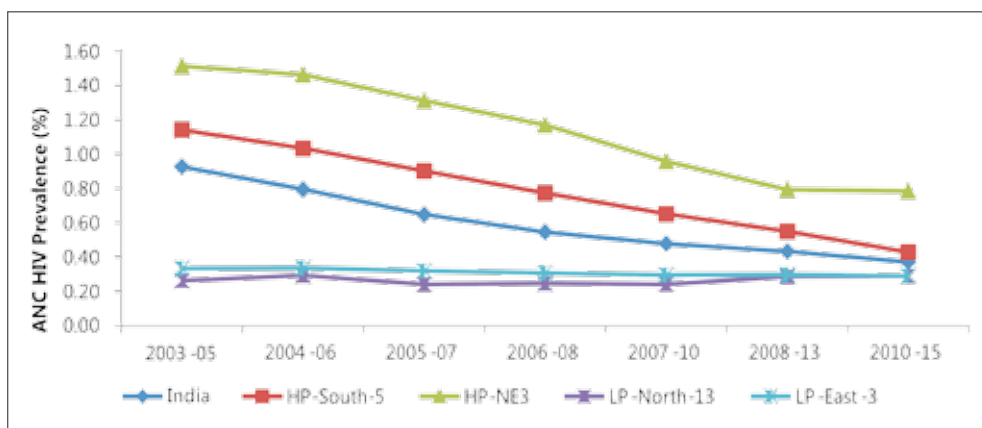
Table 4: State-wise distribution of ANC sites showing 1% or more HIV prevalence in at least 3 out of last 6 rounds of HSS (HSS 2006 to HSS 2014-15)

State	Districts
Andhra Pradesh	11-Anantapur, Chittoor, Cuddapah, East Godavari, Guntur, Krishna, Kurnool, Prakasam, Visakhapatnam, Vizianagram, West Godavari
Bihar	1-Patna
Chhattisgarh	2-Bilaspur, Raigarh
Gujarat	3-Mehsana, Sabar Kantha, Surat
Karnataka	13-Bagalkot Bangalore, Belgaum, Bellary, Bijapur, Chamrajnagar, Chikmagalur, Davangere, Gulbarga, Hassan, Kodagu, Mysore, Tumkur
Maharashtra	12-Mumbai, Mumbai (Suburban), Ahmadnagar, Buldana, Chandrapur, Dhule, Kolhapur, Latur, Nanded, Sangli, Solapur, Yavatmal
Manipur	5-Chandel, Imphal East, Imphal West, Thoubal, Ukhrul
Mizoram	2-Aizawl, Champai
Nagaland	5-Dimapur, Kohima, Phere, Phek, Tuensang
Odisha	3-Anugul, Cuttack, Ganjam
Rajasthan	2-Chittaurgarh, Bhilwara
Tamil Nadu	6-Coimbatore, Dharmapuri, Namakkal, Perambalur, Salem, Tiruchirapalli
Telangana	8-Hyderabad, Karimnagar, Khammam, Mahbubnagar, Medak, Nalgonda, Nizamabad, Warangal

6. State-wise HIV prevalence trend among ANC clinic attendees

At the national level HIV trend continues to be declining among ANC clinic attendees. Among the erstwhile high prevalence states of Andhra Pradesh, Maharashtra, Karnataka, Tamil Nadu and Telangana; trend appears to be continuously declining. In the north-eastern states of Manipur, Mizoram and Nagaland, long-term trend continues to be declining; however, stabilization in trend in recent past has been noticed in these states. Long-term trend appears to be rising in moderate and low prevalence states of Delhi, Gujarat, Haryana, Punjab, Rajasthan and Uttar Pradesh. The trend appears to be stable in Assam, Bihar, Jharkhand, Uttarakhand and Chhattisgarh. (Figure 10-17)

Figure 10: Region-wise trends in ANC HIV Prevalence²



²3-yr moving averages based on consistent sites, in India-561; HP-South-5 (Andhra Pradesh, Tamil Nadu, Karnataka, Maharashtra, Telangana)-233, HP-NE-3 (Manipur, Nagaland, Mizoram)-33, LP-North-13 (Assam, Chandigarh, Chhattisgarh, Delhi, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Odisha, Punjab, Rajasthan, Uttarakhand, Uttar Pradesh)-185, LP-East-3 (Bihar, Jharkhand, West Bengal)-45.

Figure 11: State-wise trends in ANC HIV Prevalence based on consistent sites³

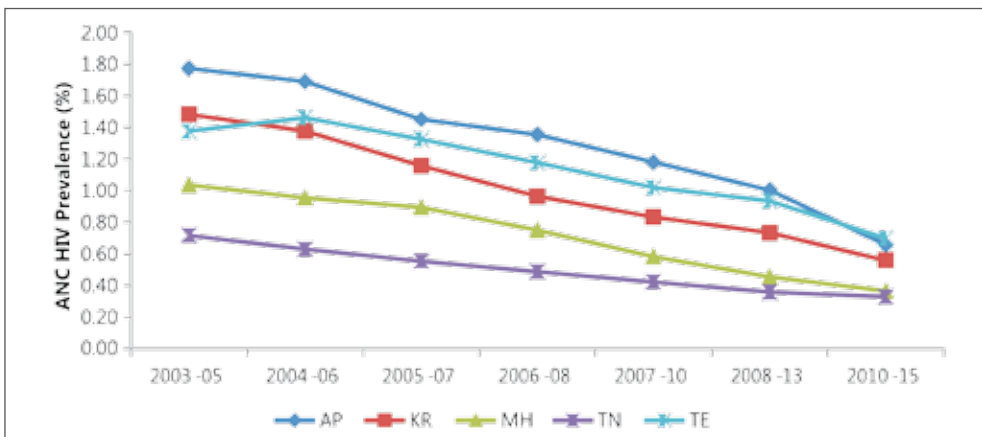
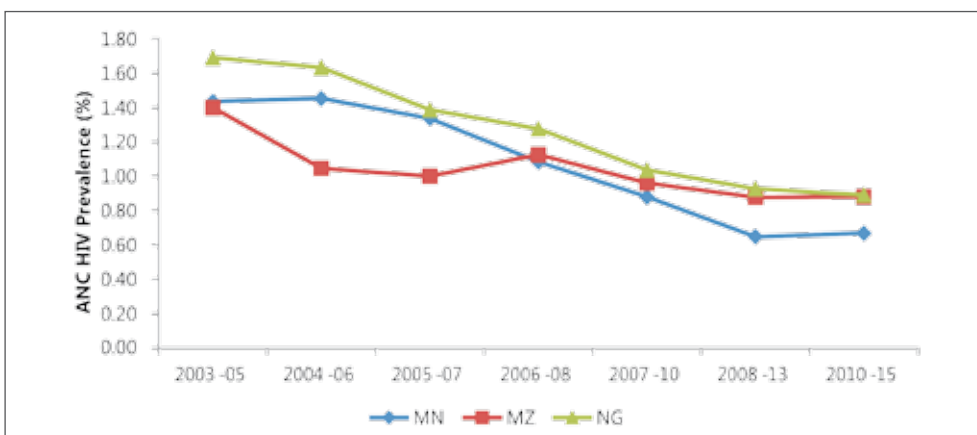


Figure 12: State-wise trends in ANC HIV Prevalence based on consistent sites⁴



³3-yr moving averages based on consistent sites; AP (Andhra Pradesh)-26; KR (Karnataka)-54; MH (Maharashtra)-72; TN (TamilNadu)-63; TE (Telangana)-18.

⁴3-yr moving averages based on consistent sites; MN (Manipur)-14; MZ (Mizoram)-4; NG (Nagaland)-15.

Figure 13: State-wise trends in ANC HIV Prevalence based on consistent sites⁵

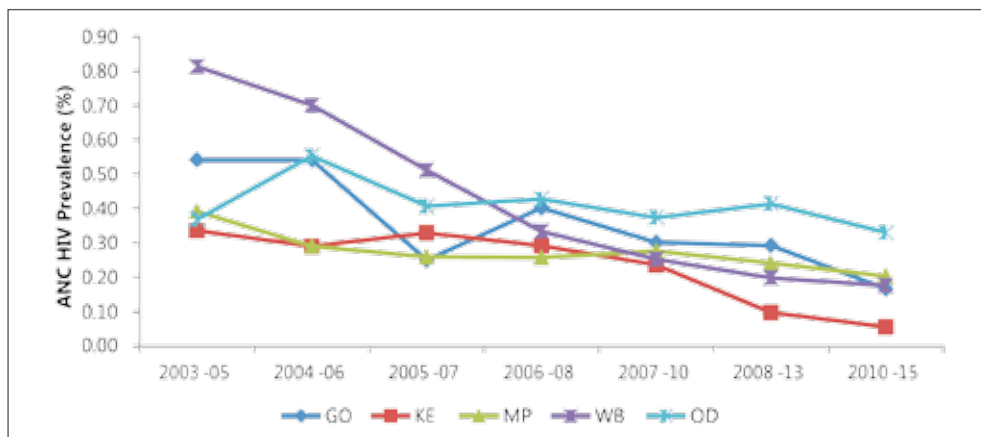
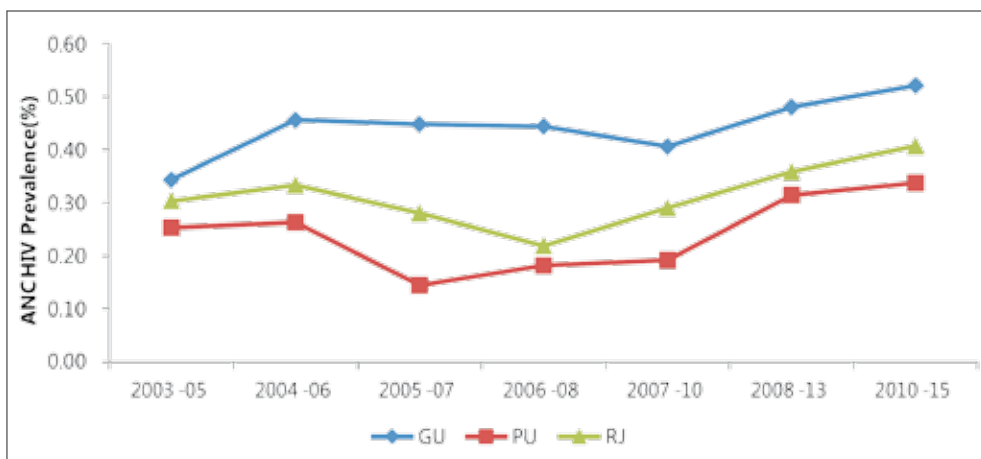


Figure 14: State-wise trends in ANC HIV Prevalence based on consistent sites⁶



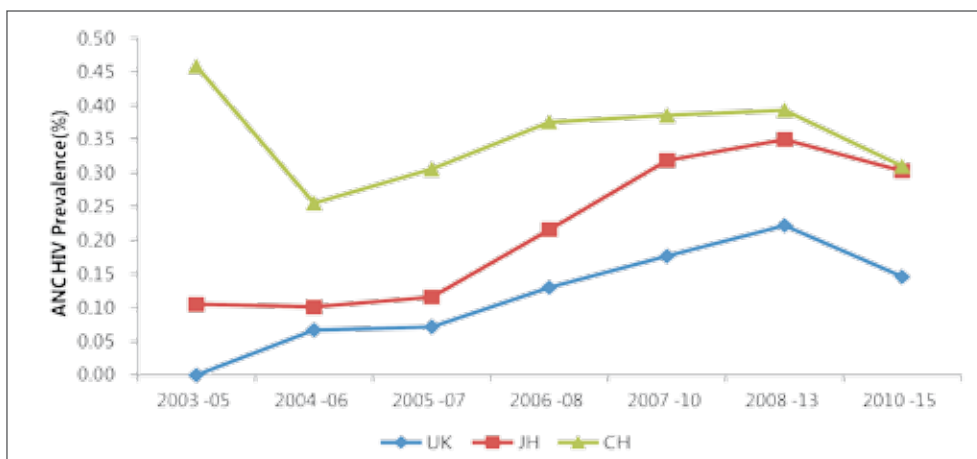
⁵3-yr moving averages based on consistent sites; GO (Goa)-2; KE (Kerala)-6; MP (Madhya Pradesh)-36; WB (West Bengal)-11; OD (Odisha)-23.

⁶3-yr moving averages based on consistent sites; GU (Gujarat)-23, PU(Punjab)-11, RJ (Rajasthan)-24.

Figure 15: State-wise trends in ANC HIV Prevalence based on consistent sites⁷

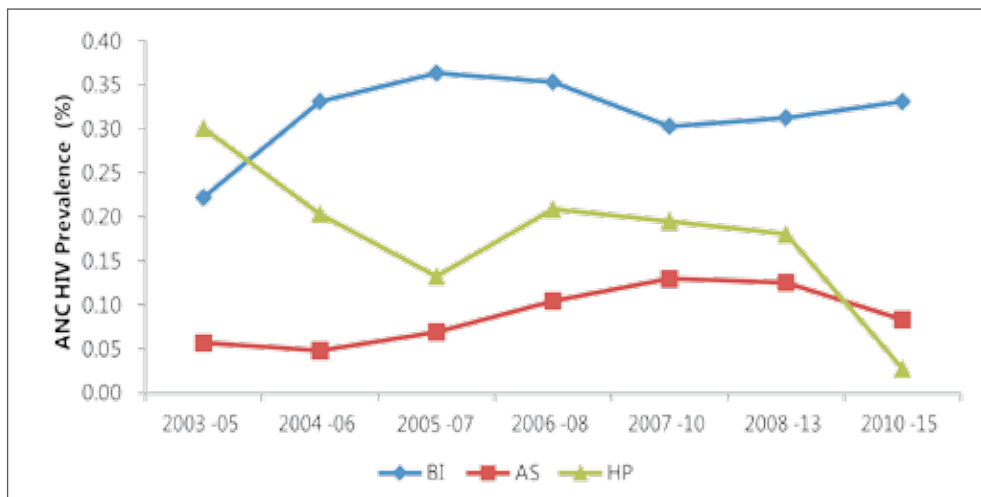


Figure 16: State-wise trends in ANC HIV Prevalence based on consistent sites⁸



⁷3-yr moving averages based on consistent sites; HR(Haryana)-11, UP (Uttar Pradesh)- 39; DE (Delhi)-5.

⁸3-yr moving averages based on consistent sites; UK(Uttarakhand)- 9; JH (Jharkhand)-13; CH (Chhatisgarh)- 14.

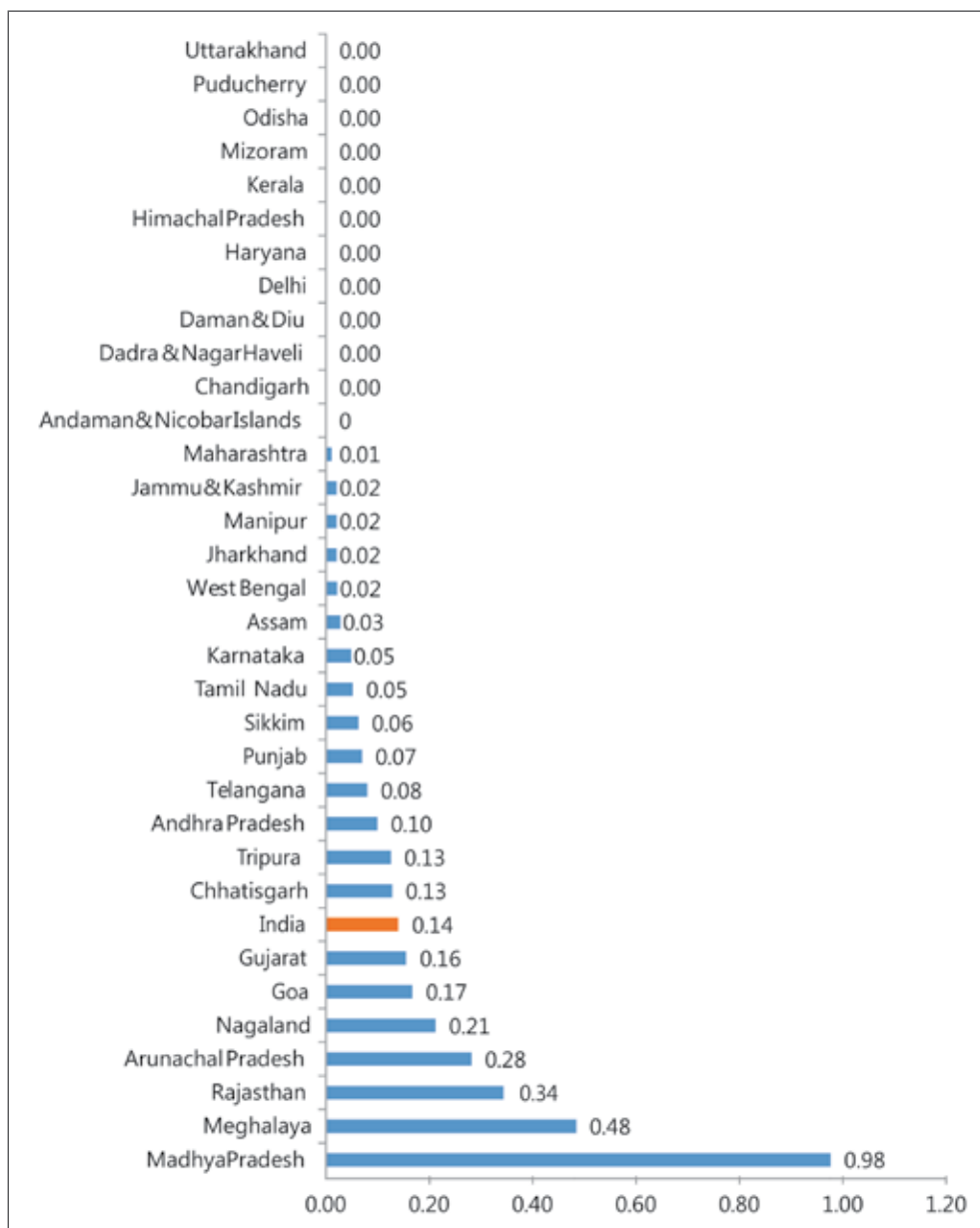
Figure 17: State-wise trends in ANC HIV Prevalence based on consistent sites⁹

⁹3-yr moving averages based on consistent sites; BI (Bihar)-21; AS (Assam)-10; (Himachal Pradesh)-6.

7. State-wise Syphilis Sero Positivity Level

Blood specimens collected under ANC HSS are tested for Syphilis using non-treponemal Rapid Plasma Reagin (RPR) test. For Syphilis, two test protocol is used, i.e., first test is qualitative and the second test quantitative. Only samples for which the first qualitative test is found reactive are subjected for the second quantitative test. Under HSS, RPR quantitative tests are reported as "reactive" at dilutions of $\geq 1:8$. RPR test was conducted in all the states where ANC HSS was conducted, with the exception of Bihar and Uttar Pradesh.

Figure 18 shows state-wise Syphilis sero-positivity among ANC clinic attendees. Overall the Syphilis sero-positivity was low at 0.14% (90% CI; 0.13-0.15). Seven states recorded Syphilis sero-positivity above the national average with Madhya Pradesh (0.98%) having the highest sero-positivity followed by Meghalaya (0.48%), Rajasthan (0.34%), Arunachal Pradesh (0.28%) and Nagaland (0.21%). Telangana (0.08%) and Punjab (0.07%) recorded Syphilis sero-positivity slightly lower than national average.

Figure 18: Syphilis Prevalence (%) at ANC Sites, India and States, 2014-15

8. Conclusion

HIV epidemic in India continues to be concentrated among HRG with low level and declining prevalence among general population. HIV prevalence has also been declining in four erstwhile high prevalence states of undivided Andhra Pradesh, Karnataka, Maharashtra and Tamil Nadu, where prevention efforts were scaled up since NACP II in the late 1990s. For the first time, these four states have recorded a prevalence of less than 0.50% among ANC clients highlighting the sustained impact of NACP in these high burden states. Steady decline has also been noticed in many of low prevalence states including that of Madhya Pradesh, Odisha and West Bengal. Besides, there are indications of stabilization of epidemic, at a low level, in states of Bihar and Chhattisgarh, after sustained increase.

Data from HSS 2014-15 also demonstrated diversity in trajectory of HIV epidemic in India. HIV prevalence in Manipur, Mizoram and Nagaland appeared to be leveled off in the recent past after a sustained decline. After 2008 round of Surveillance, Nagaland is the first state to record an overall prevalence of more than 1% among ANC clients. Mizoram recorded an increase in prevalence among ANC clients on a year-to-year basis. There are signs of slowly rising epidemic in Chhattisgarh, Delhi, Gujarat, Haryana, Jharkhand, Punjab, Rajasthan and Uttar Pradesh, albeit at a moderate to low level.

Evidence informed decision-making is vital to India's response to the HIV epidemic. Data from the HIV sentinel surveillance has been central to the evidence informed decision-making at district, state as well as national level. The 14th round of HSS has not only provided evidence that corroborates that India's success story towards halting and reversing the epidemic continues, but has also provided insights towards challenges that still remain. Clearly this evidence will provide critical guidance and help to the program in making smart decisions to fast track achievement of NACP IV goal.

Annexes

Annex 1

State-wise number of HSS sites, 2003-15

State	No of district with any HSS site					No. of districts with ANC HSS Sites					No of districts with HRGs & Bridge population HSS sites					No. of ANC HSS Sites					No of HRGs & Bridge Population HSS sites				
	2003	2006	2010-11	2012-13	2014-15	2003	2006	2010-11	2012-13	2014-15	2003	2006	2010-11	2012-13	2014-15	2003	2006	2010-11	2012-13	2014-15	2003	2006	2010-11		
A & N Islands	3	3	3	3	3	3	3	3	3	3	1	1	1	1	1	4	3	4	4	4	3	2	3	1	
Arunachal Pr.	5	10	11	8	8	2	5	6	8	8	3	7	7	7	7	3	5	6	8	8	3	9	9	12	
Assam	9	23	25	24	25	4	15	19	24	25	5	16	19	19	7	15	20	25	27	27	7	23	30	30	
Bihar	11	36	34	27	27	7	23	23	27	27	8	28	25	7	23	7	23	23	29	29	10	38	38t	38t	
Chandigarh	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1	1	1	1	4	7	7	7	
Chhattisgarh	8	16	17	16	19	5	15	16	16	18	3	6	6	8	8	19	18	18	18	21	3	10	9	9	
D & N Haveli	1	1	1	1	1	1	1	1	1	1	-	-	-	-	2	1	1	1	1	1	0	0	0	0	
Daman & Diu	2	2	2	2	2	2	2	2	2	2	-	-	-	-	4	2	2	2	2	2	0	0	0	0	
Delhi	8	9	9	5	5	4	5	5	5	5	6	8	8	8	4	5	5	5	5	5	7	16	15	15	
Goa	2	2	2	2	2	2	1	2	2	2	2	2	2	2	4	2	3	3	3	3	3	3	4	4	
Gujarat	14	25	26	27	27	10	25	25	27	26	8	11	15	15	16	25	25	28	28	28	8	16	28	28	
Haryana	9	19	20	15	16	4	12	12	15	16	5	12	14	7	12	12	12	16	16	16	5	18	28	28	
Himachal Pr.	12	12	11	7	6	7	8	7	7	6	5	6	7	14	10	10	8	8	8	7	6	10	13	13	
J & K	3	14	13	14	14	3	14	14	14	14	2	6	5	5	16	15	15	15	15	15	3	9	9	9	
Jharkhand	8	17	19	19	22	7	12	12	19	22	3	11	14	12	16	16	15	21	24	24	3	19	26	26	
Karnataka	28	28	31	30	30	28	28	30	30	30	7	7	24	54	54	54	60	62	62	62	10	14	38	38	
Kerala	8	14	16	10	14	4	6	10	10	14	4	14	15	7	6	10	10	10	14	14	7	19	23	23	
Lakshadweep	1	1	-	-	-	1	1	-	-	-	1	1	-	1	2	1	2	-	-	-	1	1	0	0	
Madhya Pr.	23	45	44	47	49	15	36	37	47	49	10	15	15	26	36	37	47	47	49	49	10	16	20	20	

State	No of district with any HSS site					No. of districts with ANC HSS Sites					No of districts with HRGs & Bridge population HSS sites					No. of ANC HSS Sites					No of HRGs & Bridge Population HSS sites				
	2003	2006	2010-	2012-	2014-	2003	2006	2010-	2012-	2014-	2003	2006	2010-	2012-	2014-	2003	2006	2010-	2012-	2014-	2003	2006	2010-	2012-	2014-
Maharashtra	37	37	38	36	37	35	35	37	36	37	11	15	20	70	73	75	75	78	15	29	38				
Manipur	9	9	9	9	9	9	9	9	9	9	4	5	9	14	14	14	14	14	7	10	18				
Meghalaya	2	6	6	7	7	2	6	6	7	7	1	2	2	2	7	7	8	8	3	4	4				
Mizoram	4	8	8	8	8	3	3	8	8	8	2	8	5	5	4	9	9	9	4	12	9				
Nagaland	8	11	11	11	11	8	11	11	11	11	6	8	8	12	19	19	13	13	7	10	12				
Odisha	9	30	30	30	30	5	23	30	30	30	7	18	20	5	23	32	32	32	8	22	31				
Puducherry	2	2	2	2	2	2	2	2	2	2	2	2	2	4	2	2	2	2	3	8	8				
Punjab	8	18	19	13	18	6	11	13	13	18	3	9	12	10	11	13	13	18	4	14	23				
Rajasthan	12	32	31	33	33	6	25	28	33	33	7	21	17	12	25	28	35	35	8	23	20				
Sikkim	1	3	3	3	3	1	2	2	3	2	1	2	2	3	3	3	4	4	1	3	4				
Tamil Nadu	30	30	31	33	33	29	30	31	33	32	13	18	27	53	64	68	72	72	15	26	53				
Telangana	-	-	-	-	10	-	-	-	-	10	-	-	-	-	-	-	-	25	-	-	-				
Tripura	2	4	4	3	6	1	1	1	3	3	2	4	4	1	2	2	4	7	2	8	12				
Uttar Pradesh	31	69	68	55	55	19	51	54	55	55	17	31	35	30	62	65	65	65	19	37	50				
Uttarakhand	7	11	12	12	12	3	7	7	12	12	4	7	9	6	9	9	15	15	4	7	11				
West Bengal	13	19	19	18	19	9	12	18	18	20	8	14	16	18	13	22	22	25	15	32	38				
India	354	590	600	554	577	271	464	505	554	572	173	328	388	476	628	696	750	776	223	494	663				

Annex 2

Bilingual Data form for Surveillance at ANC sites, HSS 2014-15

HSS 2014-15 : DATA FORM FOR ANTENATAL CLINIC ATTENDEES (ANC)

एच.एस.एस. 2014-15 प्रसवपूर्व जांच केंद्रों में जाने वाली महिलाओं के लिए डेटा प्रपत्र

(Please fill the site details in the box below OR Paste the sticker with site details/Stamp the site details in the empty box)
(सेंटिनल साइट की जानकारी यहां लिखें/उपरोक्त/छिपावटी)

State/ राज्य: _____ District/ जिला: _____ Site Name / साइट का नाम: _____ (Site Code) (Sub-site No.) (Sample No.) (Date DD/MM/YY)	
1. Age (in completed years) / आयु (संपूर्ण वर्षों में) <input type="text"/>	
2. Literacy Status / साक्षरता स्थिति 1. Illiterate / निरक्षर 2. Literate and till 5 th standard / साक्षर और पाँचवी तक 3. 6 th to 10 th standard / छठी से दसवी तक 4. 11 th to Graduation / ग्यारहवी से स्नातक 5. Post Graduation / स्नातकोत्तर	
3. Order of Current Pregnancy / वर्तमान गर्भ का क्रम 1. First / पहली बार 2. Second / दूसरी बार 3. Third / तीसरी बार 4. Fourth or more / चौथी या उससे ज्यादा	
4. Source of Referral to the ANC clinic / प्रसवपूर्व जांच केंद्र में रेफरल का स्रोत 1. Self Referral / स्वयं रेफरल 2. Family/Relatives/ Neighbors/ Friends / परिवार/ रिश्तेदार/पड़ोसी/ दोस्त 3. NGO / एन.जी.ओ 4. Private Hospital (Doctor/ Nurses) / निजी अस्पताल (डॉक्टर/ नर्स) 5. Govt. Hospital (including, ASHA/ANM) / सरकारी अस्पताल (आशा/ए.एन.एम.) 6. KTC/ ART Centre / आई.वी.टी.सी./ ए.आर.टी. केंद्र	
5. Current Place of Residence / वर्तमान निवास स्थान 1. Urban (Municipal Corporation / Council / Cantonment) / शहरी (नगरपालिका/ सिंगल/ छावनी) 2. Rural / ग्रामीण	
6. Duration of Stay at Current Place of Residence / वर्तमान निवास स्थान में ठहरने की अवधि <input type="text"/> years / वर्ष <input type="text"/> months / महीने	
7. Current Occupation of the Respondent / प्रतिवादी का वर्तमान व्यवसाय 1. Agricultural Labourer / कृषि श्रमिक 2. Non-Agricultural Labourer / गैर कृषि श्रमिक 3. Domestic Servant / घरेलू नौकर 4. Skilled / Semiskilled worker / कुशल / अर्धकुशल श्रमिक 5. Petty business / small shop / लघु व्यवसाय/ छोटी दुकान 6. Large Business/Self employed/विशाल व्यवसाय/स्वयंचालित 7. Service (Govt./Pvt.) / कर्मचारी (सरकारी/ निजी) 8. Student / विद्यार्थी 9. Truck Driver/helper / ट्रक चालक/ सहायक 10. Local transport worker (auto/ taxi driver, handcart pullers, rickshaw pullers etc./स्थानीय परिवहन कर्मचारी (ऑटो/ टैक्सी ड्राइवर, देवेवाले, रिश्तेवाले) 11. Hotel Staff / होटल कर्मचारी 12. Agricultural cultivator /landholder / कृषक/ जमींदार 14. Housewife / गृहणी	
8. Current Occupation of the Spouse / प्रतिवादी के पति का वर्तमान व्यवसाय 1. Agricultural Labourer / कृषि श्रमिक 2. Non-Agricultural Labourer / गैर कृषि श्रमिक 3. Domestic Servant / घरेलू नौकर 4. Skilled / Semiskilled worker / कुशल / अर्धकुशल श्रमिक 5. Petty business / small shop / लघु व्यवसाय/ छोटी दुकान 6. Large Business/Self employed/विशाल व्यवसाय/स्वयंचालित 7. Service (Govt./Pvt.) / कर्मचारी (सरकारी/ निजी) 8. Student / विद्यार्थी 9. Truck Driver/helper / ट्रक चालक/ सहायक 10. Local transport worker (auto/ taxi/ personal driver, handcart pullers, rickshaw pullers etc./स्थानीय परिवहन कर्मचारी (ऑटो/ टैक्सी/ व्यक्तिगत ड्राइवर, देवेवाले रिश्तेवाले) 11. Hotel Staff / होटल कर्मचारी 12. Agricultural cultivator /landholder / कृषक/ जमींदार 13. Unemployed / बेरोजगार 99. Not Applicable (For Never married/Widows/Divorced/Separated) / लागू नहीं होता (अविवाहित/विधवा/तलाकनुदा/अलग रहितवर्गों के लिए)	
9. Does spouse reside alone in another place/ town away from wife for work for longer than 6 months? / क्या प्रतिवादी के पति उनसे दूर काम के लिए 6 महीनों से ज्यादा किसी दूसरे स्थान पर रहते हैं? 1. Yes / हाँ 2. No / नहीं 99. Not Applicable (For never married/Widows/Divorced/Separated) / लागू नहीं होता (अविवाहित/विधवा/तलाकनुदा/अलग रहितवर्गों के लिए)	
Signature / हस्ताक्षर : _____ Name / नाम : _____ (Person who filled the form/ फॉर्म भरने वाले का नाम)	Signature / हस्ताक्षर : _____ Name / नाम : _____ (Sentinel site in-charge/ सेंटिनल साइट के प्रभारी)

Annex 3

SACS's checklist for HSS, 2014-15

S. No	Activity	To be completed by	Status	Remarks
1. Background Activity				
1.1	Filling of DD (MES) if position is vacant			
1.2	Intimation to NACO on DD (MES)-Focal person for HSS 2014-15			
2. Finalization of ANC surveillance sites				
2.1	Validation of new sites in consultation with Regional Institutes			
2.2	Submission of composite sites details to NACO			
2.3	Sentinel site evaluation of ANC Sites			
2.4	Release of budget to Sentinel Sites			
3. Procurement				
3.1	Estimation for procurement of consumables			
3.2	Process initiated and Tenders issued			
3.3	Purchase order issued			
3.4	Consumables received at SACS			
3.5	Site-wise packing of consumables			
3.6	Consumables reached sites			
4. Testing lab preparation for HSS ANC sites				
4.1	Submission of contact details of lab personnel to NACO			
4.2	Submission of details of ELISA/RAPID tests done at ANC testing labs to NACO			
4.3	Submission of details of Sentinel Site-Testing Lab linkages to NACO			
4.4	Release of budget to Testing Lab			
4.5	Consumables reached Testing labs			
5. Training of SACS team, SSTs and ANC surveillance site personnel				
5.1	Finalization of SST members in consultation with RIs			
5.2	Participation of SACS in National Pre-Surveillance Meeting			
5.3	Participation of SACS in Regional Pre-Surveillance Planning Meeting & TOT			

S. No	Activity	To be completed by	Status	Remarks
5.4	Preparation of training plan including identification of training site @ 3 days per batch (10-12 sites per batch)			
5.5	Communication to the sentinel sites about training dates and location			
5.6	Preparation of Training Kits (Operational Manual, Technical guideline, Session-wise presentation, data forms, Sample Transport sheet, Date Form transport sheet, Site codes, sub site codes, site-testing lab linkage sheet etc)			
5.7	Training of sentinel sites			
6. Orientation/ Sensitization meetings at SACS involving NHM officials & district authorities				
6.1	Letter to key officials from NHM at state and district level on HSS and support required			
6.2	Sensitization of state-level NHM leadership and officials on HSS and support required during routine state-level meeting or as a separate meeting, as appropriate in each state			
6.3	Sensitization of district level NHM/DMHOs/CMOs on HSS and support required during site-level training or routine district-level meeting			
7. Development of monitoring plan				
7.1	Constitution of state and district-level monitoring team			
7.2	Development of integrated monitoring plan to ensure first visit to every sentinel site in first 15 days of start of HSS by SACS/SST team/RI/Central Team			
8. Printing and Supply of Documents				
8.1	Translation of Bilingual Data Forms to Local Language			
8.2	Printing of Bilingual Data Forms			
8.3	Bilingual Data Forms reached Sentinel Sites			
8.4	Printing of Stickers with Site Details/ Preparation of Stamps with Site Details			
8.5	Stickers/ Stamps with Site Details reached Sentinel Sites			
8.6	Operational Manuals/ Wall Charts supplied by NACO reached Sentinel Sites			
9. Commencement of HSS 2014-15 Implementation				
9.1	Date of Initiation of HSS 2014-15 at ANC sites			

Annex 4

Pre Surveillance Sentinel Site Evaluation Form, HSS 2014-15

National AIDS Control Organisation
 Department of AIDS Control, Ministry of Health and Family Welfare
 Government of India

HIV Sentinel Surveillance Round 2015
Pre-Surveillance Sentinel Site Evaluation (ANC Sites)

I. General Information

1. Type of site: 2. Nature of site: Single Site Sub-site/ Part of Composite Site

3. Name of the Single Site/ Sub-site 4. Name of Composite Site 5. Name of Site/ Sub-site In-charge

6. Address 7. Block 8. District 9. State

10. Contact Details

STD Code Number 1 Number 2 Number 3 Fax Mobile 1 Mobile 2 Email

11. Type of Facility Medical College Hospital Non-teaching Tertiary/ Speciality Hospital District Hospital
 Area Hospital CHC/ Rural Hospital/ Block Hospital PHC Nursing Home Clinic/Dispensary Others

12. Ownership of Facility 13. Average OPD Attendance per day 14. Sentinel site since Year

15. Routine blood tests done at the facility: Syphilis (VDRL/RPR) Hemoglobin Malaria Other tests None

16. Services available at the facility: PPTCT/ICTC ART STI 17. No. of days in a week ANC services are provided

18. Mode of Transport of samples to Testing Lab 19. Duration to reach Testing Lab (in hrs):

II. Status of Human Resource

	Medical officer/ Site In-charge	Nurse/ Counselor	Lab Technician
1. Is the staff in place?	<input type="radio"/> YES <input type="radio"/> NO	<input type="radio"/> YES <input type="radio"/> NO	<input type="radio"/> YES <input type="radio"/> NO
2. Is there a chance of transfer/ leave/ leaving the job in next 6 months?	<input type="radio"/> YES <input type="radio"/> NO	<input type="radio"/> YES <input type="radio"/> NO	<input type="radio"/> YES <input type="radio"/> NO
3. Did the staff participate in any previous rounds of surveillance?	<input type="radio"/> YES <input type="radio"/> NO	<input type="radio"/> YES <input type="radio"/> NO	<input type="radio"/> YES <input type="radio"/> NO
4. Is the staff trained in Sentinel Surveillance earlier?	<input type="radio"/> YES <input type="radio"/> NO	<input type="radio"/> YES <input type="radio"/> NO	<input type="radio"/> YES <input type="radio"/> NO

III. Status of Infrastructure

1. Refrigerator Available & Functional Available & Non-functional Not Available

2. Centrifuge Machine Available & Functional Available & Non-functional Not Available

3. Boiler/ Autoclave/ Other Equipment Available & Functional Available & Non-functional Not Available

4. Storage Racks/ Shelves Available & Functional Available & Non-functional Not Available

5. Sample Transportation Boxes Available & Functional Available & Non-functional Not Available

6. Cold-chain Equipment for Sample Transport Available & Functional Available & Non-functional Not Available

7. Needle Cutter/ Destroyer Available & Functional Available & Non-functional Not Available

8. Bio-medical Waste Disposal Unit (Incinerator/ Waste Pit) Available & Functional Available & Non-functional Not Available

9. Average duration of power cut in a day (in hrs):

10. Generator Available & Functional Available & Non-functional Not Available

IV. Other Site-Specific Issues
(Any specific issues or problems at the sentinel site anticipated for the coming round of surveillance may be noted below.)

SAVE

PRINT

RESET

Annex 5

State-wise HIV prevalence among ANC clinic attendees, HSS 2003-2015

State	2003	2004	2005	2006	2007	2008-09	2010-11	2012-13	2014-15
A & N Islands	0.45	0.00	0.00	0.17	0.25	0.06	0.13	0.00	0.06
Andhra Pradesh	1.45	1.70	1.67	1.41	1.07	1.22	0.76	0.59	0.35
Arunachal Pradesh	0.00	0.20	0.46	0.27	0.00	0.46	0.21	0.26	0.06
Assam	0.00	0.14	0.00	0.04	0.11	0.13	0.09	0.16	0.18
Bihar	0.11	0.22	0.38	0.36	0.34	0.30	0.17	0.33	0.37
Chandigarh	0.22	0.50	0.00	0.25	0.25	0.25	0.00	0.00	0.25
Chhattisgarh	0.76	0.00	0.32	0.31	0.29	0.41	0.43	0.51	0.41
D & N Haveli	0.13	0.00	0.25	0.00	0.50	0.00	0.00	0.00	0.00
Daman & Diu	0.27	0.38	0.13	0.00	0.13	0.38	0.13	0.13	0.25
Delhi	0.13	0.31	0.31	0.10	0.20	0.20	0.30	0.40	0.25
Goa	0.48	1.13	0.00	0.50	0.18	0.68	0.33	0.25	0.08
Gujarat	0.38	0.19	0.38	0.55	0.34	0.44	0.46	0.50	0.56
Haryana	0.27	0.00	0.19	0.17	0.16	0.15	0.19	0.17	0.25
Himachal Pradesh	0.25	0.25	0.22	0.06	0.13	0.51	0.04	0.04	0.00
Jammu & Kashmir	0.00	0.08	0.00	0.04	0.05	0.00	0.06	0.07	0.05
Jharkhand	0.08	0.05	0.14	0.13	0.13	0.38	0.45	0.19	0.18
Karnataka	1.43	1.52	1.49	1.12	0.86	0.89	0.69	0.53	0.36
Kerala	0.09	0.42	0.32	0.21	0.46	0.21	0.13	0.03	0.05
Madhya Pradesh	0.42	0.38	0.27	0.26	0.25	0.26	0.32	0.14	0.13
Maharashtra	1.15	0.97	1.07	0.87	0.76	0.61	0.42	0.40	0.32
Manipur	1.34	1.66	1.30	1.39	1.31	0.54	0.78	0.64	0.60
Meghalaya	0.35	0.00	0.00	0.09	0.00	0.04	0.05	0.26	0.16
Mizoram	1.70	1.50	0.81	0.94	0.85	0.72	0.40	0.68	0.81
Nagaland	1.69	1.85	1.97	1.36	1.10	1.14	0.66	0.88	1.29
Odisha	0.00	0.50	0.60	0.55	0.23	0.73	0.43	0.31	0.24
Puducherry	0.13	0.25	0.25	0.25	0.00	0.25	0.13	0.00	0.13
Punjab	0.13	0.44	0.25	0.20	0.12	0.31	0.26	0.37	0.32
Rajasthan	0.15	0.23	0.50	0.29	0.19	0.19	0.38	0.32	0.32
Sikkim	0.21	0.00	0.25	0.10	0.09	0.00	0.09	0.19	0.13
Tamil Nadu	0.83	0.81	0.54	0.54	0.58	0.35	0.38	0.36	0.27
Telangana	-	-	-	-	-	-	-	-	0.39
Tripura	0.00	0.25	0.00	0.42	0.25	0.00	0.00	0.19	0.19
Uttar Pradesh	0.22	0.44	0.15	0.25	0.08	0.18	0.21	0.20	0.21
Uttarakhand	0.06	0.00	0.00	0.11	0.06	0.22	0.25	0.27	0.12
West Bengal	0.46	0.43	0.89	0.38	0.40	0.17	0.13	0.19	0.11
India	0.80	0.95	0.90	0.60	0.49	0.49	0.40	0.35	0.29

Note: (1) Based on valid sites (75% of target achieved)(2) No HSS site in Lakshadweep during HSS 2010-11, 2012-13 and 2014-15(3) All figures in percentage (4) Figures from HSS 2014-15 are provisional.

Annex 6

State-wise HIV prevalence among FSW, HSS 2003-2011

State	2003	2004	2005	2006	2007	2008-09	2010-11
A & N Islands	-	0.50	0.40	-	-	-	-
Andhra Pradesh	20.00	16.97	12.97	7.32	9.74	11.14	6.86
Arunachal Pradesh	-	-	-	0.00	-	0.00	0.28
Assam	0.00	0.00	0.76	0.46	0.44	0.80	0.46
Bihar	4.80	0.20	2.24	1.68	3.40	2.98	2.30
Chandigarh	0.60	0.80	0.67	0.67	0.40	0.82	0.00
Chhattisgarh	-	-	-	1.57	1.43	-	2.73
D & N Haveli	-	-	-	-	-	-	-
Daman & Diu	-	-	-	-	-	-	-
Delhi	1.61	4.60	3.15	2.80	3.15	2.17	0.70
Goa	30.15	-	-	-	-	6.40	2.70
Gujarat	-	9.20	8.13	6.40	6.53	3.74	1.62
Haryana	-	-	2.00	1.19	0.91	1.55	0.48
Himachal Pradesh	0.00	0.80	0.00	0.66	0.87	0.55	0.53
Jammu & Kashmir	-	-	-	0.00	-	0.00	0.00
Jharkhand	-	0.00	0.80	0.88	1.09	0.94	0.82
Karnataka	14.40	21.60	18.39	8.64	5.30	14.40	5.10
Kerala	1.94	-	-	0.32	0.87	1.46	0.73
Madhya Pradesh	-	-	1.82	1.07	0.67	-	0.93
Maharashtra	54.29	41.69	23.62	19.57	17.91	10.77	6.89
Manipur	12.80	12.40	10.00	11.60	13.07	10.87	2.80
Meghalaya	-	-	-	-	-	-	-
Mizoram	-	13.69	14.00	10.40	7.20	9.20	-
Nagaland	4.40	4.44	10.80	16.40	8.91	14.06	3.21
Odisha	-	5.18	2.60	1.00	0.80	2.40	2.07
Puducherry	-	1.94	0.28	1.44	1.30	-	1.21
Punjab	0.00	-	-	1.36	0.65	0.97	0.85
Rajasthan	3.92	2.31	3.72	2.55	4.16	3.58	1.28
Sikkim	-	-	-	-	0.00	0.44	0.00
Tamil Nadu	8.80	4.00	5.49	4.62	4.68	6.22	2.69
Tripura	-	-	-	-	-	-	0.21
Uttar Pradesh	6.60	8.00	3.50	1.52	0.78	1.03	0.62
Uttarakhand	-	-	-	-	-	-	0.44
West Bengal	6.47	4.11	6.80	6.12	5.92	4.12	2.04
India	10.33	9.43	8.44	4.90	5.06	4.94	2.67

Note: (1) Based on valid sites (75% of target achieved) (2) No HSS site in Lakshadweep (3) All figures in percentage

Annex 7

State-wise HIV prevalence among MSM, HSS 2003-2011

State	2003	2004	2005	2006	2007	2008-09	2010-11
A & N Islands	1.25	-	-	-	-	-	-
Andhra Pradesh	13.20	16.00	6.45	10.25	17.04	23.60	10.14
Arunachal Pradesh	-	-	-	-	-	-	-
Assam	-	-	-	0.78	2.78	0.41	1.40
Bihar	1.60	1.60	0.40	0.30	0.00	1.64	4.20
Chandigarh	-	1.36	1.60	4.80	3.60	2.79	0.40
Chhattisgarh	-	-	-	-	-	-	14.98
D & N Haveli	-	-	-	-	-	-	-
Daman & Diu	-	-	-	-	-	-	-
Delhi	27.42	6.67	20.40	12.27	11.73	7.87	5.34
Goa	9.09	1.68	4.90	4.80	7.93	6.40	4.53
Gujarat	-	6.80	10.67	11.20	8.40	5.48	3.00
Haryana	-	-	-	0.00	5.39	3.20	3.05
Himachal Pradesh	-	-	-	0.44	0.00	0.40	1.23
Jammu & Kashmir	-	-	-	-	-	-	-
Jharkhand	-	-	-	-	-	2.00	0.40
Karnataka	10.80	10.00	11.61	19.20	17.60	12.52	5.36
Kerala	-	0.89	3.20	0.64	0.96	0.75	0.36
Madhya Pradesh	-	-	-	-	-	-	7.94
Maharashtra	18.80	11.20	10.40	15.60	11.80	11.90	9.91
Manipur	29.20	14.00	15.60	10.40	16.40	17.21	10.53
Meghalaya	-	-	-	-	-	-	-
Mizoram	-	-	-	-	-	-	-
Nagaland	-	-	-	-	-	-	13.58
Odisha	-	-	-	-	7.37	4.19	3.79
Puducherry	-	5.22	5.60	2.47	2.00	-	1.21
Punjab	-	-	-	4.80	1.22	3.00	2.18
Rajasthan	-	-	-	0.00	-	-	-
Sikkim	-	-	-	-	-	-	-
Tamil Nadu	4.20	6.80	6.20	5.60	6.60	5.24	2.41
Tripura	-	-	-	-	-	-	-
Uttar Pradesh	-	-	-	-	0.40	4.07	1.56
Uttarakhand	-	-	-	-	-	-	-
West Bengal	-	1.33	0.54	6.60	5.61	4.90	5.09
India	8.47	7.47	8.74	6.41	7.41	7.30	4.43

Note: (1) Based on valid sites (75% of target achieved) (2) No HSS site in Lakshadweep (3) All figures in percentage

Annex 8

State-wise HIV prevalence among IDU, HSS 2003-2011

State	2003	2004	2005	2006	2007	2008-09	2010-11
A & N Islands	-	-	-	-	-	-	-
Andhra Pradesh	-	-	-	-	3.71	6.90	3.05
Arunachal Pradesh	-	-	-	0.00	0.00	0.23	0.24
Assam	5.56	4.48	7.86	2.86	2.14	3.64	1.46
Bihar	-	-	-	0.20	0.60	5.47	4.54
Chandigarh	-	4.80	9.20	17.60	8.64	13.60	7.20
Chhattisgarh	-	-	-	-	-	-	0.42
D & N Haveli	-	-	-	-	-	-	-
Daman & Diu	-	-	-	-	-	-	-
Delhi	14.40	17.60	22.80	10.00	10.10	18.60	18.27
Goa	-	-	-	-	-	-	-
Gujarat	-	-	-	-	-	-	1.60
Haryana	-	-	-	0.00	0.80	2.00	0.80
Himachal Pradesh	-	-	-	-	-	0.65	4.89
Jammu & Kashmir	0.00	0.00	0.00	2.50	-	0.00	0.00
Jharkhand	-	-	-	0.40	-	1.65	2.02
Karnataka	2.80	0.00	-	3.60	2.00	2.00	0.00
Kerala	-	2.58	5.19	9.57	7.85	3.04	4.95
Madhya Pradesh	-	-	-	-	-	-	5.13
Maharashtra	22.89	29.20	12.80	20.40	24.40	20.00	14.17
Manipur	24.47	21.00	24.10	19.80	17.90	28.65	12.89
Meghalaya	0.00	0.00	0.00	3.33	4.17	-	6.44
Mizoram	6.40	6.80	4.80	3.05	7.53	5.28	12.01
Nagaland	8.43	3.22	4.51	2.39	1.91	3.17	2.21
Odisha	-	-	-	10.40	7.33	7.20	7.16
Puducherry	-	-	-	-	-	-	-
Punjab	-	-	-	13.80	13.79	26.36	21.10
Rajasthan	-	-	-	-	-	-	-
Sikkim	-	-	0.48	0.20	0.47	1.45	0.00
Tamil Nadu	63.81	39.92	18.00	24.20	16.80	9.48	-
Tripura	-	-	10.92	0.00	0.00	0.42	0.45
Uttar Pradesh	-	-	-	4.63	1.29	2.46	2.03
Uttarakhand	-	-	-	-	-	-	4.33
West Bengal	2.61	3.83	7.41	4.64	7.76	6.90	2.72
India	13.15	11.16	10.16	6.92	7.23	9.19	7.14

Note: (1) Based on valid sites (75% of target achieved) (2) No HSS site in Lakshadweep (3) All figures in percentage

Annex 9

State-wise HIV prevalence among Single Male Migrants (SMM), Long Distance Truckers (LDT) and Transgender (TG), HSS 2003-2011

State	SMM					LDT					TG				
	2005	2006	2007	2009	2011	2006	2007	2009	2011	2006	2007	2009	2011		
A & N Islands	-	-	-	-	-	-	-	-	-	-	-	-	-		
Andhra Pradesh	-	-	-	-	-	-	-	-	3.20	-	-	-	-		
Arunachal Pradesh	-	-	-	-	-	-	-	-	-	-	-	-	-		
Assam	-	-	-	-	-	-	-	-	-	-	-	-	-		
Bihar	-	-	-	-	-	-	-	-	-	-	-	-	-		
Chandigarh	-	-	-	-	-	-	-	-	-	-	-	-	-		
Chhattisgarh	-	-	-	-	-	-	-	-	-	-	-	-	-		
D & N Haveli	0.00	-	-	-	-	-	-	-	-	-	-	-	-		
Daman & Diu	-	-	-	-	-	-	-	-	-	-	-	-	-		
Delhi	-	-	-	-	-	-	-	-	-	-	-	-	-		
Goa	-	-	-	-	-	-	-	-	-	-	-	-	-		
Gujarat	-	-	-	1.80	0.67	-	-	-	3.09	-	-	-	-		
Haryana	-	-	-	-	1.33	-	-	-	-	-	-	-	-		
Himachal Pradesh	-	-	0.00	0.00	0.00	-	0.40	-	-	-	-	-	-		
Jammu & Kashmir	-	-	-	-	-	-	-	-	-	-	-	-	-		
Jharkhand	-	-	-	-	-	-	-	-	1.20	-	-	-	-		
Karnataka	-	-	-	-	0.00	-	-	-	3.20	-	-	-	-		
Kerala	-	-	-	-	0.00	2.40	3.60	0.80	0.00	-	-	-	-		
Madhya Pradesh	-	-	-	-	-	-	-	-	2.47	-	-	-	-		

State	SMM					LDT					TG						
	2005	2006	2007	2009	2011	2006	2007	2009	2011	2006	2007	2009	2011	2006	2007	2009	2011
Maharashtra	-	2.40	1.60	3.00	1.07	-	-	-	1.61	29.60	42.21	16.40	18.80	-	-	-	-
Manipur	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Meghalaya	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mizoram	-	-	-	0.80	1.22	-	-	-	-	-	-	-	-	-	-	-	-
Nagaland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Odisha	-	1.44	-	3.60	3.20	2.73	-	-	-	-	-	-	-	-	-	-	-
Puducherry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Punjab	-	-	-	-	1.20	1.07	-	-	-	-	-	-	-	-	-	-	-
Rajasthan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sikkim	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tamil Nadu	-	-	-	-	0.80	-	-	-	2.01	-	-	-	3.82	-	-	-	-
Tripura	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uttar Pradesh	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uttarakhand	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
West Bengal	-	-	9.27	2.42	1.61	2.72	1.75	3.71	-	-	-	-	-	-	-	-	-
India	0.00	1.60	3.61	2.17	0.99	2.37	2.87	2.59	2.72	2.87	1.57	1.640	8.82	29.60	42.21	16.40	8.82

Note: (1) Based on valid sites (75% of target achieved) (2) No HSS site in Lakshadweep (3) All figures in percentage



National AIDS Control Organisation

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Ministry of Health & Family Welfare, Government of India
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