HIV Sentinel Surveillance 2012-13

A Technical Brief

India's voice against AIDS
Department of AIDS Control
Ministry of Health & Family Welfare, Government of India
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FOREWORD

India has the largest and one of the best HIV surveillance systems in the world. HIV surveillance in India was started in 1985 when the Indian Council of Medical Research initiated surveillance among blood donors and patients with Sexually Transmitted Diseases. In 1998, the National AIDS Control Organisation (NACO) formalized Annual HSS in the country and in subsequent years, Antenatal Clinic (ANC) sites in peri-urban and rural settings, and High Risk Group surveillance sites were rapidly scaled up.

Concurrent with increase in the number of sentinel sites, there has been a renewed focus on improving sample collection and processing and the quality of data collection and management. Standardized training modules have been developed to streamline training across the country. Samples collected are tested at 117 State Reference Laboratories with guidance and external quality assurance by 13 National Reference Laboratories. Quality of data collection has been enhanced through rigorous monitoring and supervision of the HSS activities by officers and epidemiologists from the State AIDS Control Societies, designated Regional Institutes, and Development Partners. The introduction of web-based monitoring through the Strategic Information Management System for HSS 2012-13, has facilitated real time monitoring and supervision of surveillance activities and enabled immediate corrective action.

This technical brief highlights the key findings from HSS 2012-13 besides briefly presenting the methodology and implementation mechanism. Declining trend continues to be noted in places where HIV was visible and interventions were started earlier in the epidemic, while emerging pockets are observed in some low and very low prevalence states.

This report is the collective effort of many teams. I would like to congratulate the field staff at all sentinel sites and testing labs, the Project Directors and surveillance teams in the State AIDS Control Societies, staff of the Regional Institutes and National Institutes, Central Team Members and State Surveillance Teams without whose efforts, surveillance on such a mammoth scale would be impossible. I appreciate the technical support extended by the WHO, CDC and UNAIDS in the planning, implementation and supervision of the 13th round of HSS. I commend Dr. S. Venkatesh, Deputy Director General (Monitoring and Evaluation), Department of AIDS Control (DAC) and all members of his team for successfully implementing HSS 2012-13 and bringing out this technical brief following the highest possible standards.

As NACP-IV is being implemented, data from 13th round of HSS will be instrumental in district re-categorization and subsequent decentralized evidence based planning and implementation. This data will be also 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. It also provides information for prioritization of programme resources and evaluation of programme impact. I am confident that all stakeholders will use the information provided in this technical brief to understand the landscape of the HIV epidemic in India and to plan and implement evidence-based local responses to the epidemic.

LOV VERMA

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
CHC	Community Health Center
CI	Confidence Interval
CTM	Central Team Member
DAC	Department of AIDS Control
DBS	Dried Blood Spot
DAPCU	District AIDS Prevention and Control Unit
ELISA	Enzyme-Linked Immunosorbent Assay
EQAS	External Quality Assurance Scheme
FSW	Female Sex Worker
HIV	Human Immuno-deficiency Virus
HRG	High Risk Group
HSS	HIV Sentinel Surveillance
IBBS	Integrated Biological and Behavioural Surveillance
ICMR	Indian Council of Medical Research
IDU	Injecting Drug Users
LDT	Long Distance Truckers
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
PGIMER	Postgraduate Institute of Medical Education and Research, Chandigarh
RI	Regional Institute
RIMS	Regional Institute of Medical Sciences, Imphal
SACS	State AIDS Control Society
SIMS	Strategic Information Management System
SMM	Single Male Migrant
SRL	State Reference Laboratory
STD	Sexually Transmitted Disease
TG	Transgender
ToT	Training of Trainers
UNAIDS	Joint United Nations Programme on HIV/AIDS
UT	Union Territory
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 trends, 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 public health institutes of India.

2. The 13th round of HSS was implemented during 2012-13 at 763 sites, including 750 Antenatal clinics (ANC) Surveillance Sites, covering 556 districts across 34 States and Union Territories (UTs) in the country. For High Risk Groups (HRGs) and Bridge Populations, a Nationwide Integrated Biological and Behavioral Surveillance (IBBS) is being carried out as a strategic shift to strengthen the surveillance system among these groups.

3. The methodology adopted during HSS was Consecutive Sampling with Unlinked Anonymous Testing. Specimens were tested for HIV following the Two Test Protocol. A total of 2,95,246 ANC samples were tested from 741 valid sites during HSS 2012-13.

4. The overall HIV prevalence among ANC clinic attendees, considered a proxy for prevalence among the general population, continues to be low at 0.35% (90% CI: 0.33%-0.37%). The highest prevalence was recorded in Nagaland (0.88%), followed by Mizoram (0.68%), Manipur (0.64%), Andhra Pradesh (0.59%) and Karnataka (0.53%). Chhattisgarh (0.51%), Gujarat (0.50%), Maharashtra (0.40%), Delhi (0.40%) and Punjab (0.37%) are other states which recorded HIV prevalence of more than the national average. Bihar (0.33%), Rajasthan (0.32%) and Odisha (0.31%) recorded HIV prevalence slightly lower than the country average.

5. Similar to the 12th round of HSS (2010-11), all states have shown less than 1% HIV prevalence among ANC clinic attendees in this most recent 13th round (HSS 2012-13). However, on a site-wise analysis, it is noted that overall, 80 sentinel sites have shown HIV prevalence of 1% or more among ANC clinic attendees. Of these, 27 sites are in the moderate and low prevalence states of Arunachal Pradesh, Bihar, Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Meghalaya, Odisha, Rajasthan, Uttar Pradesh, Uttarakhand and West Bengal. Twelve sites across the country recorded a prevalence of 2% or more including 3 sites, one each in the low prevalence states of Chattisgarh, Gujarat and Rajasthan.

6. Data from consistent sites has been analysed to interpret HIV trends. An overall decline in HIV prevalence among ANC clinic attendees is noted at a national level as well as in the historically high prevalence states in the south and northeast regions of the country. However, rising trends among ANC clinic attendees are observed in some moderate and low prevalence states such as Chhattisgarh, Gujarat, Jharkhand, Odisha, Punjab, Assam, Delhi, Haryana, Uttar Pradesh and Uttarakhand.

7. This declining trend of the HIV epidemic in the country is also corroborated by a declining number of HSS sites showing a prevalence of 1% or more. The number of surveillance sites among ANC has increased from 476 sites in 2003, 626 in 2006 and finally to 750 sites in HSS 2012-13. However, in the same period, the number of ANC HSS sites showing a prevalence of 1% or more has decreased from 140 in 2003 to 80 in 2012-13, consistent with a long term declining prevalence trend.

8. The HIV epidemic in the country continues to be heterogenic, especially in terms of its geographical spread. The declining trend among ANC clients, considered as a proxy for general population, is consistent with India's story of large scale implementation and high coverage during the National AIDS Control Programme (NACP)-III. Preliminary findings from the 13th round of HSS strongly support the DAC's focus on states like Punjab, Odisha, Gujarat, Chhattisgarh, Bihar, Uttar Pradesh, Jharkhand, Rajasthan etc where the HIV epidemic has been recent and the overall burden is relatively low but are having pockets of HIV. There is a need for better understanding of the drivers of epidemic in these states. In-depth epidemiological investigation of observed emerging pockets will help the programme in its endeavor to accelerate halting and reversing the HIV epidemic in NACP-IV.

9. The 13th round of HSS provides crucial evidence base for planning and implementation of programmatic initiatives under NACP-IV. Data from HSS will be instrumental in district re-categorization and subsequent decentralized evidence-based planning and implementation. The data will be used to estimate HIV prevalence, incidence and burden, to serve as a baseline under NACP-IV and provide information for prioritization of programme resources and evaluation of programme impact.

1. Introduction

The year 2012-13 marks the transition of the National AIDS Control Programme (NACP) from Phase III to Phase IV. At this important juncture, the 13th round of HIV Sentinel Surveillance (HSS) was implemented in 556 districts in 34 States and Union Territories (UTs) of India during January-April 2013. This report presents the findings of the 13th round of National HSS and shows prevalence levels and trends of the HIV epidemic from 2003 to 2012-13. Though the 13th round of HSS was carried out at ANC and STD sites only, this report also includes data on HIV prevalence among High Risk Groups (HRGs) and Bridge Populations from earlier rounds of HSS.

1.1 Objectives of HIV Sentinel Surveillance

- To understand the levels and trends of the HIV epidemic among the general population, bridge populations 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 Important Applications of HIV Sentinel Surveillance data

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

1.3 Expansion of HIV Sentinel Surveillance

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).

The year 2003 witnessed the first major expansion of the surveillance network. There were several factors responsible for this expansion. High levels of HIV were noted at urban ANC sites in high prevalence states; field evidence indicated a likelihood of spread of HIV to the rural areas; and it became essential to address a potential bias in the surveillance estimates due to the presence of sentinel sites only in urban areas. As a result, more than 200 rural ANC sentinel sites were established at the Community Health Center (CHC) level in most districts in high prevalence states as well as in some districts in low prevalence states of North India. Overall, 354 districts had at least one HSS site in 2003. In subsequent rounds, up to 2005, expansion continued mainly among high risk group (HRG) sites.

The year 2006 was the second and the most important milestone in the expansion of the HIV sentinel surveillance network in India. It was decided that at least one sentinel site should be functional in every district of India, and new sentinel sites were added among all risk groups in that year. As a result, the number of surveillance sites increased from 703 in 2005 to 1,122 in 2006 including 8 surveillance sites for 15-24 year old pregnant women and composite sites in places where it was difficult to establish stand-alone sites. In the same year, concurrent with the expansion of surveillance network, the HSS implementation structure was strengthened with the involvement of five leading public health institutions in the country as Regional Institutes (RI) for providing technical support, guidance, monitoring and supervision for implementing HSS. Supervisory structures were further strengthened with the constitution of Central and State Surveillance Teams comprising public health experts, epidemiologists and microbiologists from several medical colleges and institutions.

During the subsequent three rounds of HSS, the focus has been on further expansion of surveillance among High Risk Groups and Bridge Populations. These rounds also witnessed several key strategic improvements in the implementation of HIV Sentinel Surveillance such as:

i. Undertaking thorough technical validation of new sentinel sites by Regional Institutes before including the sites in surveillance and dropping poorly performing sites

ii. Introduction of Dried Blood Spot Method (DBS) of sample collection from HRG to overcome logistic problems at HRG sites

iii. Introduction of Informed Assent/ Consent at High Risk Group sites to address ethical concerns

iv. Initiation of random sampling methods of recruitment, at HRG sites, taking advantage of the availability of updated line lists of HRG at the Targeted Intervention(TI) projects

v. Standardization of training protocols across the states with uniform session plans and material and adoption of a two–tier training plan with Training of Trainers (TOT) followed by training of site personnel

vi. Development of a four-tier supervisory structure – Central Team from national level, Regional Institutes, State Surveillance Teams constituted by Regional Institutes and State AIDS Control Society (SACS)-constituted teams

vii. Stronger focus on supportive-supervision & action-oriented monitoring

viii. Increased focus on quality in all aspects – quality of planning, quality of training, quality of implementation and quality of supervision and feedback

ix. Decreasing the number of testing laboratories for ANC and STD samples and limiting them to well performing laboratories with Enzyme-Linked Immunosorbent Assay (ELISA) facilities, to ensure better quality of testing as well as close supervision

x. Development of a new web-based data management system to enhance data quality and to ensure real time monitoring of surveillance activities

xi. Initiation of epidemiological investigation into unusual findings (sudden rise or decline in prevalence) for understanding the reasons and making necessary corrections

The 13th round of HSS was implemented at 763 ANC and STD sites (750 ANC and 13 STD sites). Most of the STD sites from the 12th round of HSS were phased out during HSS 2012-13. For High Risk Groups and Bridge Populations, a National Integrated Biological and Behavioral Surveillance (IBBS) is being carried out as a strategic shift to strengthen surveillance among these groups. The expansion of HSS sites in the country from 1998 to 2012-13 is summarized in Table 1.

As the expansion continued, the geographical distribution of surveillance sites changed from concentration in high prevalence states to uniform distribution across the country. In 2003, 271 districts of the country had at least one ANC surveillance site and half of them were in the southern and western regions of country. In 2006, 464 districts in country had at least one ANC surveillance site. During the 13th round of HSS implementation, 551 districts had at least one ANC surveillance site, 57% of them were in northern & eastern regions, 30% were in the southern & western regions and the remaining 13% were in the north-eastern region of country. Figure 1a,1b and 1c depicts the changing pattern of distribution of ANC surveillance sites in the country. The details on state wise distribution of HSS sites for the years 2003, 2006, 2010-11 and 2012-13 are provided in Annex-1.

Table 1: Expansion of HIV Sentinel Surveillance sites in India

Site Type	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008-09	2010 11	2012-13
STD	76	75	98	133	166	163	171	175	251	248	217	184	13
ANC	92	93	111	172	200	266	268	267	470	484	498	514	564
ANC (Rural)	-	-	-	-	-	210	122	124	158	162	162	182	186
IDU	5	6	10	10	13	18	24	30	51	52	61	79	-
MSM	-	-	3	3	3	9	15	18	31	40	67	96	-
FSW	1	1	2	2	2	32	42	83	138	137	194	261	-
Migrant	-	-	-	-	-	-	-	1	6	3	8	19	-
TG	-	-	-	-	-	-	-	1	1	1	1	3	-
Truckers	-	-	-	-	-	-	-	-	15	7	7	20	-
TB	2	2	-	-	-	-	7	4	-	-	-	-	-
Fisher-Folk/ Seamen	-	-	-	-	-	1	-	-	1	-	-	-	
Total	176	177	224	320	384	699	649	703	1122	1134	1215	1359	763[1]

[1] IBBS is being implemented at 80 FSW domains, 68 MSM domains, 60 IDU domains, 15 TG domains, 35 Male Migrants domain at destination districts and 16 domains of Married Female at high outmigration districts

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

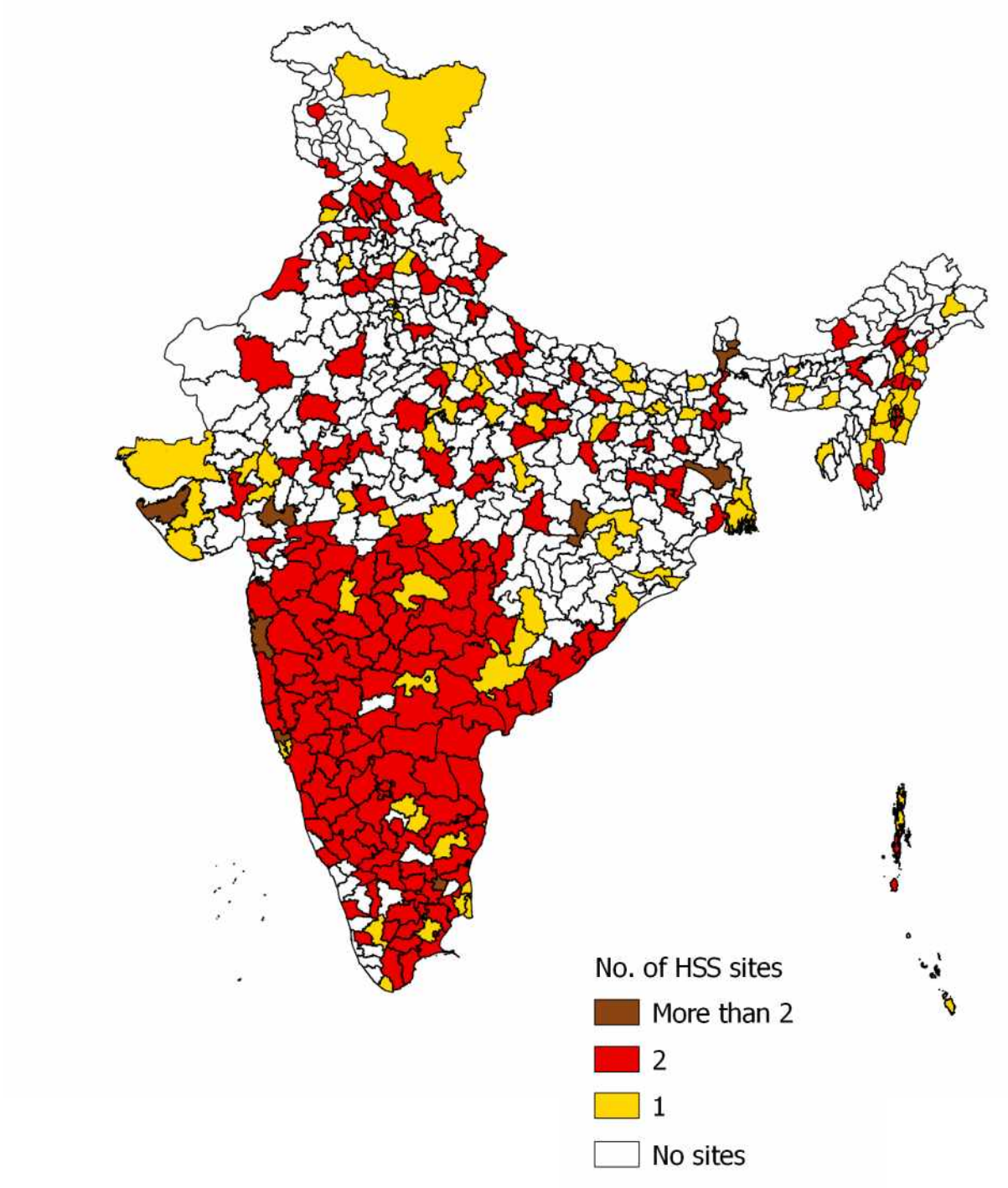


Figure 1b: Distribution of ANC HSS sites, HSS 2006

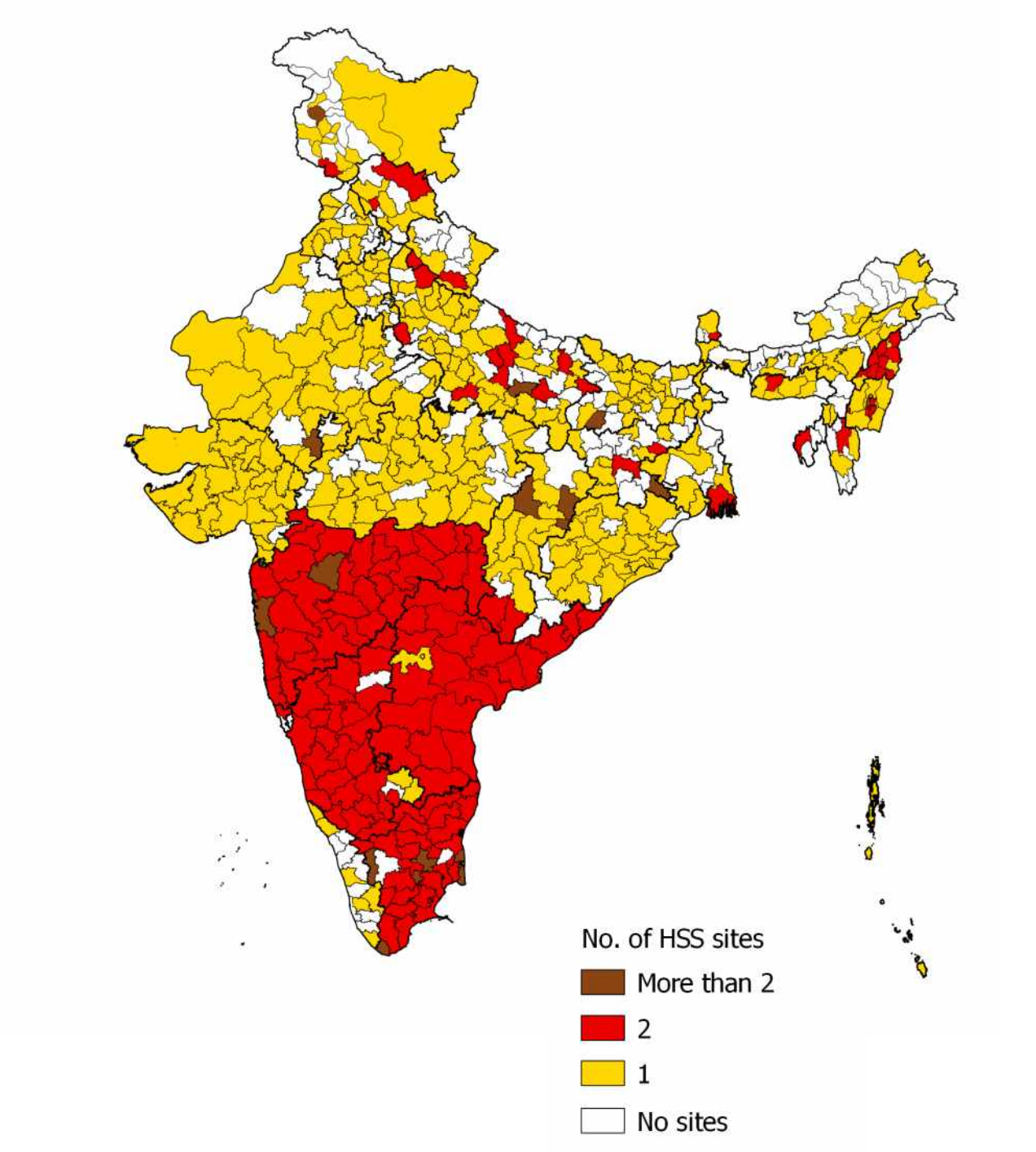
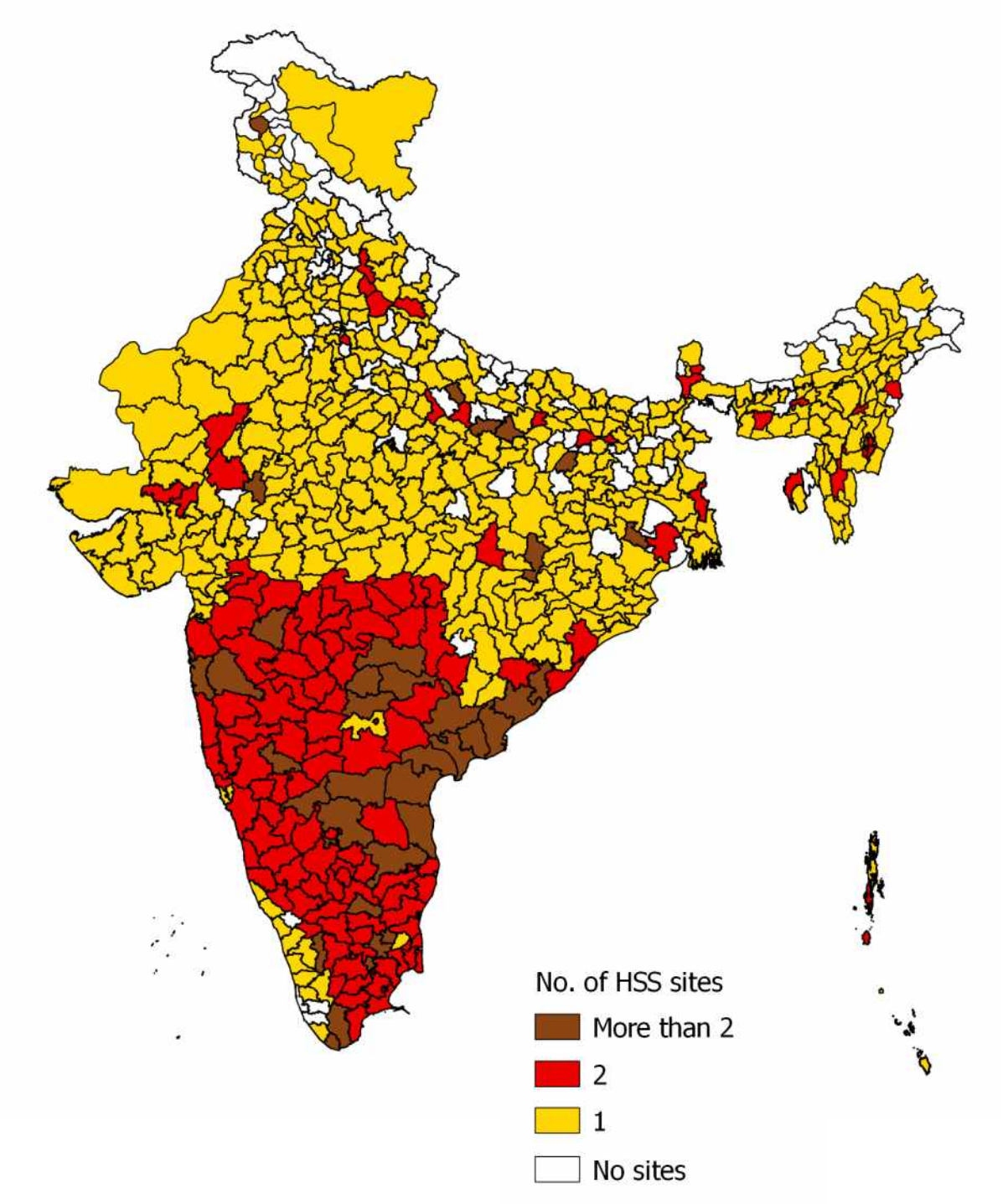


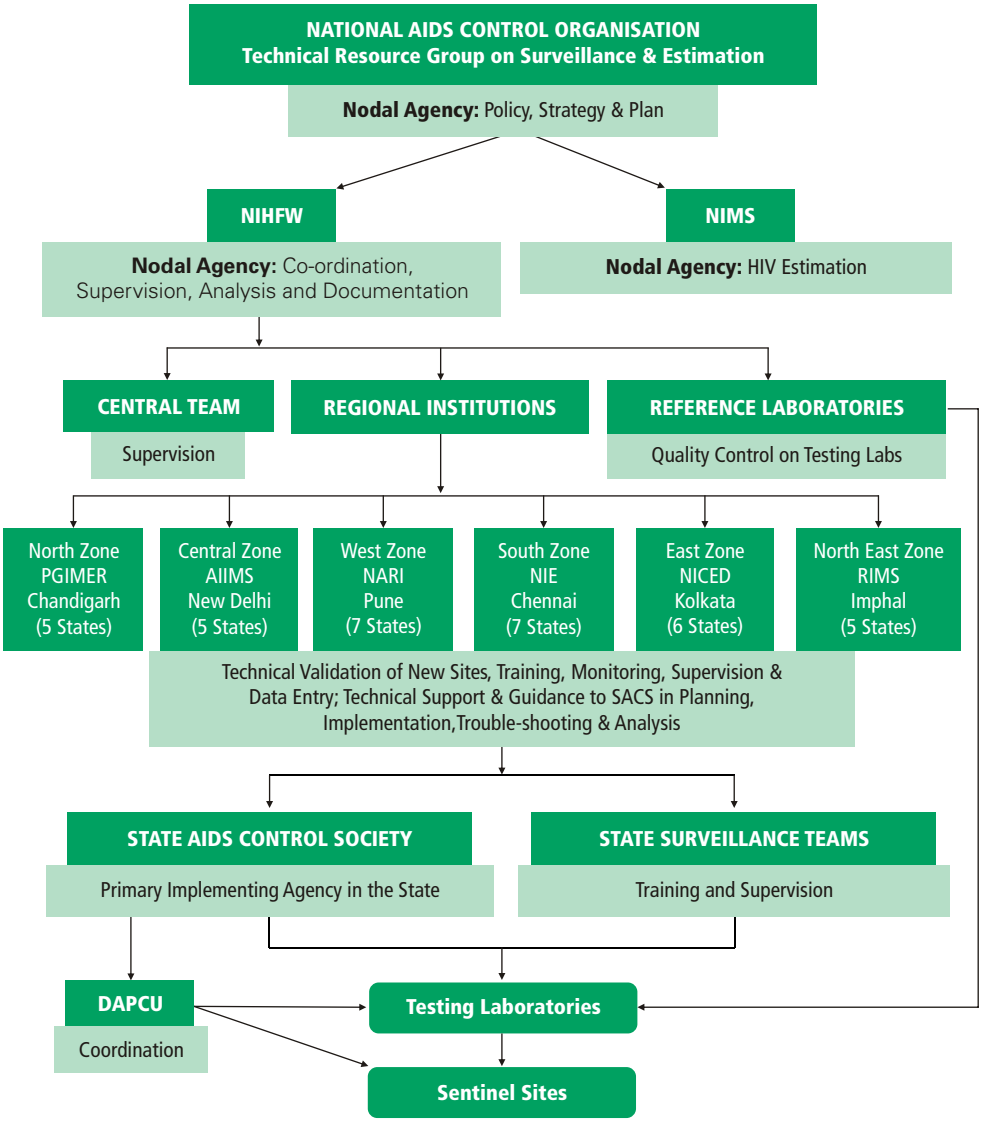
Figure 1c: Distribution of ANC HSS sites, HSS 2012-13



1.4 Implementation Structure

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

Figure 2: Implementation Structure of HIV Sentinel Surveillance



2. Methodology

Complete details of the HSS methodology can be found in the HIV Sentinel Surveillance Operational Guidelines available on the website of the Department of AIDS Control (DAC)[2]. 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 2012-13 at ANC Surveillance sites is given in Annex-2.

[2] http://naco.gov.in/NACO/Quick_Links/Surveillance/

3. Initiatives during HSS 2012-13

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 13th round of HIV Sentnel surveillance 2012-13, several new initiatives were implemented:

1. **SACS Checklist for Preparatory Activities:** This was developed to closely monitor the planning process for HSS in each State (Annex 3). All the preparatory activities were broken down into specific tasks with clear timelines and SACS were required to submit the completion status for each task. A team of officers from NACO coordinated with state nodal persons on a day-to-day basis to ensure that preparatory activities in all states were as per the timelines.

2. **Pre-Surveillance Sentinel Site Evaluation (SSE):** A pre-surveillance evaluation of ANC & STD sentinel sites was carried out to identify human resource and infrastructure related issues at the sentinel sites and necessary corrective action was taken at the identified sites before the initiation of the surveillance. It also provided information on the background profile of the sites such as type of facility, average OPD attendance, availability of HIV/AIDS services, distance of facilities from HSS labs etc (Annex 4).

3. **Standard Operational Manuals, Wall Charts and Bilingual Data Forms:** These were developed to simplify the HSS methodology for site level personnel and ensure uniform implementation of the guidelines in all sentinel sites across the country. These were printed centrally (including Hindi-English bilingual data forms) and distributed across the country.

4. **Training under HSS 2012-13**

   Steps to improve quality of Training

   I. A well-structured training programme was adopted to ensure that all personnel involved in HSS at different levels were adequately and uniformly trained in their respective areas of responsibility.

   II. The training agenda, curriculum and material, including planning and reporting formats were all standardized and used in all states. Standard slide sets and training manuals, to be used in the training of sentinel site personnel, were developed centrally to ensure uniformity.

   III. Trainings were made interactive by including group work and an exercise on "Know Your Sentinel Site". This exercise helped participants in identifying the routine practices at their sites that could affect the implementation of surveillance and recommended actions to address the same.

   IV. Pre- and post-test assessments were done for each participant during site level training. Analysis of these scores helped state teams to identify priority sites for supervisory visits.

   V. Batch-wise training reports in standard formats were submitted at the end of each training.

Details of Trainings

I. Trainings started with two batches of a National Pre-Surveillance Meeting with around 90 personnel from Regional Institutes and SACS to discuss the critical aspects of planning for HSS 2012-13 and understand the system for supportive supervision through the online Strategic Information Management System (SIMS) Application.

II. This was followed by 2-day Regional Trainings of Trainers (ToTs) organised by the Regional Institutes for SACS officers & State Surveillance teams, comprising of public health experts and microbiologists. These were aimed at creating state level master trainers and to plan for site-level trainings.

III. Subsequent to that, site level trainings (2 days per batch @ 8-10 sites per batch) were conducted in all the states in multiple batches. Representatives from Regional institutes and NACO participated in the trainings as observers to ensure that trainings were provided as per the protocol and all sessions were covered as per the prescribed session plan.

IV. Separate trainings were organised for microbiologists & laboratory technicians from 117 ANC/STD testing laboratories and 13 National Reference Laboratories on Surveillance testing protocols and laboratory reporting mechanisms through the SIMS Application for HSS.

V. Overall, 40 central team members, 30 officers from six Regional Institutes, 95 SACS officers including Surveillance, focal points, Epidemiologists and M&E officers, 280 State Surveillance Team (SST) members, 260 laboratory personnel including microbiologists & laboratory technicians from the designated testing laboratories, and over 3,000 sentinel site personnel including medical officers, nurse/ counselors and laboratory technicians were trained under HSS 2012-13.

5. **Laboratory System:** For HSS 2012-13, the laboratory system was strengthened by limiting the testing of specimens to designated State Reference Laboratories (SRLs). Real time monitoring of the quality of blood specimens and laboratory processes was achieved through introduction of online reporting through the SIMS Application for HSS. Efforts were made to standardize aspects of quality assurance in samples testing under HSS as well as streamlining responses in case of discordant test results between the testing laboratory and the reference laboratory, through the SIMS Application.

6. **Supervisory Mechanisms for HSS 2012-13:** Highest focus was given to supervision of all HSS activities to ensure high quality of implementation and data collected during surveillance. Extensive mechanisms were developed to set up a comprehensive supervisory system for HSS and to ensure that 100% of HSS sites were visited within the first 15 days of start of sample collection. The principles adopted include action-oriented supervision, real time monitoring & feedback, accountability for providing feedback & taking action, and an integrated web-based system to enhance the reach & effectiveness of supervision.

a. SIMS Modules for web-based Supervision:

Specific modules were developed and made operational in the web-based SIMS for HSS in order to facilitate real time monitoring of HSS 2012-13 activities.

I. Field Supervision was done through trained supervisors who visited the sentinel sites to monitor the quality of recruitment of respondents and other site level procedures. Real time reporting of

field supervision was done through the 'Supervisor Module' via a sub module 'Field Supervisory Quick Feedback' and recommended follow-up actions were tracked through the 'Action Taken Report' module in the same application. . The module was used extensively by all the supervisors and helped in quick identification and resolution of issues in the field.

II. Data Supervision was done through Data Managers at Regional Institutes to monitor the quality of data collection and transportation. It was done through the 'MIS' module in the SIMS Application for HSS.

III. Laboratory Supervision was done through National and State Reference Laboratories to monitor the quality of blood specimens, progress in laboratory processing and external quality assurance. It was facilitated through the 'Lab Module' of SIMS.

Overall, 80% of supervisors who visited the sentinel sites for supervision, reported on the 'Field Supervisor Quick Feedback' format in SIMS and 52% of 'Action Taken Report' formats were submitted by HSS focal persons from SACS and Regional Institutes. Laboratory reporting, through the 'Lab module' was completed by 87% of SRLs

b. Integrated Monitoring and Supervision Plan

I. An integrated supervision plan for each state was developed by Regional Institutes, SACS and NIHFW to avoid duplication in monitoring coverage, thereby facilitating maximum coverage of surveillance sites by supervisors.

II. The first round of visits was primarily done by Regional Institutes, SACS & SST members. Central team Members (CTM) visited priority sites identified through feedback from the first round of visits. Subsequent visits were made based on priority with a target of making at least three visits for each identified problematic site.

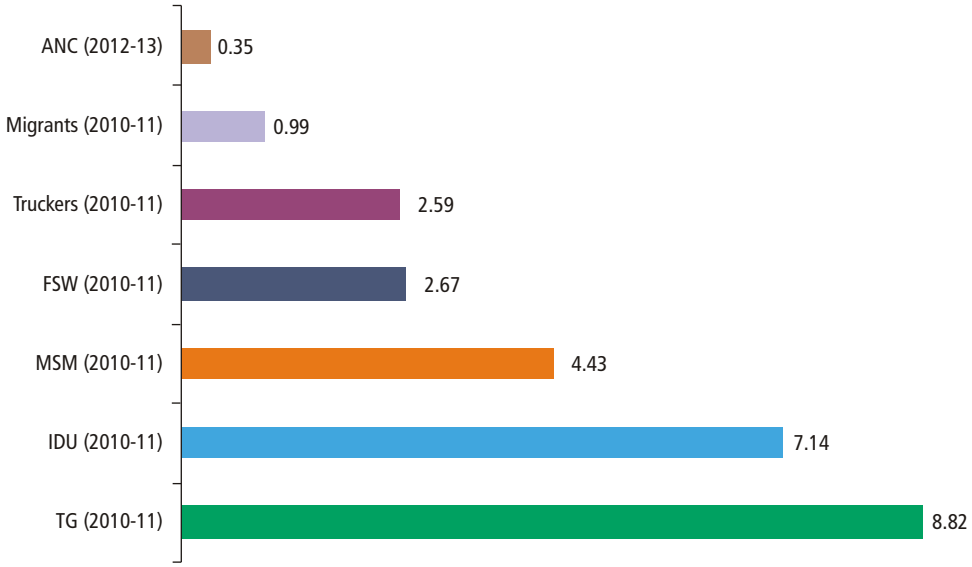
c. SMS-based Daily Reporting from Sentinel Sites

The 13th round of HSS 2012-13 piloted 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 DAC and it 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.

4. Overview of HIV Levels and Trends among General Population at National Level

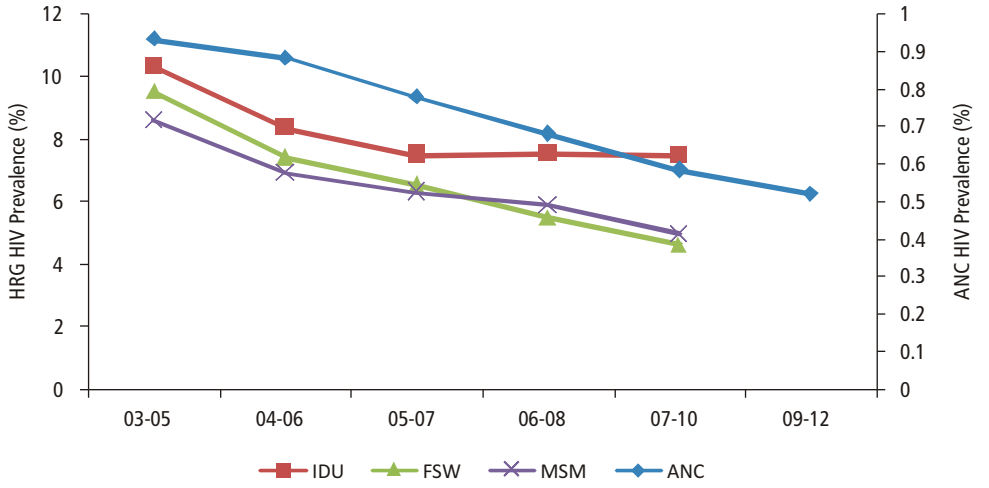
Figure 3 depicts the overall HIV prevalence at national level among ANC clinic attendees from HSS 2012-13 and HRG & bridge populations from the HSS 2010-11, based on valid sites. The HIV prevalence observed among ANC clinic attendees, considered as a proxy for HIV prevalence in the general population, during 2012-13 was 0.35% (90% CI: 0.33-0.37).

Figure 3: HIV Prevalence (%) among ANC Clients (2012-13) & 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 2013 for ANC and from 2003 to 2011 for HRGs and bridge populations. At national level, a declining trend continues to be noted among ANC clinic attendees (Figure 4). A declining trend was also noted till 2010-11 among FSW & MSM; while a stable trend was recorded among IDU. Data is inadequate to interpret trends among TG, migrants & truckers.

Figure 4: HIV Prevalence trend across different groups, India, 2010-11[3]



[3] 3-yr moving averages based on consistent sites; ANC–385 sites, FSW–89 sites, MSM–22 sites, IDU–38 sites

5. HIV Levels in General Population

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 2012-13, HSS was implemented at 750 ANC sentinel sites across the country. 741 sites achieved a valid sample size of 300 or more (minimum 75% of target) and only data from valid sites is used for this analysis. Overall, 2,95,246 samples were collected at these 741 valid sentinel sites.

Figure 5 shows state-wise HIV prevalence among ANC clinic attendees. Considerable differences continue to exist in the prevalence rates across different geographical regions. As in HSS 2010-11, all states recorded less than 1% prevalence among ANC clinic attendees during 2012-13 round. However 11 states recorded higher prevalence than the national average including the four low/moderate prevalence states of Punjab (0.37%), Delhi (0.40%), Gujarat (0.50%), and Chhattisgarh (0.51%). In terms of HIV prevalence, the three states having the highest ANC prevalence were from the north-eastern region of country with Nagaland recording the highest prevalence (0.88%) followed by Mizoram (0.68%) and Manipur (0.64%). HIV Prevalence higher than the national average was also recorded in the states of Andhra Pradesh (0.59%), Karnataka (0.53%), Maharashtra (0.40%) and Tamil Nadu (0.36%). Bihar (0.33%), Rajasthan (0.32%) and Odisha (0.31%) are states which recorded prevalence slightly lower than the national average. Four UTs (Puducherry, Dadra and Nagar Haveli, Chandigarh and Andaman & Nicobar Islands) recorded zero prevalence during the 13th round of HSS. Figure 6 shows the map of India where states are colour-coded according to four HIV prevalence categories.

Figure 5: HIV Prevalence (%) at ANC sites, India and States, 2012-13

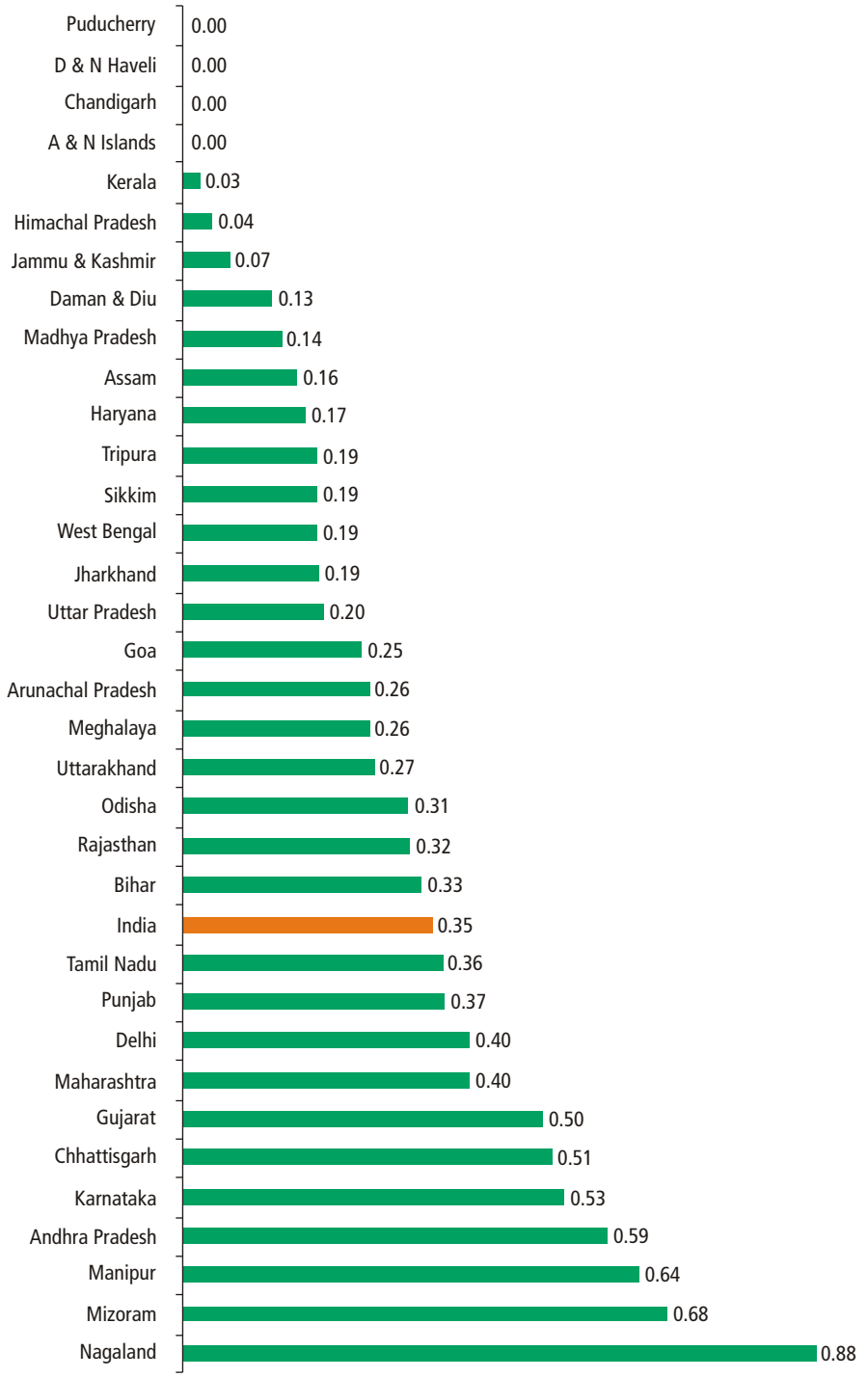
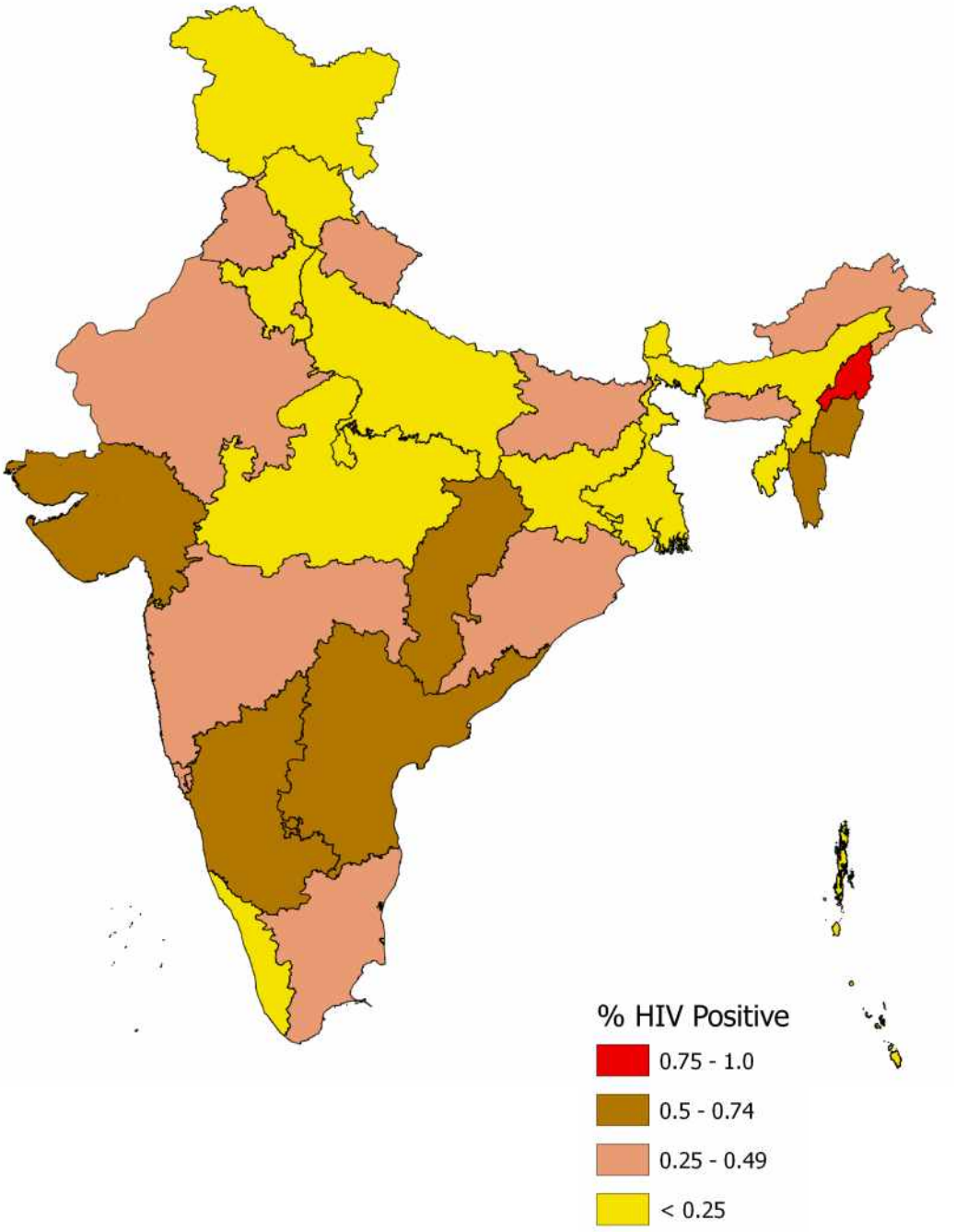


Figure 6: State-wise HIV Prevalence (%) among ANC Clinic attendees, HSS 2012-13



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.

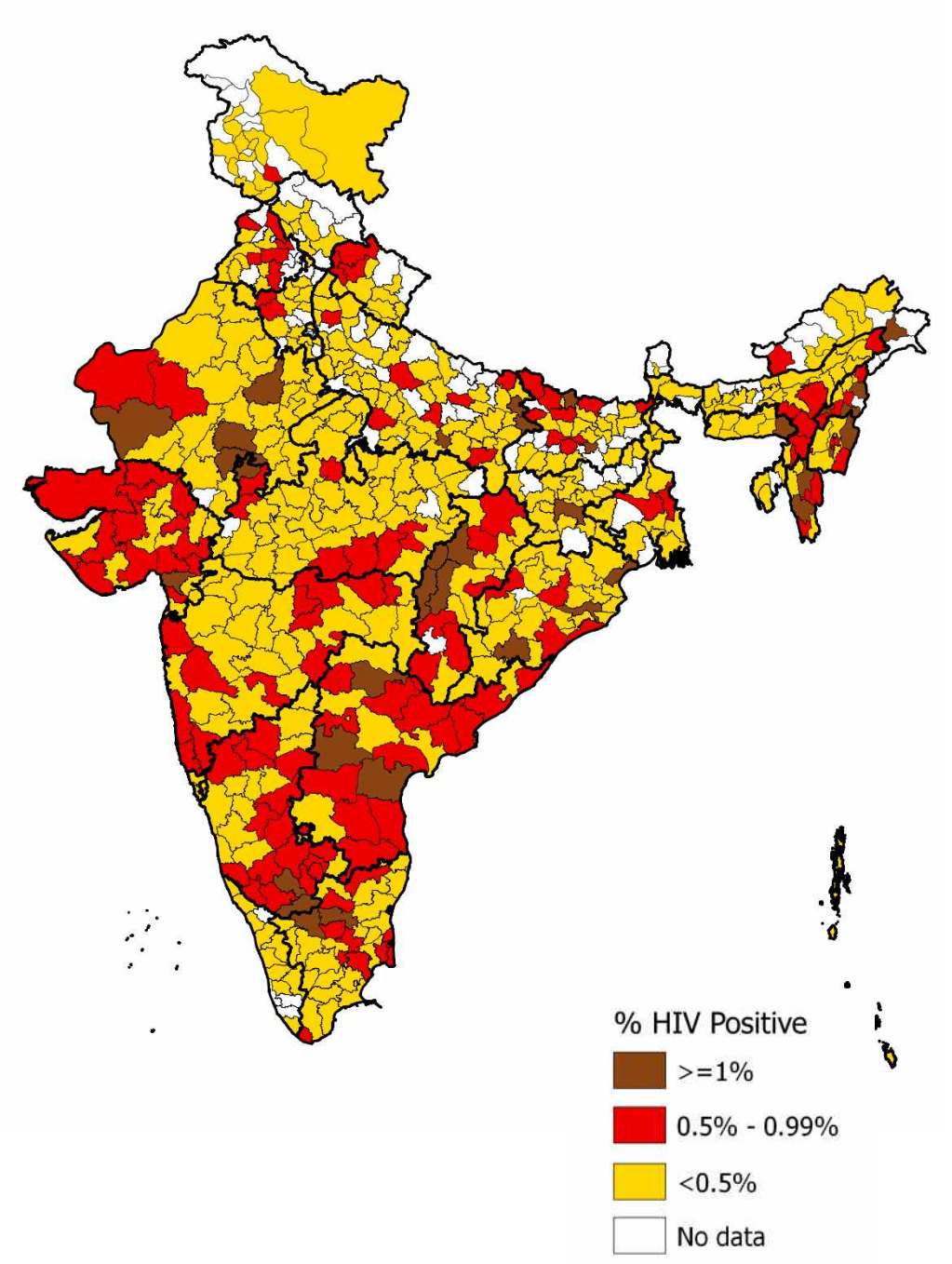
There were 80 sentinel sites, across 19 states, which recorded a prevalence of 1% or more during the 13th round of HSS (Table 3). Of them, 51 (64%) were from the known high prevalent southern and north-eastern states of Andhra Pradesh (16), Karnataka (9), Maharashtra (9), Tamil Nadu (9), Manipur (4), Nagaland (4), and Mizoram (2). However, among the low/moderate prevalence states, Bihar, Chhattisgarh, Gujarat, Odisha, Rajasthan, and Uttar Pradesh had 3 or more sites each with HIV Prevalence of 1% or more among ANC attendees in 2012-13. In Bihar and Uttar Pradesh, the high prevalence sites were concentrated in northern Bihar and eastern part of Uttar Pradesh. Sites with prevalence of 1% or more have also been observed in Jharkhand (1), West Bengal (1), Arunachal Pradesh (1), Meghalaya (1), Madhya Pradesh (1) and Uttarakhand (1). Of the 80 sentinel sites which recorded a prevalence of 1% or more, 12 sites showed prevalence of 2% or more.

Table 3: State-wise number of high prevalence ANC Surveillance sites in HSS 2012-13

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	16	1
Arunachal Pradesh	1	-
Bihar	3	-
Chhattisgarh	4	1
Gujarat	3	1
Jharkhand	1	-
Karnataka	9	2
Madhya Pradesh	1	-
Maharashtra	9	-
Manipur	4	1
Meghalaya	1	-
Mizoram	2	1
Nagaland	4	2
Odisha	4	-
Rajasthan	4	1
Tamil Nadu	9	2
Uttar Pradesh	3	-
Uttarakhand	1	-
West Bengal	1	-
Total	**80**	**12**

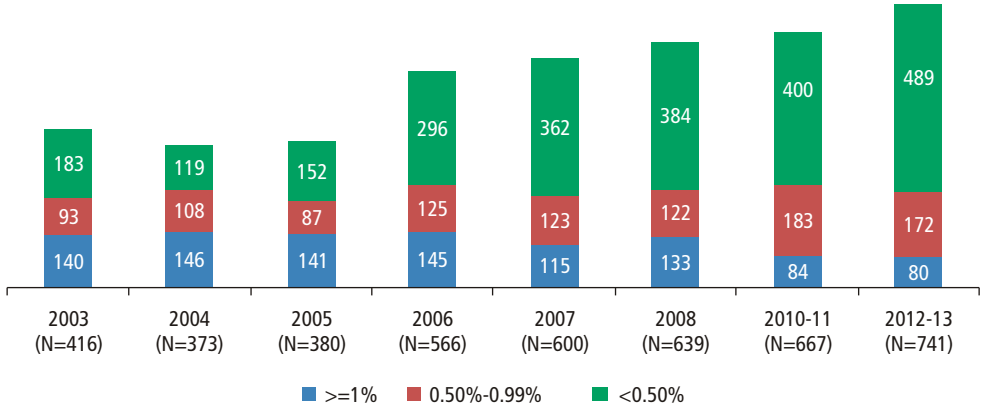
There were also 172 sites across 155 districts in 25 states that showed moderate HIV prevalence of 0.50-0.99% during HSS 2012-13. Figure 7 shows the map of India where districts are colour-coded into low (<0.5%), moderate (0.50-0.99%) and high (> 1%) based on HIV prevalence recorded among ANC clinic attendees in HSS 2012-13. Overall, 37 districts in the country recorded a prevalence of 1% or more, 15 of them were form the southern and Nnorth-eastern states of Andhra Pradesh (3), Karnataka (2), Manipur (2), Mizoram (2),Nagaland (3) and Tamil Nadu (3).

Figure 7: District-wise HIV Prevalence (%) among ANC clinic attendees, HSS 2012-13, India



There has also been a decline in the number of sites showing a prevalence of 1% or more during the years 2003-13, despite a continuous increase in number of surveillance sites as well as establishment of high prevalence sites in traditionally high prevalence states. 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 and 128 (91%) of them were in the 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,and 121 (81%) of these high prevalence sites were in six high prevalence states. In contrast, during the 13th round of surveillance in 2012-13, only 11% of the total 741 valid sites recorded a prevalence of 1% or more, while 51 (64%) of them were from the six high prevalence states. Figure 8 depicts the changing pattern of ANC HSS sites across different HIV prevalence categories in the country.

Figure 8: Year wise distribution of sites in different HIV prevalence (%) categories among ANC clinic attendees, HSS 2003-13



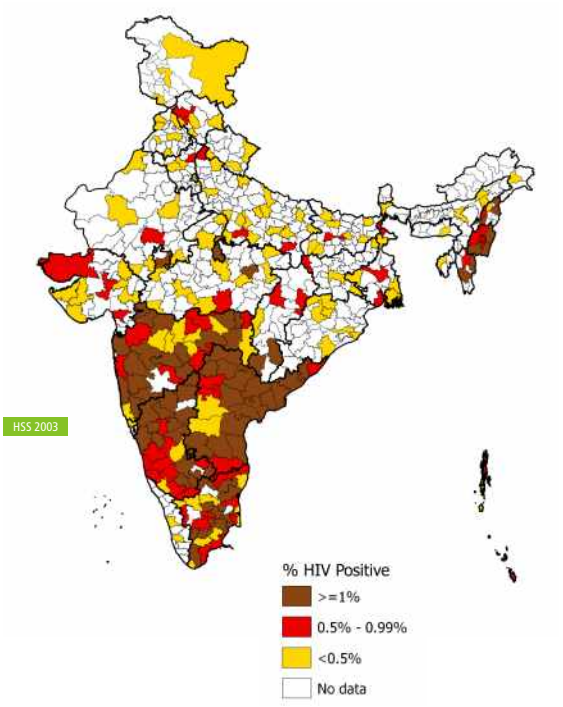
The changes in prevalence category at the site level, discussed above, is also evident from Figure 9 which highlights not only the declining number of districts with more than 1% prevalence in country, but also the emerging pockets in states having a low/moderate epidemic.

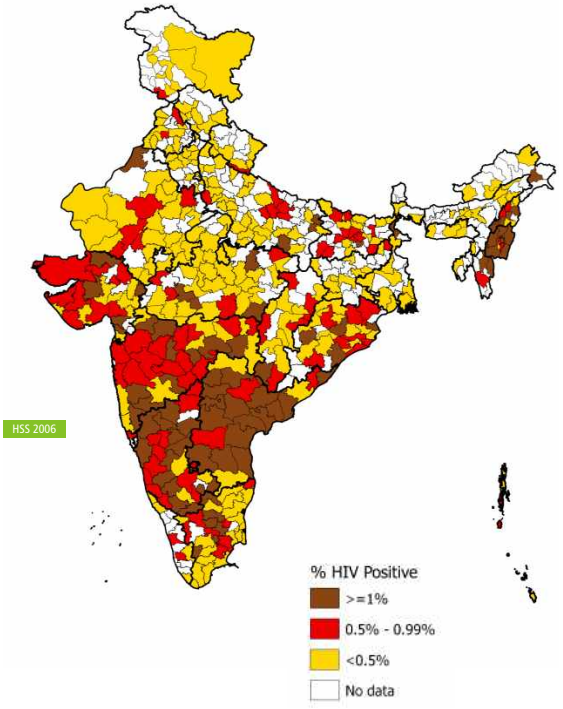
Table 4 shows districts with at least one ANC site showing HIV prevalence of 1% or more among ANC clinic attendees in 3 out of 6 rounds of HSS, i.e from HSS 2005 to HSS 2012-13. During this period, there were 312 sites across 214 districts which recorded a prevalence of 1% or more at least once. However, there were 109 sites in 83 districts across 11 states where 1% or more HIV prevalence among ANC clients was recorded for at least three rounds of ANC surveillance since 2005. While most of them (100) are in high prevalence states from the southern and north-east regions, there are other states which have traditionally not been considered as high prevalent, that have districts in this category, e.g. Bihar (Patna), Gujarat (Mehsana & Surat), Mizoram (Aizwal & Champhai), Odisha (Ganjam, Anugul & Cuttack), and West Bengal (Kolkata). These pockets with a mature epidemic require sustained high-intensity prevention interventions.

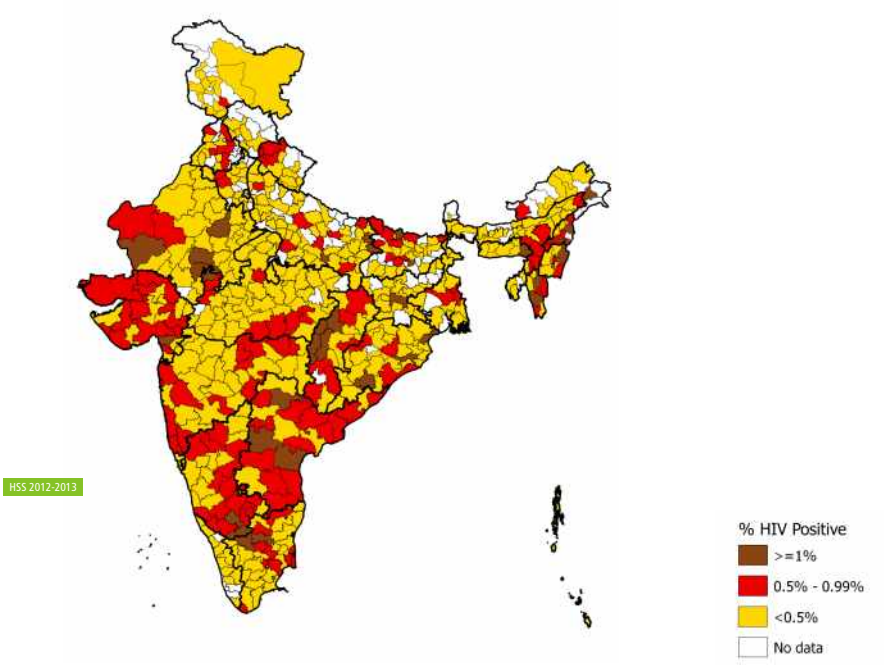
Table 4: State-wise districts with ANC sites showing 1% or more HIV prevalence in at least 3 out of last 6 rounds of HSS (HSS 2005 to HSS 2012-13)

State	Districts with ANC sites showing 1% or more HIV prevalence in at least 3 out of last 6 rounds of HSS (HSS 2005 to HSS 2012-13)
Andhra Pradesh	21-Adilabad, Anantapur, Chittoor, Cuddapah, East Godavari, Guntur, Hyderabad, Karimnagar, Khammam, Krishna, Kurnool, Mahbubnagar, Medak, Nalgonda, Nellore, Nizamabad, Prakasam, Visakhapatnam, Vizianagram, Warangal, West Godavari
Bihar	1-Patna
Gujarat	2-Mehsana, Surat
Karnataka	19-Bagalkot, Bangalore, Belgaum, Bellary, Bijapur, Chamrajnagar, Chikmagalur, Davangere, Dharwad, Gulbarga, Hassan, Kodagu, Kolar, Koppal, Mandya, Mysore, Ramanagram, Shimoga, Tumkur
Maharashtra	17-Mumbai, Mumbai (Suburban), Ahmadnagar, Amravati, Bhandara, Chandrapur, Dhule, Jalgaon, Kolhapur, Latur, Nanded, Osmanabad, Sangli, Satara, Solapur, Thane, Yavatmal
Manipur	5-Chandel, Churachandpur, Imphal East, Imphal West, Ukhrul
Mizoram	2-Aizawl, Champai
Nagaland	5-Dimapur, Kohima, Phek, Tuensang, Zunheboto
Odisha	3-Anugul, Cutttack, Ganjam
Tamil Nadu	7-Coimbatore, Erode, Karur, Namakkal, Perambalur, Salem, Tiruchirapalli
West Bengal	1-Kolkata

Figure 9: District wise HIV prevalence (%) among ANC clinic attendees, HSS 2003, 2006 and 2012-13







6. HIV Trends in General Population

At the national level as well as in the traditionally high prevalence states, the HIV trend continued to decline among ANC clinic attendees. A declining trend was also noted in the low prevalence states of Goa, Kerala, Madhya Pradesh and West Bengal. However, some low prevalence states in west, north and east India have demonstrated a stable to rising trend. A rising trend was observed in the moderate/low prevalence states of Chhattisgarh, Delhi, Gujarat, Jharkhand, Odisha and Punjab. A rising trend was also observed among some very low prevalence state like Assam, Haryana, Uttar Pradesh and Uttarakhand. A long term stable trend was noted in the states of Bihar, Himachal Pradesh and Rajasthan.(Figures 10 to 15)

Figure 10: Region wise trends in ANC HIV Prevalence[4]

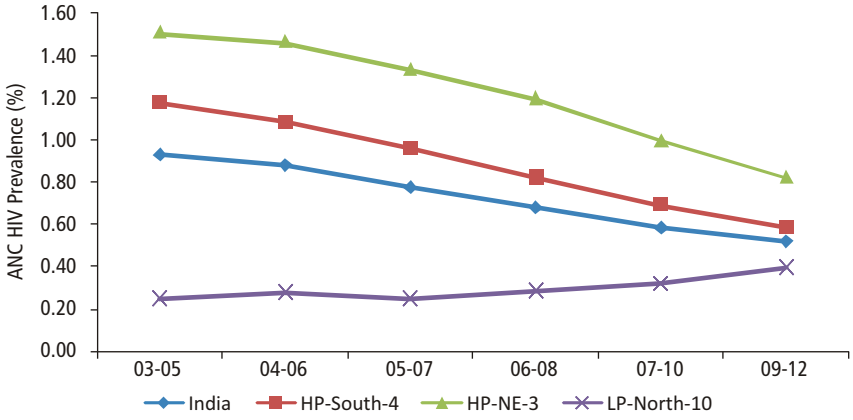
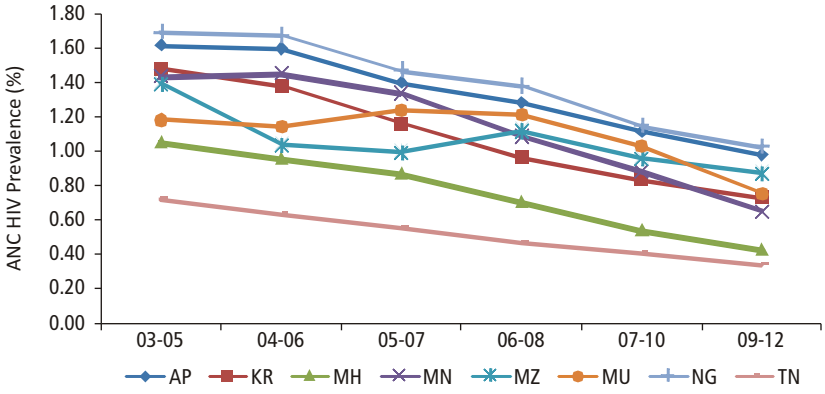


Figure 11: State wise trends in ANC HIV Prevalence based on consistent sites[5]



[4] 3-yr moving averages based on consistent sites; India – 385; HP-South-4 (Andhra Pradesh, Tamil Nadu, Karnataka, Maharashtra) – 233, HP-NE-3 (Manipur, Nagaland, Mizoram) – 31, LP-North-10 (Assam, Chhattisgarh, Delhi, Gujarat, Haryana, Odisha, Jharkhand, Punjab, Uttarakhand, Uttar Pradesh) – 60

[5] 3-yr moving averages based on consistent sites; AP (Andhra Pradesh)-44; KR (Karnataka)-54; MH (Maharashtra excluding Mumbai)-66 (2003); MN (Manipur)-14 (2003); MZ (Mizoram)-4 (2003); MU (Mumbai)-6 (2003); NG (Nagaland)-13 (2003); TN (Tamil Nadu)-63 (2003)

Figure 12: State wise trends in ANC HIV Prevalence based on consistent sites[6]

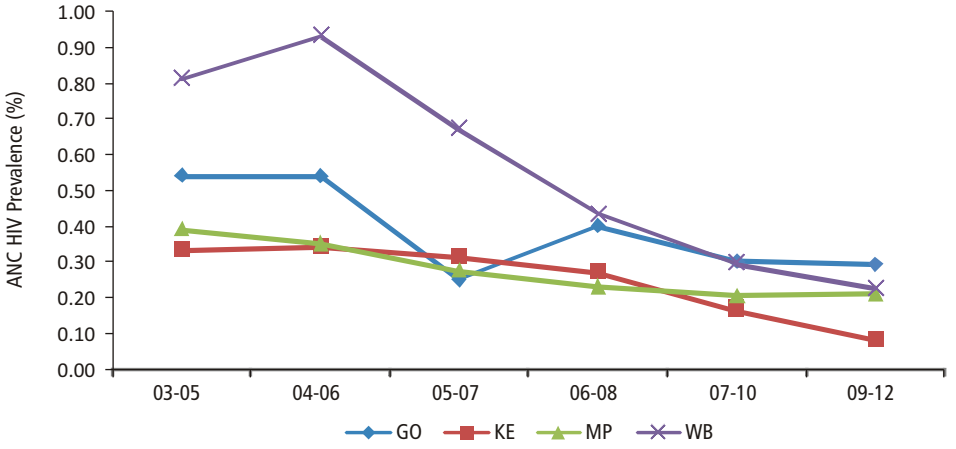
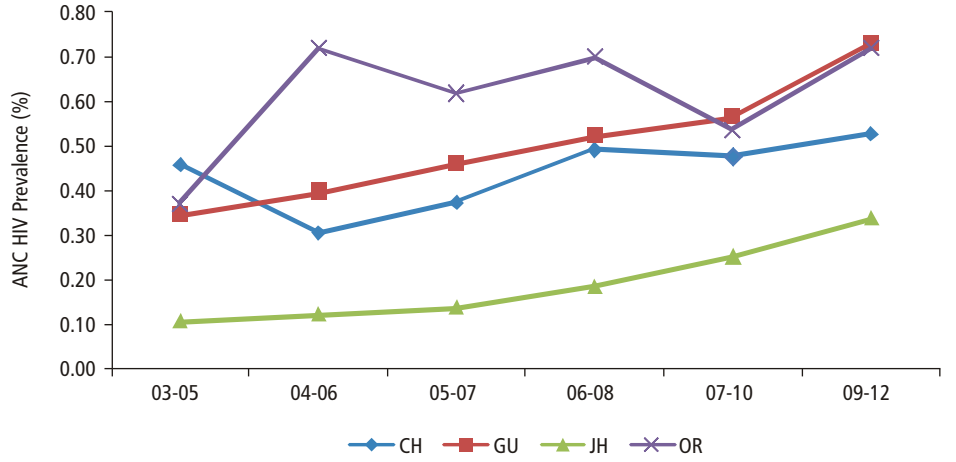


Figure 13: State wise trends in ANC HIV Prevalence based on consistent sites[7]



[6] 3-yr moving averages based on consistent sites; GO (Goa)-2; KE (Kerala)-4; MP (Madhya Pradesh)-13; WB (West Bengal)-7

[7] 3-yr moving averages based on consistent sites; CH (Chhattisgarh)-5, GU (Gujarat)-8, JH (Jharkhand)-5, OR (Odisha)-5, RJ (Rajasthan)-5

Figure 14: State wise trends in ANC HIV Prevalence based on consistent sites[8]

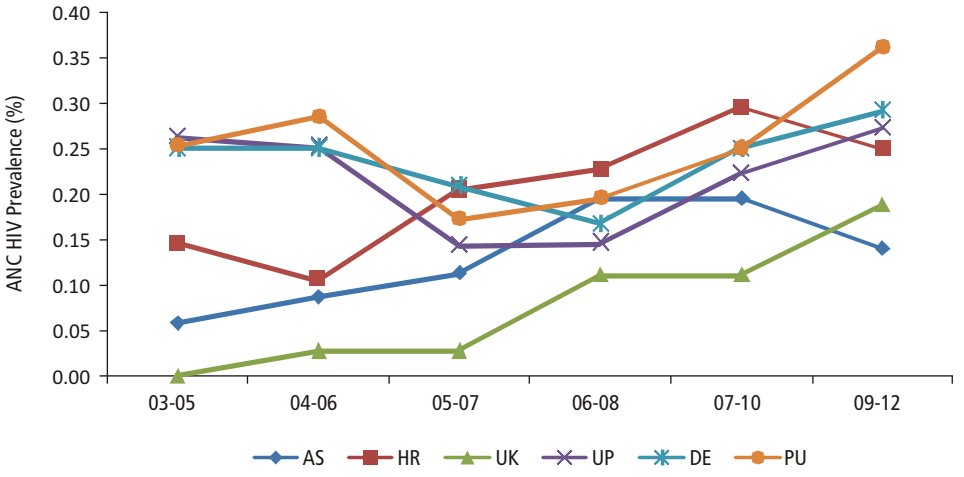
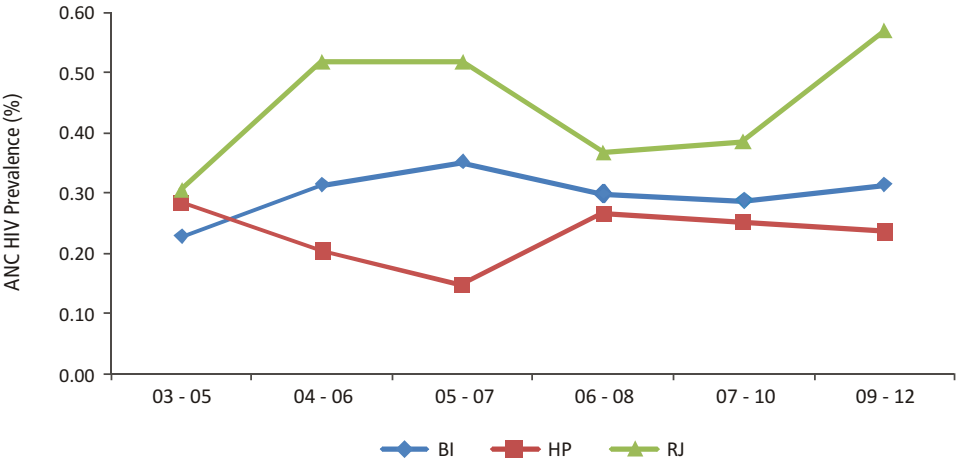


Figure 15: State wise trends in ANC HIV Prevalence based on consistent sites[9]



[8] 3-yr moving averages based on consistent sites; AS (Assam)-3; HR(Haryana)-4, UK (Uttarakhand)-3, UP (Uttar Pradesh)- 17; DE (Delhi)-4, PU (Punjab)-6

[9] 3-yr moving averages based on consistent sites; BI(Bihar)-7; HP(Himachal Pradesh)-6, RJ (Rajasthan)-5

7. Conclusion

HSS 2012-13 was implemented in 556 districts of country in 34 States and UTs. In 2012-13, all the states recorded an overall prevalence of less than 1% among ANC clinic attendees, considered as a proxy for general population, with a national average of 0.35% (90% CI: 0.33%-0.37%). Also, long term declining trend for the country as well as in the known high prevalence states has been evident during this round also. It is worth noting that, despite significant increase in the number of surveillance sites, the total number of surveillance sites recording HIV prevalence of 1% or more has consistently been on a decline. Only 80 sites (11% of total 741 valid sites) showed a prevalence of 1% or more during HSS 2012-13, significantly lower than the 133 sites (21% of total 639 valid sites) in 2008-09, 145 sites (26% of 566 valid sites)in 2006 and 140 sites (36% of total 416 valid sites) in 2003. All these facts corroborate the impact of Evidence based, Comprehensive, Integrated, Intense and Sustained responses to HIV epidemic in country.

However, the challenges remain. While there been a long term significant decline in all traditionally high prevalence states, Nagaland and Mizoram have shown a comparatively high overall prevalence at a state level on a year to year basic (2010-11 and 2012-13). Besides, there are 100 sites in states of Andhra Pradesh, Karnataka, Maharashtra, Manipur, Nagaland and Tamil Nadu that recorded HIV prevalence of 1% or more in at least three rounds of the last six rounds of HSS. This point to the fact that the Department needs to sustain its interventions in these traditionally high prevalence states to consolidate the gains made.

The current trend of HIV epidemic and responses in India include traditionally low/moderate prevalence states. A long term increasing trend has been again highlighted during 13th round in states of Assam, Chhattisgarh, Delhi, Gujarat, Haryana, Jharkhand, Odisha, Punjab, Uttarakhand and Uttar Pradesh. Bihar has also recorded a higher prevalence on a year to year basis (2010-11 and 2012-13). All of these states have been appropriately given high priority in NACP-IV. Further, just as the transmission dynamics and patterns of vulnerability in high prevalence states were understood and addressed, thereby controlling the rise of HIV in these states, the programme is giving equal importance to understand the transmission dynamics and patterns of vulnerability (like migration) in these states for further customization of response to the epidemic in these states.

For the past 15 years, HIV Sentinel Surveillance has continued to provide evidence on the levels and trends of HIV in India. With each round of HSS, the pieces of the puzzle come closer together, providing a clearer picture of the HIV epidemic in the country. HSS, along with other key data from surveys and programs has facilitated vital program prioritization exercises such as district re-categorization, estimations and projections, including incidence and prevalence. Armed with enhanced understanding of the epidemic, Department of AIDS Control has targeted its response to districts demonstrating vulnerability to HIV transmission and spread. The Department of AIDS Control is committed to using data to continually improve and evolve its response to India's HIV epidemic, till the epidemic is fully controlled and reversed.

Annexes

Annex 1: State-wise number of HSS sites, 2003-12

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	2003	2006	2010-11	2012-13	2003	2006	2010-11	2003	2006	2010-11	2012-13	2003	2006	2010-11
A & N Islands	3	3	3	3	3	3	3	3	1	1	1	4	3	4	4	3	2	1
Andhra Pr.	23	23	23	23	23	23	23	23	11	12	22	43	44	63	64	15	19	31
Arunachal Pr.	5	10	11	11	2	5	6	8	3	7	7	3	5	6	8	3	9	12
Assam	9	23	25	24	4	15	19	24	5	16	19	7	15	20	25	7	23	30
Bihar	11	36	34	27	7	23	23	27	8	28	25	7	23	23	29	10	38	38
Chandigarh	1	1	1	1	1	1	1	1	1	1	1	3	1	1	1	4	7	7
Chhattisgarh	8	16	17	16	5	15	16	16	3	6	6	8	19	18	18	3	10	9
D & N Haveli	1	1	1	1	1	1	1	1	-	-		2	1	1	1	0	0	0
Daman & Diu	2	2	2	2	2	2	2	2	-	-	-	4	2	2	2	0	0	0
Delhi	8	9	9	5	4	5	5	5	6	8	8	4	5	5	5	7	16	15
Goa	2	2	2	2	2	1	2	2	2	2	2	4	2	3	3	3	3	4
Gujarat	14	25	26	26	10	25	25	26	8	11	15	16	25	25	28	8	16	28
Haryana	9	19	20	15	4	12	12	15	5	12	14	7	12	12	16	5	18	28
Himachal Pr.	12	12	11	7	7	8	7	7	5	6	7	14	10	8	8	6	10	13
J & K	3	14	14	14	3	14	14	14	2	6	5	5	16	15	15	3	9	9
Jharkhand	8	17	19	19	7	12	12	19	3	11	14	12	16	15	21	3	19	26
Karnataka	28	28	30	30	28	28	30	30	7	7	24	54	54	60	62	10	14	38
Kerala	8	14	14	10	4	6	10	10	4	14	14	7	6	10	10	7	19	23

Cont...

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	2003	2006	2010-11	2012-13	2003	2006	2010-11	2003	2006	2010-11	2012-13	2003	2006	2010-11
Lakshadweep	1	1	-	-	1	1	-	-	1	1	-	1	2	-	-	1	1	0
Madhya Pr.	23	45	44	47	15	36	37	47	10	15	15	26	36	37	47	10	16	20
Maharashtra	35	35	35	35	35	35	35	35	11	15	20	70	73	75	75	15	29	38
Manipur	9	9	9	9	9	9	9	9	4	5	9	14	14	14	14	7	10	18
Meghalaya	2	6	6	7	2	6	6	7	1	2	2	2	7	7	8	3	4	4
Mizoram	4	8	8	8	3	3	8	8	2	8	5	5	4	9	9	4	12	9
Nagaland	8	11	11	11	8	11	11	11	6	8	8	12	19	19	13	7	10	12
Odisha	9	30	30	30	5	23	30	30	7	18	20	5	23	32	32	8	22	31
Puducherry	2	2	2	2	2	2	2	2	2	2	2	4	**2**	2	2	3	8	8
Punjab	8	18	19	13	6	11	13	13	3	9	12	10	11	13	13	4	14	23
Rajasthan	12	32	31	33	6	25	28	33	7	21	17	12	25	28	35	8	23	20
Sikkim	1	3	3	3	1	2	2	3	1	2	2	3	**3**	3	4	1	3	4
Tamil Nadu	30	30	31	32	29	30	31	32	13	18	27	53	64	68	72	15	26	53
Tripura	2	4	4	5	1	1	1	3	2	4	4	1	**2**	2	4	2	8	12
Uttar Pradesh	31	69	69	55	19	51	55	55	17	31	35	30	62	65	65	19	37	50
Uttarakhand	7	11	12	12	3	7	7	12	4	7	9	6	9	9	15	4	7	11
West Bengal	13	19	19	18	9	12	18	18	8	14	16	18	13	22	22	15	32	38
India	**352**	**588**	**595**	**556**	**271**	**464**	**504**	**551**	**173**	**328**	**387**	**476**	**628**	**696**	**750**	**223**	**494**	**663**

Annex 2: Bilingual Data form for surveillance at ANC sites, HSS 2012-13

HSS 2012-13: DATA FORM FOR ANTENATAL CLINIC ATTENDEES (ANC)

एच.एस.एस. 2012–13 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

सेन्टिनेल साइट की जानकारी यहां लिखें/छापें/चिपकायें)

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) ☐☐

2. Literacy Status / साक्षरता स्थिति

1. Illiterate / निरक्षर **2.** Literate and till 5th standard / साक्षर और पाँचवी तक **3.** 6th to 10th standard / छठी से दसवीं तक

4. 11th to Graduation / ग्यारहवीं 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 जाँच केन्द्र में रेफरल का स्रोत

1. Self Referral / स्वतः 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.** ICTC / ART Centre / आई.सी.टी.सी/ए.आर.टी केन्द्र

5. Current Place of Residence / वर्तमान निवास स्थान

1. Urban (Municipal Corporation / Council /Cantonment) / शहरी (नगरपालिका/निगम/छावनी) **2.** Rural / ग्रामीण

6. Duration of Stay at Current Place of Residence / वर्तमान निवास स्थान में ठहरने की अवधि ☐☐ years / वर्ष ☐☐ 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 उद्योग/छोटी दुकान **6.** Large Business/Self employed/विस्तृत उद्योग/स्वरोजगार

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, ठेलेवाले, रिक्शेवाले)

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 उद्योग/छोटी दुकान **6.** Large Business/Self employed/विस्तृत उद्योग/स्वरोजगार

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, ठेलेवाले रिक्शेवाले)

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 (अविवाहिता/विधवा/तलाकशुदा/अलग महिलाओं के लिय)

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 है?

1. Yes / हां **2.** No / नहीं **99.** Not Applicable (For Never married/Widows/Divorced/Separated) / लागू नहीं होता (अविवाहिता/विधवा/तलाकशुदा/अलग महिलाओं के लिय)

Signature / हस्ताक्षर : _____ **Signature / हस्ताक्षर** : _____

Name / नाम : _____ **Name / नाम** : _____

(Person who filled the form/ व्यक्ति जिसके द्वारा फार्म भरा गया) (Sentinel site in-charge/ सेन्टिनेल साइट के प्रभारी)

Annex 3: SACS's checklist for HSS 2012-13

S.N	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 2012-13			
2. Finalization of ANC and STD 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/STD 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/STD sites				
4.1	Submission of contact details of lab personnel to NACO			
4.2	Submission of details of ELISA/RAPID tests done at ANC/STD 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/STD surveillance site personnel				
5.1	Finalisation 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			
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 NRHM officials & district authorities**			
6.1	Letter to key officials from NRHM at state and district level on HSS and support required			

Cont...

S.N	Activity	To be completed by	Status	Remarks
6.2	Sensitization of state level NRHM 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 NRHM/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 Bi-lingual Data Forms to Local Language			
8.2	Printing of Bi-lingual Data Forms			
8.3	Bi-lingual 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 2012-13 Implementation				
9.1	Data of Initiation of HSS 2012-13 at ANC/STD sites			

Annex 4: Pre Surveillance Sentinel Site Evaluation Form, HSS 2012-13

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

HIV Sentinel Surveillance Round 2012-13
Pre-Surveillance Sentinel Site Evaluation (ANC & STD 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/STD serices 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?	◯ YES ◯ NO	◯ YES ◯ NO	◯ YES ◯ NO
2. Is there a chance of transfer/ leave/ leaving the job in next 6 months?	◯ YES ◯ NO	◯ YES ◯ NO	◯ YES ◯ NO
3. Did the staff participate in any previous rounds of surveillance?	◯ YES ◯ NO	◯ YES ◯ NO	◯ YES ◯ NO
4. Is the staff trained in Sentinel Surveillance earlier?	◯ YES ◯ NO	◯ YES ◯ NO	◯ YES ◯ 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.)

Annex 5: State-wise HIV prevalence among ANC clinic attendees, HSS 2003-2013

State	2003	2004	2005	2006	2007	2008-09	2010-11	2012-13
A & N Islands	0.45	0.00	0.00	0.17	0.25	0.06	0.13	0.00
Andhra Pradesh	1.45	1.70	1.67	1.41	1.07	1.22	0.76	0.59
Arunachal Pr.	0.00	0.20	0.46	0.27	0.00	0.46	0.21	0.26
Assam	0.00	0.14	0.00	0.04	0.11	0.13	0.09	0.16
Bihar	0.11	0.22	0.38	0.36	0.34	0.30	0.17	0.33
Chandigarh	0.22	0.50	0.00	0.25	0.25	0.25	0.00	0.00
Chhattisgarh	0.76	0.00	0.32	0.31	0.29	0.41	0.43	0.51
D & N Haveli	0.13	0.00	0.25	0.00	0.50	0.00	0.00	0.00
Daman & Diu	0.27	0.38	0.13	0.00	0.13	0.38	0.13	0.13
Delhi	0.13	0.31	0.31	0.10	0.20	0.20	0.30	0.40
Goa	0.48	1.13	0.00	0.50	0.18	0.68	0.33	0.25
Gujarat	0.38	0.19	0.38	0.55	0.34	0.44	0.46	0.50
Haryana	0.27	0.00	0.19	0.17	0.16	0.15	0.19	0.17
Himachal Pradesh	0.25	0.25	0.22	0.06	0.13	0.51	0.04	0.04
Jammu & Kashmir	0.00	0.08	0.00	0.04	0.05	0.00	0.06	0.07
Jharkhand	0.08	0.05	0.14	0.13	0.13	0.38	0.45	0.19
Karnataka	1.43	1.52	1.49	1.12	0.86	0.89	0.69	0.53
Kerala	0.09	0.42	0.32	0.21	0.46	0.21	0.13	0.03
Madhya Pradesh	0.42	0.38	0.27	0.26	0.25	0.26	0.32	0.14
Maharashtra	1.15	0.97	1.07	0.87	0.76	0.61	0.42	0.40
Manipur	1.34	1.66	1.30	1.39	1.31	0.54	0.78	0.64
Meghalaya	0.35	0.00	0.00	0.09	0.00	0.04	0.05	0.26
Mizoram	1.70	1.50	0.81	0.94	0.85	0.72	0.40	0.68
Nagaland	1.69	1.85	1.97	1.36	1.10	1.14	0.66	0.88
Odisha	0.00	0.50	0.60	0.55	0.23	0.73	0.43	0.31
Puducherry	0.13	0.25	0.25	0.25	0.00	0.25	0.13	0.00
Punjab	0.13	0.44	0.25	0.20	0.12	0.31	0.26	0.37
Rajasthan	0.15	0.23	0.50	0.29	0.19	0.19	0.38	0.32
Sikkim	0.21	0.00	0.25	0.10	0.09	0.00	0.09	0.19
Tamil Nadu	0.83	0.81	0.54	0.54	0.58	0.35	0.38	0.36
Tripura	0.00	0.25	0.00	0.42	0.25	0.00	0.00	0.19
Uttar Pradesh	0.22	0.44	0.1	0.25	0.08	0.18	0.21	0.20
Uttarakhand	0.06	0.00	0.00	0.11	0.06	0.22	0.25	0.27
West Bengal	0.46	0.43	0.89	0.38	0.40	0.17	0.13	0.19
India	**0.80**	**0.95**	**0.90**	**0.60**	**0.49**	**0.49**	**0.40**	**0.35**

Note:- (1) Based on valid sites (75% of target achieved) (2) No HSS site in Lakshadweep during HSS 2010-11 and 2012-13 (3) All figures in percentage (4) Figures from HSS 2012-13 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) sites, 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	-	-	-	-
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	2.72	1.75	3.71	-	-	-	-
India	0.00	1.60	3.61	2.17	0.99	2.37	2.87	1.57	2.59	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

NOTES

NOTES

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