HIV

SENTINEL SURVEILLANCE (ANC)

Karnataka State Report

2014-15

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INSTITUTE OF EPIDEMIOLOGY
Chennai

NATIONAL
AIDS CONTROL ORGANISATION
New Delhi

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Foreword

HIV Sentinel surveillance among ANC attendees is one of the most important national level activities, as it helps the programme managers in framing health policies towards controlling HIV infection in the state and the country as well. The objectives of HIV sentinel surveillance are to understand the trends, assess spread and distribution of HIV infection among geographical areas across the state. In order to have uniform geographical coverage, the number of sentinel sites in the state has been increased over a period of years by keeping at least one site in each district.

The National Institute of Epidemiology, Chennai, one of the Regional Institutes for 8 southern states, is involved in the HIV surveillance activities since 2006. This report is prepared based on the data collected during the 14th round of surveillance, in conjunction with the post years data to analyze the trend and to have an insight of epidemiological factors. I hope this report will serve as a very useful tool for the policy makers, scholars, researchers and other stakeholders in formulating guidelines in controlling HIV and enhancing their knowledge of HIV in their state.

I take this opportunity to thank Dr. S. Venkatesh, Deputy Director General, NACO and Dr. Pradeep Kumar, Consultant (surveillance) & his team for entrusting this activity to NIE and also for providing technical support in implementing the surveillance. I also wish to thank the Project Director and nodal officer of State AIDS Control Society for their help in completing the surveillance activities in a timely manner. I express my gratitude to all the State Referral Laboratories, National Referral Laboratories, State Surveillance Team members, Sentinel sites personnel and other National and International partners who helped us in completing the surveillance successfully.

Dr. Manoj V Murhekar

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Project Director

Karnataka State AIDS Prevention Society

Preface

Karnataka was considered one of the HIV high prevalent state in India. HIV infection was first detected in Karnataka during the year 1988. (Saudatti, Belgaum) and first AIDS case was also reported during the same year. Since then Karnataka is actively involved in reducing the HIV infection in the same.

The nationwide HIV Sentinel Surveillance (HSS) programme among antenatal clinic attendees (ANC) in India provides essential information on the dynamies of the HIV epidemic and helps to monitor trends and foresee the type of inputs needed to strengthen the prevention and control activities for different population groups and geographical regions. Karnataka State AIDS prevention Society established under NACO has been collaborated with Regional Institute-NIE in the efforts of strengthening HIV/AIDS surveillance in Karnataka. The surveillance activities for all targeted groups have been scaled up in a phased manner and the network of sentinel sites has been expanded from a couple of sites in 2014-15.

The overall HIV Prevalence among ANC population in 2014-15 continues to portray the concentrated epidemic nature in Karnataka Analysis of consistent sites shows that there was a downward trend of HIV prevalence among general population. Though the trend of HIV was declining in the state, the higher HIV prevalence among general population was persisting in certain districts of Karnataka.

I hope, the information provided in this report will be helpful to policy makers and stakeholders to focus their fight against the HIV/AIDS in right direction.

I thank all the sentinel sites, testing labs, SST Members, SACS staff, NIE and NACO who has contributed for this activity and also thank our participants who have given their serum samples for this surveillance.

I am confident that this report will help in shaping our various programmes and planning for appropriate strategy towards “Zero” HIV prevalence.

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CHAPTER 1:

Introduction

Acquired immune deficiency syndrome or acquired immuno deficiency syndrome (AIDS) is a disease of the human immune system caused by the human immunodeficiency virus (HIV). This condition progressively reduces the effectiveness of the immune system and leaves individuals susceptible to opportunistic infections. The first HIV infection was reported in the year 1981 in the United States of America. Afterwards the epidemic spread rapidly throughout the globe.

In India it was in 1986, the first HIV infection reported from Chennai, Tamil Nadu. In the last two decades the awful disease spread throughout the country.

Surveillance is a vital component of any disease control programme. The purpose of surveillance is to actually look for evidence of disease risk, to predict the pattern and to plan appropriate action for control and prevention. Providing meaningful insights for action at policy, strategy, planning, or implementation levels at the appropriate time is the key objective of surveillance. The HIV epidemic in India is concentrated, with high prevalence among high-risk groups, moderate prevalence among bridge populations, and low prevalence among general population. Unprotected sex with female sex workers (FSW), injecting drug users (IDU), and unprotected anal sex between men are the three primary routes of HIV transmission in India. HIV sentinel surveillance measures the prevalence of HIV in a specific risk group in a specific region at a specific point of time. The HIV sentinel surveillance system in India is based on the HIV transmission dynamics mentioned above and monitors the HIV epidemic patterns among the following groups:

1. **High-risk groups**
    a. Female sex workers
    b. Men who have sex with men (MSM)
    c. Injecting drug users
    d. People who are TG (transgender)/eunuchs
2. **Bridge populations**
    a. Single male migrants
    b. Long-distance Truckers (LDTs)
    c. People attending STI or gynaecology clinics (currently discontinued)

3. General population

a. Pregnant women attending the ANC clinics in urban and rural areas, and the ANC clinic attendees were considered proxy for general population. STI patients were considered proxy for people with high-risk behaviour (high-risk and bridge populations and their partners).

1.1. Objectives and Application of HIV Sentinel Surveillance

The key objectives of HIV sentinel surveillance in India are to:

1. Monitor trends in HIV prevalence over time.
2. Monitor the distribution and spread of HIV in different subgroups and geographical areas.
3. Identify emerging pockets of HIV epidemic in the country.
4. Applications of HIV sentinel surveillance data.
5. Estimate and project burden of HIV at state and national levels.
6. Support programme prioritization and resource allocation.
7. Assist evaluation of programme impact.
8. Provide evidence to advocacy efforts.

1.2. Evolution of HIV Sentinel Surveillance in India

HIV surveillance in India began in 1985 when the Indian Council of Medical Research (ICMR) initiated a surveillance activity among blood donors and patients with STIs. After the National AIDS Control Organisation (NACO) was established in 1992, sentinel surveillance for HIV in India was initiated in 1993-94 with 52 sentinel sites in selected cities. In 1998, NACO formalized annual sentinel surveillance for HIV infection in the country with 180 sentinel sites, of which 176 were valid.

The first major expansion of the surveillance network was in 2003. More than 200 rural antenatal care (ANC) sentinel sites were established at the community health centre (CHC) level in most of the districts in high-prevalence states as well as some districts in low-prevalence states in North India. However, half of these ANC rural sites, especially those in low prevalence states of North India, were discontinued in the next round because they could not achieve the required target sample size due to poor utilization rates. Another significant expansion in 2003 was the addition of 30 FSW sites. Overall, 354 districts had at least one HSS site in 2003. From 2003 and until 2005, the same sentinel sites continued with expansion to 83 FSW and 30 injecting drug user (IDU) sites.

The year 2006 could be considered the watershed year for HSS development in India. The goal was to have at least one sentinel site in every districts of India and new sentinel sites were added for all risk groups in that year. Key developments in 2006 included:

- Major expansion of STI and ANC urban sentinel sites in low-prevalence states of North India.
- Addition of rural ANC sites in high-prevalence states.
- Initiation of special ANC sites for 15-24-year-old pregnant women to monitor new infection.
- Expansion of sentinel sites among FSW, MSM and IDU.
- Initiation of sentinel sites among long-distance truckers (LDTs), single male migrants, and people who are transgenders (TG).
- Introduction of composite sites in HSS that facilitated establishment of sentinel sites in places where it had been difficult to do so, such as rural areas and places with fewer HRGs.

In year 2006, the scale of surveillance operations increased from 703 sites in high prevalence states in 2005 to 1,122 sites to cover the entire country. The surveillance was also expanded from being only clinic-based to also include Targeted Intervention (TIs)

Six leading regional public health institutions in the country were involved to expand and strengthen the surveillance network and implementation activities and follow up programmes. These regional institutes (RI) provided technical support, guidance, monitoring, and supervision for implementing HSS. Two more RIs were created in 2008. Supervisory structures were further strengthened with constitution of central and state surveillance teams, comprised of public health experts, epidemiologists, and microbiologists from several medical colleges and research institutions.

During the subsequent three rounds of HSS (2007, 2008-09, and 2010-11), the focus was on expansion of surveillance among high-risk and bridge populations.

Key strategic HSS implementation improvements in these rounds included:

1. Technical validation of new sentinel sites by regional institutes before inclusion in surveillance and dropping poorly performing sites.

2. Introduced the dried blood spot (DBS) method of sample collection from high-risk groups (HRGs) to overcome logistic problems at HRG sites.
3. Introduced informed consent at high-risk group sites to address ethical concerns.
4. Initiated random sampling methods of recruitment at HRG sites, taking advantage of the availability of updated line lists of HRGs at the TI projects.
5. Standardized training protocols across states with uniform session plans and materials, and adoption of a two-tier training plan with training-of-trainers (TOT) followed by training of site personnel.
6. Developed a four-tier supervisory structure: national-level central team; regional institutes; state surveillance teams; and State AIDS Control Society (SACS) teams.
7. Strengthened focus on supportive supervision and action-oriented monitoring.
8. Increased focus on quality of planning, training, implementation, supervision and feedback.
9. Decreased number of testing laboratories for ANC and STD samples, limiting them to high-performing laboratories with enzyme-linked immunosorbent assay (ELISA) facilities to ensure high-quality testing and close supervision.
10. Developed a new web-based data management system to enhance data quality and ensure real time monitoring of surveillance activities.
11. Initiated epidemiological investigation into unusual findings (sudden rise or decline in prevalence) to understand reasons and correct.
12. Conducted pre-surveillance sentinel site evaluation to assess preparedness of site for HSS and to obtain profile-related information.

Between 2008 and 2009, the annual frequency of HSS was shifted to biennial (once in two years). STI sites were gradually being discontinued in 2008-09 and 2010-11. The 13th round of HSS was implemented at 763 sentinel sites (750 ANC and 13 STI sites). Most of the STI sites from the 12th round of HSS were phased out during HSS 2014-15. For high-risk and bridge populations, National Integrated Biological and Behavioural Surveillance (IBBS) was conducted to strengthen surveillance among these groups so HSS 2014-15 did not include high-risk groups.

CHAPTER 2:

Methodology and Implementation

This chapter describes HSS methodology and the implementation mechanisms adopted during HSS 2014-15.

2.1. Methodology of HIV Sentinel Surveillance at ANC Sentinel Sites

HIV sentinel surveillance is defined as a system of monitoring the HIV epidemic among the specified population groups by collecting information on HIV from designated sites (sentinel sites) over years, through a uniform and consistent methodology that allows comparison of findings across place and time, to guide programme response. A sentinel site is a designated service point/facility where blood specimens and relevant information are collected from a fixed number of eligible individuals from a specified population group over a fixed period of time, periodically, for the purpose of monitoring the HIV epidemic. Under HIV sentinel surveillance (HSS), recruitment of respondents is conducted for three months at selected ANC sentinel sites. Because of the low HIV prevalence in India, the classical survey method of sample size calculation that gives a large sample size cannot feasibly be collected through facility-based surveillance on an annual basis. Hence, a sample size of 400 for surveillance among ANC attendees was approved by a consensus of experts. Eligible respondents are enrolled until the sample size of 400 is reached or until the end of the surveillance period, whichever is earlier.

The eligibility criteria for recruiting respondents at an ANC sentinel sites were:

1. Age 15-49 years

2. Pregnant woman attending the antenatal clinic for the first time during the current round of surveillance period. “Sampling method” refers to the approach adopted at the sentinel sites for recruiting eligible individuals into HSS. Consecutive sampling method is adopted in HSS in India for ANC clinic attendees. After the start of surveillance, all individuals attending the ANC sentinel site facility who are eligible for inclusion are recruited in the order they attend the clinic. This sampling method removes all chances of selection or exclusion based on individual preferences or other reasons, and hence reduces the selection bias. It is convenient, feasible, and easy to follow.

“Testing strategy” refers to the approach adopted for collecting and testing blood

specimens and handling the test results in HSS. In India, the unlinked anonymous testing strategy is used. Testing is conducted on a portion of blood specimen collected for routine diagnostic purposes (such as syphilis) after removing all personal identifiers. Neither the information collected in the data form nor the HIV test result from the blood specimen is ever linked to the individual from whom the information/ specimen is collected. Neither the personnel collecting the specimen nor the personnel testing the specimen are able to track the results back to the individual.

Hence, the personal identifiers such as name, address, outpatient registration number, etc. were not mentioned anywhere in the data form, blood specimen, or data form transportation or sample transportation sheets. Similarly, the HSS sample number or any mark indicating inclusion in HSS is not mentioned in the ANC register or patient/OPD card. The portion of the blood specimen with identifiers is used for reporting the results of the routine test for which it has been collected. The portion of the blood specimen without identifiers is sent for HIV testing under HSS.

"Testing protocol" refers to the number of HIV tests conducted on the blood specimen collected during HSS. A two-test protocol is adopted in HSS. The first test is of high sensitivity and second of high specificity and is confirmatory in nature. The second test is conducted only if the first is found to be positive. HIV testing under surveillance is for the purpose of ascertaining HIV levels and trends in a community and not for case diagnosis, which is why the two-test protocol is the global standard for surveillance.

The methodology of HSS at ANC sentinel sites is summarized in Table 1

Table 1: Methodology of HIV Sentinel Surveillance at ANC Sentinel Sites

Sentinel site	Antenatal clinic
Sample size	400
Duration	3 months
Frequency	Once in 2 years (biennial)
Sampling method	Consecutive sampling
Eligibility	Pregnant women ages 15-49 years attending ANC clinic for the first time during the current round
Testing strategy	Unlinked anonymous testing
Blood specimen	Serum collected through venous blood specimen
Testing protocol	Two-test

2.2. Information Collected under HSS at ANC Sentinel Sites

HSS provides information on two bio-markers- HIV and syphilis. All blood specimens collected under HSS are tested for these two infections. When recruiting an individual in HSS, information is collected on basic demographic parameters such as age, education, occupation, spouse's occupation, and order of pregnancy. Collected information is kept minimal and restricted to those who might be asked under routine clinic procedures. During the recent rounds, a few questions were added to identify potential biases in the sample (e.g., source of referral) or to further profile the respondents with respect to their vulnerability (migration status of spouse) so that HIV prevalence estimates can be better explained and interpreted. HSS 2014-15 collects information on the following nine key demographic variables from every respondent.

1. Age: The age of the respondent is recorded in number of completed years. Since age is a part of eligibility criteria, improper recording or non-recording of age makes a sample invalid. Information on age helps identify the age groups with high HIV prevalence. In the absence of data on HIV incidence, high prevalence among younger age groups is considered a proxy for recent infections.

2. Literacy status: The literacy status of an individual has a direct bearing on the awareness levels with respect to risks of acquiring HIV and means of protecting oneself. Knowing the literacy status of the pregnant woman, helps in understanding the differentials in HIV prevalence and informs demographics about the women who are accessing services at ANC clinics. This information may also be helpful to compare and standardize the demographic profiles of two independent samples under HSS, while investigating any unusual increase or decrease in trends. Under HSS 2014-15, the literacy status of respondents was classified into five categories as defined below.

(a). Illiterate: People with no formal or non-formal education. (b). Literate and till 5th standard: People with non-formal education or those who joined school but did not study beyond 5th standard. (c). 6th to 10th standard: Those who studied beyond 5th standard but not beyond 10th standard. (d). 11th to graduation: Those who studied beyond 10th standard but not beyond graduation. Includes those with technical education/diplomas,. (e). Post-graduation: Those who studied beyond graduation.

3. Order of current pregnancy: The order of pregnancy denotes the number of times a woman has been pregnant. It includes the number of live births, still births, and abortions. It is also referred to as gravidity. Women who are pregnant for the first time

are referred to as primi-gravida. In the context of HIV, order of pregnancy indicates the duration of exposure to sexual risks. Since primi-gravida are likely to be exposed to sexual risks only recently, HIV prevalence among them is considered a proxy for new HIV infections and helps in understanding the HIV incidence in that region. The order of pregnancy is recorded as first, second, third, fourth, or more.

4. Source of referral to the ANC clinic: Under HSS, ANC clinic attendees are asked who referred them to the clinic for antenatal check-up. This variable was added to the data collection form to understand the various sources of referral, especially to assess if there is any specific bias in the sample because of specific referrals of HIV-positive cases from any source. Published literature indicates that there is disproportionate referral of HIV-positive cases from private sector to government hospitals. Similarly, if there are higher numbers of referrals from ICTC/ ART centres in the sample, it may bias the HIV prevalence, as those respondents are likely to be people who have been exposed to HIV risk, to have HIV risk perception or w ho are known to be HIV-positive. This variable helps assess any such phenomenon. The response categories listed in the HSS data form include: (a). Self-referral (b). Family/ relatives/ neighbours/ friends (c). NGO (d). Private hospital (doctors/ nurses) (e). Government hospital (including ANM/ ASHA) (f). ICTC/ ART centre.

5. Current place of residence: HSS 2014-15 records the reported current residence of the respondent as 'Urban' or 'Rural'. If the current place of residence of the respondent i.e., the place she is living with her husband falls under Municipal Corporation, municipal council, or cantonment area, it is classified as 'urban'. Otherwise, it is recorded as 'rural'. Place of residence helps in studying the epidemic patterns in urban and rural areas separately and provides programmatic insight for implementing interventions. In the context of formerly high-prevalence states, urban rural differentials of HIV prevalence is important because HIV is known to have spread to rural areas, sometimes with higher prevalence in these states. In low-prevalence states with rising HIV trends, migration from rural areas to high prevalence destinations is likely to play a role. Therefore, studying rural epidemics is important to characterise the epidemic appropriately.

6. Duration of stay at current place of residence: All the respondents are asked about the duration of stay at the current place of residence (the place she is living with her husband) and the responses are recorded in years and months. If the duration is less than one year, '0' years and the number of months as reported by the respondent are recorded. If the duration is less than one month, the duration is recorded as '0' years,

'1' month. Duration of stay at current place of residence is asked to ascertain whether the pregnant woman belongs to the place where the ANC clinic is situated. Because many pregnant women in India go to their maternal home for delivery, it is likely that they attend ANC clinic at their mother's place. If this is the case, her duration of stay will be only a few days or months. Although counsellors are instructed to ask where the respondent is living with her husband, this variable helps eliminate reporting errors. Also, it helps in understanding the duration of exposure to sexual risk. Similar to order of pregnancy, this variable also helps assess new HIV infections occurring in a region.

7. Current occupation of respondent: Certain occupations are associated with higher exposure and risk to HIV. It is important to understand the profile of respondents and differentials of HIV with respect to their occupation. For this purpose, HSS has categorized occupations into 13 categories ensuring that all the possible occupations are covered and the categories are relevant to the epidemiological analysis of HIV prevalence data. The occupation categories and their definitions were as follows: (a). Agricultural labourer (b). Non-agricultural labourer: includes workers at construction sites, quarries, stone crushers, road or canal works, brick-kilns. (c). Domestic servant (d). Skilled/semi-skilled worker: includes workers in small-scale or cottage industries; industrial/ factory workers; technicians such as electricians, masons, plumbers, carpenters, goldsmiths, iron-smiths, and those involved in automobile repair; artisans such as weavers, potters, painters, cobblers, shoe-makers, tailors. (e). Petty business/ small shop: includes vendors selling vegetables, fruits, milk, and newspapers; pan shop operators. (f). Large business/self-employed: includes professionals and business people. (g). Service (govt/pvt): those working on salary basis in government, private, or institutional sector; excludes drivers and hotel staff. (h). Student (i). Truck drivers/ helpers (j). Local transport workers (auto/ taxi drivers, handcart pullers, rickshaw pullers, etc.) (k). Hotel staff (l). Agricultural cultivators/ landholders (m). Housewife (in order to be consistent with the occupation codes for spouse of respondent, housewife is Code 14).

8. Current occupation of spouse: Occupation of spouse is an important epidemiological variable that may help identify population groups that are at higher risk of acquiring HIV. HSS used the same occupational categories as those used for the respondent. The two differences are that the category 'unemployed' (Code13) is used in the place of 'housewife' and there is an additional category: 'Not applicable (never married/ widow/divorced/separated)' (Code 99).

9. Migration status of spouse: Analyses of drivers of the emerging epidemic in some low-prevalence states points to migration from these states to high-prevalence destinations (NACO Annual Report 2013-14, Chapter 2. Current Epidemiological Scenario of HIV/AIDS, pg.12). In order to assess the effects of migration status of spouse on HIV prevalence among ANC clinic attendees, respondents in HSS were asked whether spouse resides alone in another place/town away from wife for work for longer than 6 months. This question is not applicable to respondents who were never married/widowed/ divorced/separated.

2.3. Implementation Structure of HIV Sentinel Surveillance in India

HIV sentinel surveillance has a robust structure for planning, implementation, and review at national, regional, and state levels. The structure and key functions of involved agencies are shown in Figure 1.

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, comprised of experts from the fields of epidemiology, demography, surveillance, biostatistics, and laboratory services, advises NACO on the broad strategy and

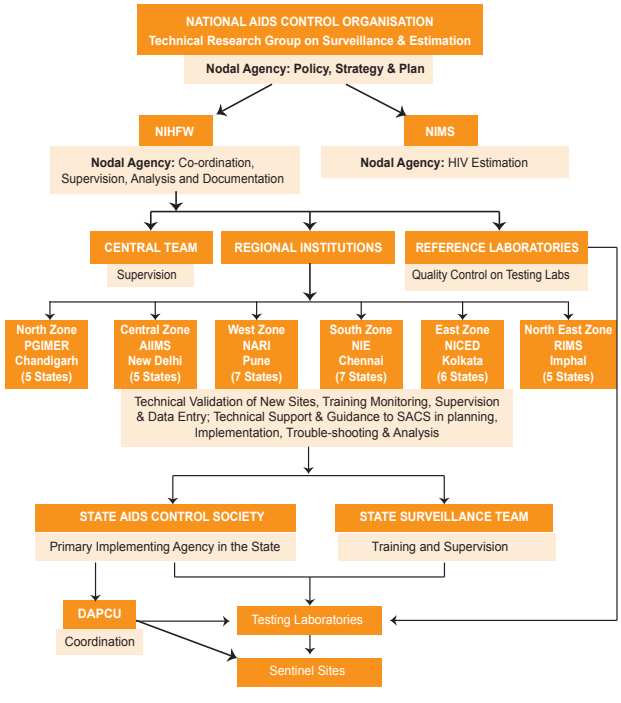


Figure 1: Implementing Structure of HIV Sentinel Surveillance in India

The main goal of implementing structure of HSS is for performing the assessment of the implementation plans of HSS and reviews the outcomes of each round. Two national institutes—National Institute of Health and Family Welfare (NIHFW) and ICMR-National Institute of Medical Statistics (ICMR-NIMS)—supports national level activity planning and coordination. In addition, the central team, which is coordinated by NIHFW, New Delhi and is comprised of experts from the Centres 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, provide support in training and supervision.

Regional level: Since 2006, NIE has been identified as regional institutes (RIs) for HSS to provide technical support to the State AIDS Control Societies (SACS) for all HSS activities in southern zone, starting with identification of new sites, training, monitoring and supervision, and improving quality of the data collection and their analysis. Data entry is another function performed by RIs. The team at each RI is comprised of two epidemiologists/public health experts and one micro-biologist, which are supported by one project coordinator, two research officers, one computer Assistant/data manager, and between four and ten data entry operators, depending on the volume of data entry. The names of the six regional institutes and the distribution of states among them are in Table 2.

State level: SACS is the primary agency responsible for implementation of HSS and NACO has appointed state epidemiologists at the SACS to support the activities and promote data analysis. In addition to these, every state has a surveillance team comprised of 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. All activities are coordinated by RIs.

District level: In districts with functional district AIDS Prevention and Control Units (DAPCUs), the DAPCU staffs are 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 reference 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 5 % of HIV negative specimens.

Table 2: Regional Institutes for HIV Sentinel Surveillance and their State Allocation	
Name of regional institution	Responsible states
Central Zone: All India Institute of Medical Science, New Delhi	Uttar Pradesh, Bihar, Jharkhand, Uttaranchal, and Delhi.
North Zone: Post-graduate Institute of Medical Education and Research, Chandigarh	Haryana, Himachal Pradesh, Jammu & Kashmir, Punjab, and Chandigarh.
West Zone: National AIDS Research Institute, Pune	Maharashtra, Gujarat, Goa, Madhya Pradesh, Rajasthan, Daman & Diu, and Dadra Nagar Haveli.
South Zone: National Institute of Epidemiology, ICMR, Chennai	Andhra Pradesh, Tamil Nadu, Karnataka, Kerala, Odisha, Puducherry, and Lakshadweep and Telangana.
East Zone: National Institute of Cholera and Enteric Diseases, Kolkata	West Bengal, Chhattisgarh, Sikkim, Andaman & Nicobar Islands, Meghalaya, and Nagaland.
Northeast Zone: Regional Institute of Medical Sciences, Imphal	Manipur, Mizoram, Tripura, Assam, and Arunachal Pradesh.

2.4. Key Initiatives during HIV Sentinel Surveillance 2014-15:

In response to key issues identified in the implementation of HSS during the previous rounds and to improve the quality and timeliness of the surveillance process in the 14th round, several new initiatives were implemented as part of continuous quality improvement.

SACS checklist for preparatory activities:

This was developed to monitor the planning process for HSS in each state (Annex 3). All the preparatory activities were broken 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 to ensure that preparatory activities in all states adhered to the timelines.

Pre-surveillance sentinel site evaluation (SSE):

A pre-surveillance evaluation of ANC and STD sentinel sites was conducted to identify and correct human resources and infrastructure-related issues at the sentinel sites before initiation of surveillance. The evaluation also provided site information such as type of facility, average OPD attendance, availability of HIV and AIDS services, and distance of facilities from HSS labs (Annex 4), which may have implications on adherence to methodology.

Standard operational manuals, wall charts, and bilingual data forms:

These were developed to simplify the HSS methodology for site-level personnel and to ensure uniform implementation of the guidelines in all the sentinel sites. These were printed centrally and distributed across the country.

Training during HSS 2014-15:

Steps to improve quality of training:

1. A well-structured training programme was adopted to ensure that all the personnel involved in HSS at different levels were adequately and uniformly trained in the respective areas of responsibility.
2. The training agenda, curriculum, and planning and reporting formats were standardized and used in all the states. Standard slide sets and training manuals for training of sentinel site personnel were developed centrally to ensure uniformity.
3. Trainings included group work and a "know your sentinel site" exercise, which helped participants identify the routine practices that could affect the implementation of surveillance at their sites and recommended actions to address the same.
4. Pre and post-test assessments were given to each participant at the site-level trainings. Analysis of these scores helped state teams to identify the priority sites for supervisory visits.
5. Training reports for each batch were submitted in standard formats at the end of the each training.

Details of trainings:

1. Trainings started with two batches of national pre-surveillance meetings with about 90 personnel from regional institutes and SACS to discuss the critical aspects of planning for HSS 2014-15 and to clearly understand the system for supportive supervision through the online Strategic Information Management System (SIMS) application.

2. This was followed by 2-day regional TOTs organised by the RIs for SACS officers and state surveillance teams, comprised of public health experts and microbiologists, to create state-level master trainers and to plan for the site-level trainings.

3. Site-level trainings (2 days per batch @ 8-10 sites per batch) were conducted in all the states. Representatives from the regional institutes and NACO observed the trainings to ensure that trainings were provided as per the protocol and that all the sessions were covered as per the session plan.
4. Separate trainings on surveillance testing protocols and lab reporting mechanisms through the SIMS application for HSS were organised for microbiologists and lab technicians from 117 ANC/STD testing labs and 13 NRLs.
5. Overall, 40 central team members; 30 officers from six RIs; 95 SACS officers including in-charge surveillance, Epidemiologists, and M&E officers; 280 state surveillance team members; 260 laboratory personnel including microbiologists and lab technicians from the designated testing labs; and more than 3,000 sentinel site personnel including medical officers, nurse/counsellors, and lab technicians were trained under HSS 2014-15.

Laboratory system: For HSS 2014-15, the laboratory system was strengthened by limiting the testing of specimens to designated SRLs. Real-time monitoring of the quality of blood specimens and laboratory processes was achieved through introduction of web based reporting through the SIMS application for HSS. Efforts were made to standardize quality assurance aspects of sample testing under HSS and to streamline responses in case of discordant test results between testing lab and reference lab through the SIMS application.

Supervisory mechanisms for HSS 2014-15: Supervision of all HSS activities was prioritized to ensure smooth implementation and high-quality data collection. Extensive mechanisms were developed to set up a comprehensive supervisory system for HSS and to ensure that 100 % of HSS sites were visited in the first 15 days of the start of sample collection. The principles adopted included action-oriented supervision, real-time monitoring and feedback, accountability for providing feedback and taking action, and an integrated web-based system to enhance the reach and effectiveness of supervision.

SIMS modules for web-based supervision.

Specific modules were developed and made operational in the web-based SIMS for HSS to facilitate real-time monitoring of HSS 2014-15.

1. Field supervision was conducted by 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 used the SIMS supervisor

module via the field supervisory quick feedback and action taken report sub-modules. The module was used extensively by all the supervisors and helped in quick identification and resolution of challenges in the field.

2. Data were supervised by data managers at RIs to monitor the quality of data collection and transportation using the SIMS module.
3. Laboratory supervision was conducted by SRLs and NRLs to monitor the quality of blood specimens, progress in laboratory processing, and external quality assurance, using the SIMS lab module.

Overall, 80 % of supervisors reported on the SIMS field supervisor quick feedback format, and 52 % of action taken report formats were submitted by HSS focal persons from SACS and RIs. Laboratory reporting through the lab module was completed by 87% of SRLs.

Integrated monitoring and supervision plan

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

2. The first round of visits was conducted by RI, SACS, and SST members. Central team members (CTM) visited the top priority sites identified in feedback from the first round of visits. Subsequent visits were based on priority with a goal of making at least three visits to each identified site which require supervision.

SMS-based daily reporting from sentinel sites

This was piloted in last round and implemented in this round as an approach of daily reporting of the number of samples collected at each sentinel site through a group SMS from a registered mobile number to a central server. The system automatically compiled and displayed site-wise data on an Excel format on a real-time basis. Access to this web-based application was given to SACS, RIs, and DAC and facilitated identification of sites with poor performance and enabled initiation of corrective action at sites that initiated HSS late; where sample collection was too slow or too fast; and where there were large gaps in sample collection.

CHAPTER 3.

Profile of Respondents

Data was collected from each respondent on key nine socio-demographic variables. Analysis of these variables is important because they help programme managers and policy makers understand the background characteristics of clinic attendees. Also they help in the identification of particular characteristics which make respondents more prone to acquiring HIV infection and assessing how representative the sample is.

Review of the profile of the respondents showed that, at state level, three-fifths of respondents (63.8%) were in the age group of 15-24 years. Only 14.8% of respondents had no literacy skills. More than two-fifth (52%) of respondents were literate with 6th to 10th standard education, followed by those who studied up to graduation (20%). Those with only primary education accounted for 11.4%. More than two-fifth (45.9%) of the ANC clinic attendees were in their first and second pregnancy (38%). Almost two-thirds of the respondents (59.1%) reported that they reside in rural areas. About 79.4% of ANC clinic attendees reported that they were housewives. Only 9.3% reported that they were Agricultural labourer followed by Non-agricultural labourers (3.1%); skilled/semi-skilled workers (2.2%); Domestic servant (2.0%) .Non-agricultural labourers (24.5%) were the predominant occupations among the spouses of the respondents. Agricultural labourers (21.2%); skilled/semi-skilled workers (13.8%); service (9.7%); local transport worker (8.5%); petty business and agricultural cultivator/landholder (7.7% respectively); large business/self employed (2.2%); and truck driver/helper (2.1%) were other important occupation groups of spouses of respondents. Only 0.8% of ANC clinic attendees reported that their spouses reside in another place for work for longer than six months.

Table 3: Profile of Respondents at State Level, HSS 2014-15, Karnataka

Background characteristics	Number	%
Age (N=24710)		
15-24	15767	63.8
25-34	8625	34.9
35-44	316	1.3
45-49	2	0.0
Literacy status (N=24681)		
Illiterate	3653	14.8

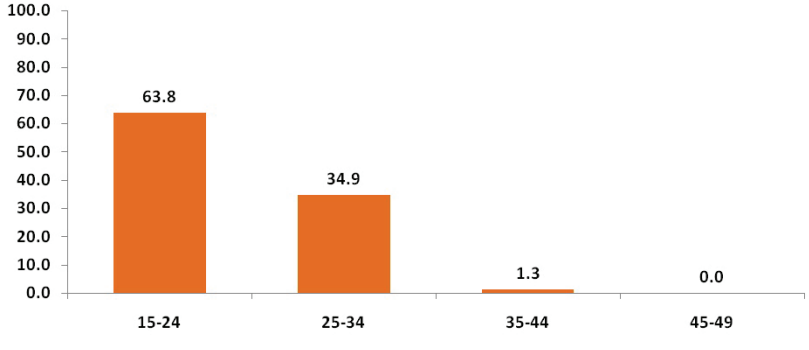
Literate and till 5th standard	2802	11.4
6th to 10th standard	12833	52.0
11th to Graduation	4924	20.0
Post Graduation	469	1.9
Order of current pregnancy (N=24692)		
First	11344	45.9
Second	9391	38.0
Third	3201	13.0
Fourth or more	756	3.1
Source of referral pregnancy (N=24674)		
Self referral	2432	9.9
Family/Relatives/Neighbors/Friends	3345	13.5
NGO	5	0.0
Private Hospital	175	0.7
Govt. Hospital	18368	74.4
ICTC/ART Centre	349	1.4
Current place of residence (N=24617)		
Urban	10062	40.9
Rural	14555	59.1
Current occupation of the respondent (N=24691)		
Agricultural Labourer	2294	9.3
Non-Agricultural labourer	764	3.1
Domestic servant	495	2.0
Skilled/Semiskilled worker	555	2.2
Petty business	152	0.6
Large business/self employed	27	0.1
Service (Govt./Pvt.)	464	1.9
Student	46	0.2
Truck driver/helper	2	0.0
Local transport worker	9	0.0
Hotel staff	44	0.2
Agricultural cultivator/landholder	245	1.0
Housewife	19594	79.4
Current occupation of the spouse (N=24691)		
Agricultural Labourer	5243	21.2
Non-Agricultural labourer	6037	24.5
Domestic servant	99	0.4
Skilled/Semiskilled worker	3398	13.8
Petty business	1892	7.7

Large business/self employed	541	2.2
Service (Govt./Pvt.)	2396	9.7
Student	13	0.1
Truck driver/helper	518	2.1
Local transport worker	2103	8.5
Hotel staff	487	2.0
Agricultural cultivator/landholder	1902	7.7
Unemployed	39	0.2
Not Applicable	23	0.1
Spouse resides alone in another place/town from wife for work for longer than 6 months (N=24640)		
Yes	196	0.8
No	24423	99.1
Not Applicable	21	0.1
HIV (N=24711)		
Negative	24621	99.6
Positive	90	0.4
Syphilis (N=24711)		
Negative	24699	100.0
Positive	12	0.0

3.1. Age

Age in completed years was recorded for every respondent at the time of recruitment into HSS. The majority (63.8%) belonged to the age group of 15-24 years and a little more than one- third (34.9%) was in the age group of 25-34 years. Only 1.3% of respondents belonged to the age group of 35-44 years and no one were registered in the 45- 49 years age group (Figure 2).

Figure 2: Percentage Distribution of respondents by age group at state level, HSS 2014-15



The proportion of respondents in the age group of 15-24 years ranged from 30.5% in Udupi to 75.4% in Chamarajanagar. Besides Chamarajanagar, the districts of Mysore(75.3%), Bagalkot(75.0%), Mandya(72.4%), Belgaum and Bangalore rural(72.3%), Bellary (72.1%), Haveri(72%), Koppal(69.5%), Davanagere (69.4%), Bijapur (69.3%), Gadag (67%), Bangalore (66.8%) Kolar (66.7%), Ramnagaram (66.6%), Chitradurga (66.4%), Chikmagalur (64.7%), Kodagu (63.6%), Shimoga and Tumkur (63.4%) , Bidar (63.3%), Dharwad (62.3%) and Hassan (62.1%) had nearly two-third of respondents in the 15-24 years of age group. Yadgir(56.8%), Chikballapur, 56.5%; Raichur, 55.4%; and Gulbarga (54.5%) showed more than 50% of respondents in the young age group. While the respondents in the age group of 25-34 years accounted only for one third of state level, it ranged between 66.5% in Udupi and 23.8% in Mysore district. Around 0.1 % of the respondents in the districts of Bagalkot and Mysore belonged to the age group 45-49 years (Table 4).

Table 4: Percentage Distribution of respondents by age group and district, HSS 2014-15

	15-24	25-34	35-44	45-49	N
	%	%	%	%	
Bagalkot	75.0	24.7	0.3	0.1	1200
Bangalore	66.8	32.1	1.1	0.0	798
Bangalore Rural	72.3	27.2	0.5	0.0	797
Belgaum	72.3	26.8	0.9	0.0	798
Bellary	72.1	27.5	0.4	0.0	1200
Bidar	63.3	35.4	1.3	0.0	799
Bijapur	69.3	29.8	1.0	0.0	800
Chamarajanagar	75.4	23.9	0.8	0.0	800
Chikballapur	56.5	42.0	1.5	0.0	800
Chikmagalur	64.7	35.1	0.3	0.0	796
Chitradurga	66.4	32.9	0.8	0.0	800
Dakshina Kannada	31.5	62.8	5.8	0.0	800
Davanagere	69.4	29.8	0.9	0.0	800
Dharwad	62.3	37.2	0.5	0.0	795
Gadag	67.0	32.5	0.5	0.0	800
Gulbarga	54.5	41.4	4.1	0.0	798
Hassan	62.1	37.0	0.9	0.0	799
Haveri	72.0	27.0	1.0	0.0	800
Kodagu	63.6	34.3	2.1	0.0	799

Kolar	66.7	32.0	1.3	0.0	799
Koppal	69.5	29.8	0.6	0.0	791
Mandya	72.4	26.7	0.8	0.0	744
Mysore	75.3	23.8	0.9	0.1	800
Raichur	55.4	43.5	1.1	0.0	800
Ramnagaram	66.6	32.6	0.8	0.0	800
Shimoga	63.4	34.9	1.8	0.0	800
Tumkur	63.4	35.4	1.3	0.0	800
Udupi	30.5	66.5	3.0	0.0	800
Uttara Kannada	48.9	48.6	2.5	0.0	797
Yadgir	56.8	42.4	0.9	0.0	800

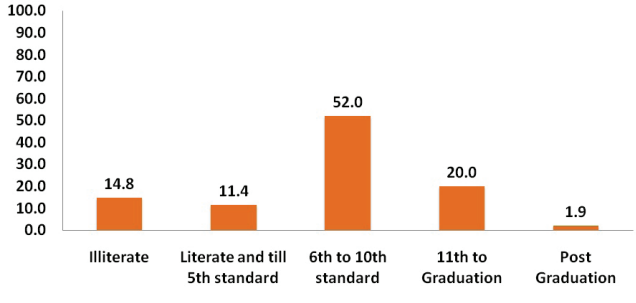
3.2. Literacy Status

Under HSS 2014-15, respondent literacy status was classified into five categories:

1. Illiterate: people with no formal or non-formal education.
2. Literate and till 5th standard: people with non-formal education or those who joined school but had not studied beyond 5th standard.
3. 6th to 10th standard: people who studied beyond 5th standard but not beyond 10th standard.
4. 11th to graduation: people who studied beyond 10th standard but not beyond graduation. Includes those with technical education/diplomas.
5. Post-graduation: people who studied beyond graduation.

More than 14.8% of respondents at the state level had no formal education. Around 11.4% of respondents studied up to fifth standard and the highest proportion of respondents (52.0%) studied between sixth and tenth standards. Around 20% of the respondents reported to have studied beyond 10th standard and up to graduation, while another about 1.9% had studied beyond graduation.

Figure 3: Percentage Distribution of respondents by educational status at state level, HSS 2014-15



The proportion of illiterates varied from 3.1% in Dakshina Kannada to 47.7% in Yadgir. Raichur(44.7%), Chikballapur (33.9%), Bijapur (30.3%), Bellary(28.5%), Koppal (26.7%), Gulbarga(25.8%) and Bidar(21.4%) had higher proportions of respondents who were illiterates. On the other hand, Shimoga(3.6), and Dakshina Kannada (3.1) had very low proportions of respondents who were illiterates.

Table 5. Percent Distribution of respondents by education and state, HSS 2014-15

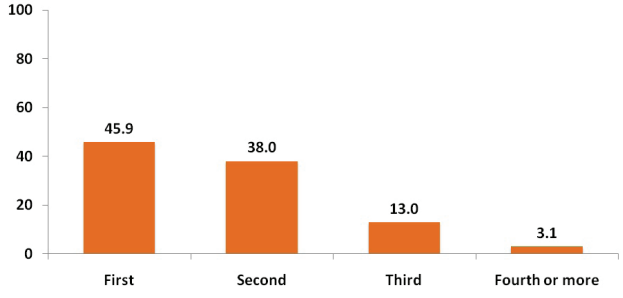
	Illiterate	Literate and till 5th standard	6th to 10th standard	11th to Graduation	Post Graduation	N
	%	%	%	%	%	
Bagalkot	15.9	17.1	53.4	12.7	0.8	1198
Bangalore	8.8	5.9	63.6	16.2	5.5	797
Bangalore Rural	5.3	3.9	56.8	32.9	1.1	796
Belgaum	16.8	5.8	62.9	13.9	0.6	798
Bellary	28.5	11.6	44.7	13.8	1.3	1199
Bidar	21.4	5.9	54.1	15.5	3.0	798
Bijapur	30.3	8.5	46.5	12.0	2.8	800
Chamara-janagar	5.4	4.8	62.2	27.4	0.3	799
Chikballapur	33.9	6.6	52.8	3.3	3.4	797
Chikmagalur	7.7	8.0	50.9	29.2	4.2	791
Chitradurga	9.4	22.0	47.9	19.9	0.9	800
Dakshina Kannada	3.1	14.6	62.7	18.4	1.1	799
Davanagere	8.3	17.4	52.2	21.2	1.0	799
Dharwad	16.4	47.9	22.8	10.5	2.4	791
Gadag	8.1	10.6	63.1	17.6	0.5	800
Gulbarga	25.8	14.3	45.9	12.3	1.8	798
Hassan	6.5	3.9	51.8	34.7	3.1	799
Haveri	7.4	12.4	60.2	17.0	3.0	799
Kodagu	10.8	7.6	44.0	36.2	1.4	798
Kolar	4.5	4.6	58.1	32.0	0.8	799
Koppal	26.7	8.7	49.4	11.8	3.4	790
Mandya	6.6	5.0	56.2	31.7	0.5	744
Mysore	5.0	4.9	63.5	25.9	0.8	800
Raichur	44.7	13.4	28.6	12.4	0.9	797
Ramnagaram	8.8	24.3	39.6	23.1	4.3	800
Shimoga	3.6	4.1	65.9	22.0	4.4	800
Tumkur	3.8	5.9	58.3	31.1	1.0	800
Udupi	5.4	12.8	62.9	17.8	1.3	800
Uttara Kannada	9.8	13.9	51.1	24.2	1.0	797
Yadgir	47.7	11.0	30.7	9.1	1.4	798

3.3. Order of Pregnancy

The order of pregnancy denotes the number of times a woman has become pregnant. It includes the number of live births, still births and abortions. It is also referred to as 'gravida'. As noted earlier in the context of HIV, order of pregnancy indicates the duration of exposure to sexual risks, so HIV prevalence among primi-gravida is considered as a proxy for new HIV infections and is an indicator of state HIV incidence.

At the state level, a little less than half (45.9%) of the respondents reported being pregnant for the first time, while 38.0% were pregnant for the second time, and 13.0% of respondents reported that it was their third pregnancy. Only 3.1% of respondents were pregnant for the fourth or more time (Figure 4).

Figure 4: Percentage Distribution of respondents by order of pregnancy status at state level, HSS 2014-15



At the district level, the percent of primi-gravida varied between 33.0% in Raichur to 61.7% in Chickballapur. Chikmagalur(55%), Shimoga(54.8%), Chamarajanagar (52.1), Udupi(51.8%) , Ramnagaram (51.5), Bangalore rural (51.2) also had higher percentage of primi-gravida among respondents. Tumkur(44.9%), Hassan (42.9) and Bangalore rural (42.8) had higher percentage of respondents who were pregnant for second time (Table 6).

Table 6: Percentage Distribution of respondents by Order of Pregnancy and district, HSS 2014-15

	First	Second	Third	Fourth or more	N
Bagalkot	38.1	37.7	18.9	5.3	1200
Bangalore	43.9	40.6	12.9	2.6	798
Bangalore Rural	51.2	42.8	5.3	0.8	795
Belgaum	43.9	33.0	18.3	4.9	798

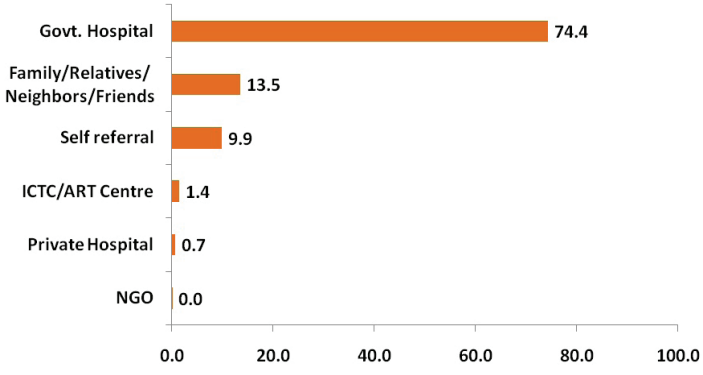
Bellary	42.0	35.9	18.3	3.8	1200
Bidar	42.4	30.3	18.8	8.5	799
Bijapur	36.3	36.4	20.0	7.4	800
Chamarajanagar	52.1	38.8	8.1	1.0	799
Chikballapur	61.7	32.7	5.3	0.4	796
Chikmagalur	55.0	39.2	5.0	0.8	794
Chitradurga	50.8	38.5	9.5	1.3	800
Dakshina Kannada	42.5	35.8	15.6	6.1	800
Davanagere	49.1	36.9	10.8	3.3	800
Dharwad	42.5	42.1	12.7	2.6	795
Gadag	49.4	33.9	14.5	2.1	799
Gulbarga	40.3	36.0	18.6	5.1	797
Hassan	47.0	42.9	8.4	1.8	798
Haveri	33.6	37.5	27.5	1.4	800
Kodagu	50.1	37.2	9.5	3.1	798
Kolar	48.3	39.2	10.4	2.1	799
Koppal	44.7	38.2	14.6	2.5	790
Mandya	48.0	40.4	9.6	2.0	743
Mysore	48.5	40.1	10.1	1.3	800
Raichur	33.0	40.8	20.7	5.5	799
Ramnagaram	51.5	39.5	8.1	0.9	800
Shimoga	54.8	36.0	8.1	1.1	800
Tumkur	44.8	44.9	8.1	2.3	800
Udupi	51.8	40.3	6.6	1.4	800
Uttara Kannada	45.7	38.6	11.8	3.9	795
Yadgir	41.6	36.5	16.8	5.1	800

3.4. Source of Referral to the ANC Clinic

This variable illuminates the various sources of referral, and helps to identify if a specific bias is being introduced in the sample due to specific referrals of HIV-positive cases from any source. The response categories listed in the HSS data form include self-referral; family/relative/ neighbour/friend; NGO; private hospital (doctor/nurse); government hospital (including ANM/ASHA); and ICTC/ ART centre. Government health care providers include ANM, ASHA, doctors/nurses at PHC, and CHC.

Government hospital/ANM/ASHA were identified as the major source of referral to ANC clinics, accounting for 74.4% of respondents, followed by Family/Relatives/ Neighbours/Friends (13.5%), and Self Referral (9.9%). Only 1.4% had been referred by ICTC/ART Center providers at the state level. Private Hospital accounted for 0.7% of referrals totally (Figure 5).

Figure 5: Percentage Distribution of respondents by source of referral at state level, HSS 2014-15



Referral from government service providers was higher in the districts of Ramnagaram(100%), Bidar(100%), Shimoga(99.9%), Koppal(99.9%), Bangalore rural(99.5%), Chitradurga (99.4%), Uttara Kannada (99.0%), Chamrajanagar (98.3%), Chikballapur (97.4%), Chikmagalur (92.8%) and Davanagere(92.5%). There were less referral from the government facilities in Bangalore (13.4%) and it was very low in Dharwad (7.9%). In Bangalore 60% of ANC clinic attendees were referred by Family/ Relatives/ Neighbors/ Friends. This was followed by the districts of Mandhya(49%), Bijapur (46%), Dharwad (45.4%), and Mysore(44.3%).Family/ Relatives/Neighbors/Friends referrals were lowest in the districts of Bellary and Chitradurga (0.1% respectively) and no referral from Family/ Relatives/ Neighbors/ Friends in the districts of Uttara kannada, Shimoga, Ramnagaram, Koppal, Haveri, Hassan, Chikballapur, Chamarajanagar and Bidar.

While overall Self referrals accounted for around 9.9% of respondents, the district of Kolar (40.6) had higher proportions of Self referrals. While ICTC/ART Centre accounted for only 1.4% of all respondents as a source of referral to ANC clinics, the districts of Dharwad (41.5%) showed relatively higher levels of ICTC/ART Centre. At state level, the proportion of referral from Private Hospital was also low (0.7%), however, it varied in certain districts, for example in the districts of Dakshina Kannada(7.0%) showed relatively higher proportions of referrals from Private Hospital (Table 7).

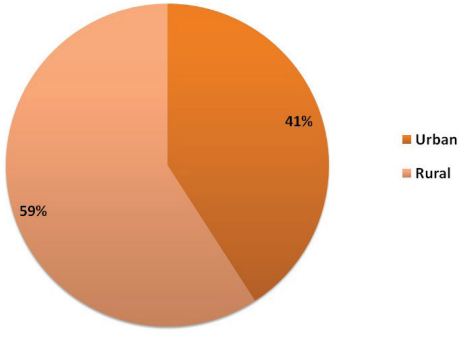
Table 7: Percentage Distribution of respondents by source of referral and district, HSS 2014-15

District	Self referral %	Family/Relatives/ Neighbors/Friends %	NGO %	Private Hospital %	Govt. Hospital %	ICTC/ART Centre %	N
Bagalkot	26.8	25.0	0.0	0.2	48.0	0.0	1199
Bangalore	26.6	60.0	0.0	0.0	13.4	0.0	798
Bangalore Rural	0.3	0.3	0.0	0.0	99.5	0.0	797
Belgaum	16.9	14.1	0.0	0.6	68.4	0.0	797
Bellary	11.2	0.1	0.0	0.0	88.7	0.0	1199
Bidar	0.0	0.0	0.0	0.0	100.0	0.0	799
Bijapur	0.0	46.0	0.0	0.0	54.0	0.0	800
Chamarajanagar	1.8	0.0	0.0	0.0	98.3	0.0	800
Chikballapur	1.6	0.0	0.0	0.0	97.4	1.0	798
Chikmagalur	2.0	0.8	0.0	4.4	92.8	0.0	793
Chitradurga	0.0	0.1	0.0	0.0	99.4	0.5	800
Dakshina Kannada	21.4	4.9	0.0	7.0	66.8	0.0	800
Davanagere	0.5	6.5	0.4	0.0	92.5	0.1	800
Dharwad	4.1	45.4	0.0	1.1	7.9	41.5	786
Gadag	0.1	38.6	0.0	0.0	61.3	0.0	800
Gulbarga	3.0	29.8	0.0	0.0	67.2	0.0	795
Hassan	29.3	0.0	0.0	3.4	67.2	0.1	798
Haveri	18.4	0.0	0.0	0.0	81.6	0.0	798
Kodagu	30.0	12.4	0.0	0.0	57.5	0.0	796
Kolar	40.6	12.3	0.0	0.0	47.1	0.0	798
Koppal	0.1	0.0	0.0	0.0	99.9	0.0	790
Mandya	4.4	49.0	0.0	0.1	46.4	0.0	743
Mysore	8.8	44.3	0.0	0.0	47.0	0.0	800
Raichur	13.8	5.3	0.0	0.9	79.6	0.5	798
Ramnagaram	0.0	0.0	0.0	0.0	100.0	0.0	800
Shimoga	0.1	0.0	0.0	0.0	99.9	0.0	795
Tumkur	5.5	6.6	0.0	0.6	87.3	0.0	800
Udupi	13.5	4.6	0.0	1.9	80.0	0.0	800
Uttara Kannada	0.0	0.0	0.1	0.8	99.0	0.1	797
Yadgir	5.3	4.4	0.1	0.9	88.9	0.5	800

3.5. Current Place of Residence

2014-15 records the reported current residence of the respondent as urban or rural. If the current place of residence of the respondent was Municipal Corporation, municipal council, or cantonment area, it was classified as urban. Otherwise, it was recorded as rural.

Figure 6: Percentage Distribution of respondents by current place of residence at state level, HSS 2014-15



At the state level, 59.1% of respondents reported to be currently residing in rural areas and the rest (40.9%) reported to be currently residing in urban areas. However, there were inter-district variations. Only Bangalore was reported 98.2% of respondents residing in urban areas. On the other hand, the districts of Udupi (19.8%) and Kodagu(8.2%) had lower proportions of respondents who reported urban area as their residence (Table 8).

Table 8: Percentage Distribution of respondents by Current Place of residence and district, HSS 2014-15

District	Urban	Rural	N
Bagalkot	28.0	72.0	1198
Bangalore	98.2	1.8	797
Bangalore Rural	49.3	50.7	785
Belgaum	29.4	70.6	795
Bellary	44.7	55.3	1197
Bidar	38.5	61.5	795
Bijapur	41.6	58.4	798
Chamarajanagar	21.5	78.5	799

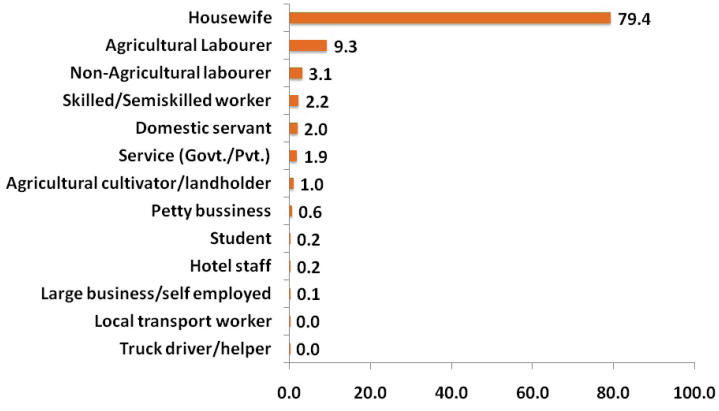
Chikballapur	26.2	73.8	794
Chikmagalur	26.4	73.6	791
Chitradurga	38.3	61.7	799
Dakshina Kannada	22.9	77.1	798
Davanagere	42.0	58.0	800
Dharwad	48.9	51.1	790
Gadag	41.1	58.9	796
Gulbarga	47.9	52.1	789
Hassan	35.0	65.0	797
Haveri	36.1	63.9	798
Kodagu	8.2	91.8	795
Kolar	61.7	38.3	799
Koppal	53.8	46.2	782
Mandya	35.9	64.1	743
Mysore	42.0	58.0	800
Raichur	37.3	62.7	796
Ramnagaram	58.3	41.8	800
Shimoga	47.2	52.8	791
Tumkur	35.6	64.4	800
Udupi	19.8	80.3	800
Uttara Kannada	53.6	46.4	796
Yadgir	61.3	38.7	799

3.6. Current Occupation of the Respondent

Certain occupations are associated with higher exposure and risk to HIV. It is important to understand the profile of respondents with respect to their occupation. For this purpose, HSS has categorized 13 occupations, as detailed in an earlier chapter.

At the state level, the majority of the respondents (79.4%) were housewives, and 9.3% of respondents reported to be Agricultural labourers, and non-agricultural labourers (3.1%), Skilled/Semiskilled work was (2.2%) and Domestic servant were accounted for 2.0% of respondents, followed by Service (Govt/Pvt.) (1.9%). Less than 1 % of the respondents were reported to be Petty Business (0.6%), Student & Hotel staff (0.2% respectively) and Large business /self employed (0.1). 0 % was reported in the category of Truck driver/ helper and Local transport worker (Figure 7).

Figure 7: Percentage Distribution of respondents by Current Occupation of the Respondent at state level, HSS 2014-15



In all the districts, majority of respondents were housewives. A high proportion of respondents reported their occupation as housewives in the districts of Shimoga (98.3%), Bangalore rural(95.1%), Davanagere and Kolar (94.4% respectively),Mandiya and Tumkur (93.8% respectively), Chamarajanagar (93.3), Ramnagaram (92.8%), Bangalore (92.6), Haveri (92.5), Uttara Kannada (90.8%) and Bidar (90.1%). Following housewife, a high proportion of respondents reported their occupation as agricultural labourers in the districts of Raichur (39.0%) and Koppal(31.2%). Similarly, a higher proportion of respondents reported being in non-agricultural labourers in the districts of Raichur(16.8%), Bagalkot(7.4%) and Yadgir (7.0%). In Dakshina Kannada 38.3%, of respondents reported to be Skilled/Semiskilled work (Table 9).

Table 9: Percentagedistribution of respondents by Occupation and district, HSS 2014-15

	Agricultural Labourer	Non-Agricultural labourer	Domestic servant	Skilled/Semiskilled worker	Petty business	Large business/self employed	Service (Govt./Pvt.)	Student	Truck driver/helper	Local transport worker	Hotel staff	Agricultural cultivator/ landholder	Housewife	
Bagalkot	21.8	7.4	1.2	3.4	2.0	0.5	1.3	0.0	0.0	0.1	0.3	1.2	60.8	1196
Bangalore	0.3	3.3	0.1	0.3	0.3	0.1	2.5	0.1	0.0	0.4	0.1	0.0	92.6	798

Bangalore Rural	0.4	2.6	0.0	1.1	0.4	0.0	0.4	0.0	0.0	0.0	0.0	0.0	95.1	795
Belgaum	2.5	0.9	0.0	0.4	0.1	0.1	0.9	0.3	0.0	0.0	0.1	20.7	74.1	798
Bellary	12.8	6.5	26.0	1.1	0.8	0.3	1.2	0.0	0.0	0.1	0.4	0.3	50.7	1199
Bidar	7.2	1.1	0.0	0.1	0.0	0.0	0.4	0.6	0.0	0.0	0.0	0.5	90.1	797
Bijapur	24.9	1.3	0.0	1.3	0.3	0.0	0.4	0.0	0.0	0.0	0.0	0.0	72.0	800
Chamara-janagar	0.9	3.5	0.0	0.1	0.0	0.3	1.9	0.1	0.0	0.0	0.0	0.0	93.3	800
Chikballapur	8.8	0.8	0.4	4.8	0.8	0.4	4.3	0.1	0.0	0.3	0.8	0.3	78.6	799
Chikmagalur	15.1	2.1	0.4	1.6	1.4	0.1	3.3	0.6	0.0	0.0	0.5	0.6	74.2	796
Chitradurga	4.9	0.8	0.5	0.5	0.9	0.3	0.6	0.6	0.0	0.0	0.0	2.1	88.9	800
Dakshina Kannada	0.0	4.1	0.5	38.3	0.0	0.0	4.6	0.3	0.0	0.0	0.0	0.1	52.1	800
Davanagere	1.9	2.1	0.0	0.1	0.3	0.1	0.8	0.0	0.0	0.0	0.0	0.4	94.4	800
Dharwad	3.6	4.8	0.0	0.3	0.3	0.1	2.1	0.0	0.0	0.0	0.5	0.0	88.3	795
Gadag	6.5	1.8	0.1	0.6	0.6	0.0	2.9	0.0	0.1	0.0	0.0	0.0	87.4	800
Gulbarga	18.4	4.5	1.0	0.1	0.1	0.1	0.8	0.5	0.0	0.0	0.0	0.3	74.2	795
Hassan	14.4	1.6	0.0	1.1	0.3	0.0	2.5	0.5	0.0	0.0	0.0	0.1	79.4	797
Haveri	4.9	0.6	0.0	0.6	0.8	0.1	0.4	0.0	0.0	0.1	0.0	0.0	92.5	799
Kodagu	20.1	0.3	0.3	0.1	0.3	0.0	4.6	0.1	0.0	0.0	0.1	0.1	74.0	797
Kolar	1.5	1.9	0.0	0.3	0.3	0.0	1.0	0.0	0.0	0.0	0.3	0.5	94.4	799
Koppal	31.2	3.7	0.0	0.9	1.3	0.0	1.1	0.3	0.0	0.0	0.1	0.6	60.8	791
Mandya	2.0	1.1	0.1	0.1	0.0	0.0	2.6	0.1	0.0	0.0	0.1	0.0	93.8	744
Mysore	1.9	0.3	13.3	0.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	1.8	80.9	800
Raichur	39.0	16.8	1.9	2.8	1.4	0.0	2.1	0.3	0.0	0.0	0.4	0.3	35.3	800
Ramnagaram	0.3	2.0	0.0	0.3	0.6	0.3	3.5	0.0	0.1	0.0	0.3	0.0	92.8	800
Shimoga	0.1	0.1	0.0	0.0	0.1	0.0	1.1	0.0	0.0	0.0	0.3	0.0	98.3	800
Tumkur	0.8	1.9	0.1	0.6	0.3	0.0	1.5	0.5	0.0	0.1	0.5	0.0	93.8	800
Udupi	0.1	1.8	0.6	4.6	0.0	0.1	2.6	0.0	0.0	0.0	0.3	0.0	89.9	800
Uttara Kannada	1.0	2.5	1.1	0.1	0.9	0.0	3.1	0.3	0.0	0.0	0.1	0.0	90.8	796
Yadgir	23.5	7.0	0.8	1.6	2.6	0.1	1.6	0.5	0.0	0.0	0.0	0.3	62.0	800

3.7. Current Occupation of Spouse

The respondents were also asked about the current occupation of their spouses. Occupation of spouse is an important epidemiological variable that may help identify population groups at higher risk of acquiring HIV. HSS used the same occupational categories as those used for the respondent. The two differences were that the category 'unemployed' (Code 13) is used in the place of 'housewife' and there is an additional category 'not applicable' (for never married/widowed/divorced/ separated)' (Code 99).

Figure 8: Percentage Distribution of respondents by Current Occupation of the spouse at state level, HSS 2014-15

At the state level, non-agricultural labourers (24.5%), agricultural labourers (21.2%), skilled/ semi- skilled workers (13.8%), service (Govt/pvt) (9.7%), Local transport workers (8.5%), petty business/small shops and agricultural cultivator/ Land holder (7.7% respectively), Large Business/Self employed (2.2%), Truck Driver/ Helper (2.1%), Hotel staff (2.0%) were the predominant occupations of the spouses of respondents. Around 0.4% of respondents reported that their spouse was domestic servant (Figure 8).

Similar patterns were noted across the states with certain inter-state variations (Table 10). A high proportion of respondents reported that their spouse's occupation as Non-agricultural Labourer in the districts of Uttara Kannada (44.7%), Chamarajanagar (40.3) and Dharwad (40.0%). A high proportion of respondents reported their spouse occupation as Agricultural labourer in the district of Raichur (40.9%).

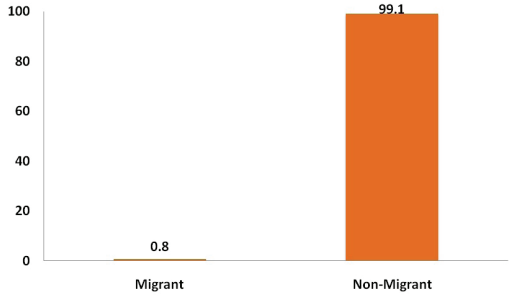
Table 10: Percentage Distribution of respondents by the Occupation of spouse and district, HSS 2014-15

	Agricultural Labourer	Non-Agricultural labourer	Domestic servant	Skilled/Semiskilled worker	Petty business	Large business/self employed	Service (Govt./Pvt.)	Student	Truck driver/helper	Local transport worker	Hotel staff	Agricultural cultivator/ landholder	Unemployed	Not Applicable	
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	N
Bagalkot	30.1	19.5	0.4	14.3	10.0	2.5	7.6	0.0	1.3	7.5	1.3	4.9	0.3	0.3	1197
Bangalore	2.1	36.6	0.3	10.4	7.0	4.9	18.2	0.0	4.5	12.9	0.8	2.3	0.0	0.0	797
Bangalore Rural	8.5	22.4	0.0	31.9	6.8	0.6	11.2	0.0	0.8	12.2	0.8	4.8	0.1	0.0	796
Belgaum	2.9	17.5	0.0	15.5	9.1	0.9	11.2	0.0	1.4	6.5	0.8	34.2	0.0	0.0	798
Bellary	23.6	28.3	0.2	19.4	3.3	2.0	6.2	0.2	4.0	7.3	1.3	4.3	0.1	0.0	1196
Bidar	12.5	39.7	0.0	1.8	10.8	0.6	7.0	0.0	5.5	12.8	3.5	5.4	0.5	0.0	799
Bijapur	29.0	3.4	0.0	23.5	10.6	0.1	9.3	0.0	1.9	14.5	0.5	7.3	0.0	0.0	800
Chamarajanagar	19.5	40.3	0.0	9.8	4.0	2.9	7.4	0.0	2.1	11.1	1.9	1.1	0.0	0.0	800
Chikballapur	30.8	2.3	0.3	29.0	7.9	0.5	14.3	0.1	3.4	4.1	2.9	4.6	0.0	0.0	800
Chikmagalur	33.5	25.5	0.0	5.5	6.3	3.3	6.8	0.0	1.9	5.0	0.9	11.2	0.0	0.1	795
Chitradurga	21.4	27.5	0.0	4.9	8.3	1.9	6.3	0.3	1.6	9.9	2.3	15.9	0.0	0.0	800
D Kannada	0.9	38.1	0.0	33.3	3.3	0.3	7.0	0.0	0.3	7.8	4.9	3.8	0.1	0.5	800
Davanagere	31.6	30.0	0.1	9.5	6.5	0.3	3.9	0.0	1.4	4.5	1.4	9.6	0.9	0.4	800
Dharwad	36.5	40.0	0.4	3.0	3.3	1.9	8.4	0.0	1.3	2.9	1.4	0.1	0.9	0.0	795
Gadag	25.0	25.5	0.1	14.0	12.6	2.9	10.8	0.3	4.8	2.6	1.5	0.0	0.0	0.0	800
Gulbarga	28.6	20.3	0.0	4.0	9.8	4.7	7.2	0.5	3.6	11.3	2.5	6.9	0.5	0.1	795
Hassan	28.4	23.1	0.0	11.4	4.1	4.5	8.8	0.0	2.4	10.3	1.3	5.8	0.0	0.0	798
Haveri	28.2	24.5	0.0	13.5	3.9	3.1	5.8	0.0	0.5	11.1	0.9	8.4	0.0	0.1	799
Kodagu	35.4	11.6	0.1	8.5	7.5	2.4	14.6	0.0	0.4	10.3	1.3	7.5	0.0	0.4	796
Kolar	10.3	33.0	0.0	13.4	8.4	0.3	17.1	0.0	1.0	11.4	0.0	5.1	0.0	0.0	799
Koppal	35.8	19.5	10.0	7.0	8.3	0.8	5.8	0.0	2.1	5.8	1.1	3.3	0.0	0.5	791
Mandya	21.2	25.9	0.0	8.5	4.6	3.6	9.1	0.0	6.7	8.3	1.1	10.9	0.0	0.0	744
Mysore	19.3	29.4	0.0	7.6	8.0	1.5	7.6	0.0	1.3	9.3	0.6	15.5	0.0	0.0	800
Raichur	40.9	14.3	0.0	13.1	5.1	1.4	9.1	0.1	0.3	4.4	1.4	9.1	0.6	0.3	800
Ramnagaram	16.4	21.8	0.0	17.6	7.1	6.5	14.0	0.0	1.0	8.9	2.1	4.6	0.0	0.0	800
Shimoga	21.1	17.3	0.0	11.1	10.3	3.4	9.3	0.0	2.1	7.6	1.4	16.3	0.3	0.0	800
Tumkur	6.1	20.9	0.3	17.6	8.0	1.5	7.5	0.0	1.4	10.0	0.6	26.0	0.0	0.1	800
Udupi	4.0	22.0	0.0	25.8	5.1	1.5	10.6	0.0	0.1	11.5	15.8	3.5	0.1	0.0	800
Uttara Kannada	5.9	44.7	0.0	5.7	8.3	0.9	23.7	0.0	1.8	6.8	1.9	0.3	0.1	0.0	796
Yadgir	22.4	9.8	0.1	18.6	22.3	4.4	8.4	0.1	2.0	8.0	2.1	1.8	0.1	0.0	800

3.8. Migration Status of Spouse

In order to assess the relationship between spousal migration status and HIV prevalence among ANC clinic attendees, respondents in HSS were asked whether spouse resides in another place/town away from wife for work for longer than 6 months. This question was not applicable to those respondents who were never married/widowed/divorced/separated.

Figure 9: Percentage Distribution of respondents by migration status of spouse at state level, HSS 2014-15.



At the state level, around 0.8% of respondents reported that their spouses were migrants, though there were significant inter-district variations (Figure 9).

The highest proportion of respondents with a migrant spouse was Chikballapur (6.3%), followed by other districts of Uttara Kannada (3.3%), and Bangalore was 3.1% (Table 11).

Table 11: Percentage of respondents with Migrant spouse and district, HSS 2014-15

District	% respondents with migrant spouse	N
Bagalkot	0.1	1191
Bangalore	3.1	798
Bangalore Rural	0.8	790
Belgaum	0.1	797
Bellary	0.8	1199
Bidar	0.8	799
Bijapur	0.0	799
Chamarajanagar	0.0	795
Chikballapur	6.3	797
Chikmagalur	1.1	792
Chitradurga	0.0	800

Dakshina Kannada	1.5	800
Davanagere	0.0	800
Dharwad	0.6	789
Gadag	0.0	800
Gulbarga	0.3	794
Hassan	1.4	783
Haveri	0.3	799
Kodagu	0.6	795
Kolar	0.6	799
Koppal	0.4	791
Mandya	0.0	741
Mysore	0.0	799
Raichur	0.1	800
Ramnagaram	0.3	800
Shimoga	0.1	799
Tumkur	0.0	800
Udupi	0.5	800
Uttara Kannada	3.3	794
Yadgir	1.1	800

CHAPTER 4.

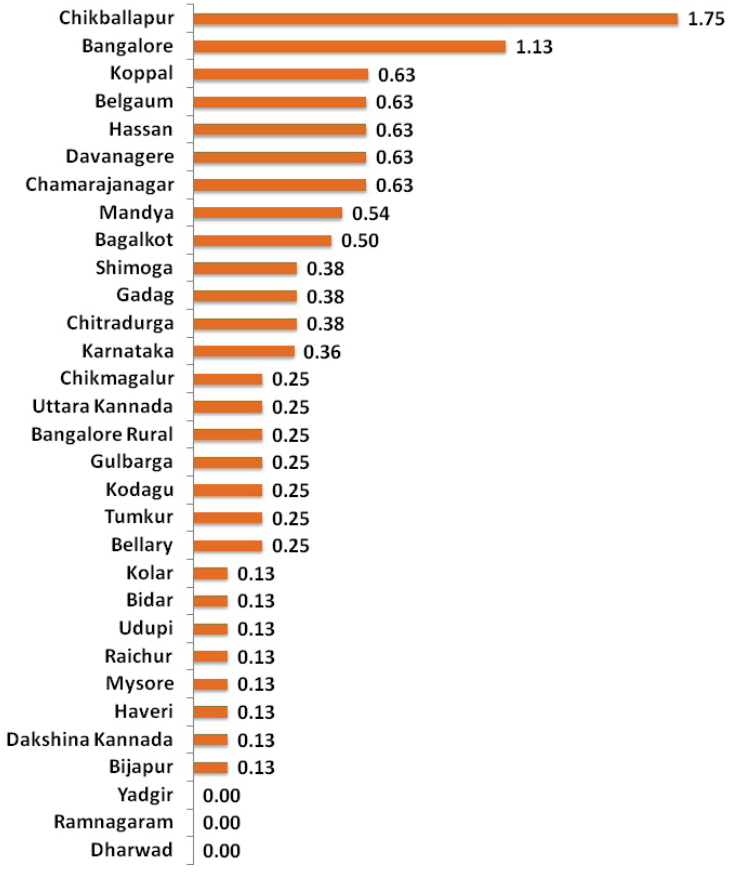
Levels of HIV Prevalence among ANC Clinic Attendees

HIV prevalence is the proportion of respondents who are found HIV positive at a given point of time in a specified geographic area. It indicates the burden of the epidemic in different population groups.

HIV prevalence among ANC clinic attendees is considered as proxy for HIV burden in general population. HIV prevalence of 1% or more among ANC clinic attendees is considered as high level, 0.5-0.99% is considered as moderate level and less than 0.5% is considered as low HIV prevalence for the analysis purpose in this report. This chapter describes the levels of HIV prevalence among ANC clinic attendees at state and district level.

4.1. HIV Prevalence at State and District Level

Figure 10: HIV Prevalence at State and District Level, HSS 2014-15.



4.2. Variations in the Number of High HIV-Prevalence Sites over Time

Within the state there were variations in HIV prevalence among the sites as well as the districts. There were 23 sites showing HIV prevalence as 'zero'.

Table 12: Site level variations in HIV Prevalence among ANC Clinic Attendees in Karnataka, HSS 2014-15	
No. of sites with ANC HIV prevalence of 1 % or more	5
No. of sites with ANC HIV prevalence of less than 1 %	34
No. of sites with ANC HIV prevalence of zero	23
Total	**62**

CHAPTER 5.

HIV Prevalence among ANC Clinic Attendees by Background Characteristics

The national, state and district response to the HIV epidemic is guided by data obtained through HIV Sentinel Surveillance (HSS). The HIV epidemic in India continues to be concentrated among HRG with low level and declining prevalence among general population.

This chapter gives details about HIV/AIDS prevalence as observed against the key nine demographic and socio-economic variables which were recorded for each respondent. Fully acknowledging that several factors work in tandem or individually to either cause or prevent HIV, hence we do not suggest any evident causation by projecting the key variables vis a vis the HIV prevalence, as risk factors for acquiring HIV. However, this sort of detailed analysis will help the programme and policy makers to understand the risk factors associated with transmission of HIV/AIDS with particular demographic characteristics. This chapter presents cross tabulations of demographic variables with HIV/AIDS positivity among the ANC clinic attendees. A detailed state-wise analysis will be needed to understand region wise variations, applying local knowledge about vulnerabilities and risk factors.

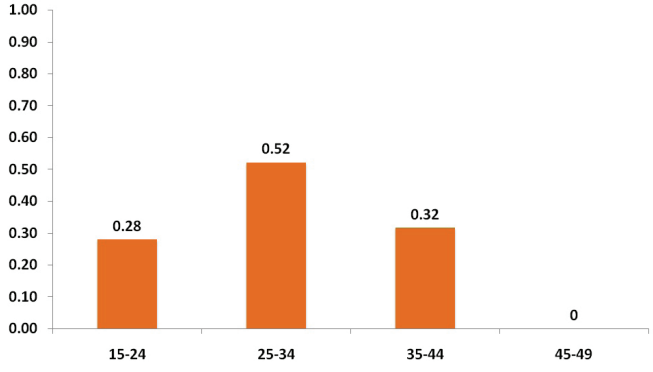
The following sections present the findings for each of these background characteristics:

1. Age
2. Literacy status
3. Order of current pregnancy
4. Source of referral to the ANC clinic
5. Current place of residence
6. Duration of stay at current place of residence
7. Current occupation of respondent
8. Current occupation of spouse
9. Migration status of spouse

5.1. HIV Prevalence among ANC Clinic Attendees by Age and District

Age-specific HIV prevalence data from HSS 2014-15 showed that HIV prevalence was higher among the 25-34 age group of the respondents (Figure 11). ANC clinic attendees in the younger age group (15-24 years) had a HIV prevalence of 0.28%, while it was 0.52% among those aged 25-34 years.

Figure 11: HIV Prevalence among ANC Clinic Attendees by Age, HSS 2014-15.



The HIV prevalence was high among the age group 15-24 years; it ranged from 0.12% in Bellary to 1.11% in Chikballapur. The other districts (Bangalore Rural, Bidar, Dakshina Kannada, Dharwad, Mysore, Raichur, Ramnagaram, Udupi, Yadgir) showed zero prevalence.

Among the age group of 25-49 years the HIV prevalence was high in Bagalkot, Davanagere, Bangalore, and Chikballapur districts where it ranged from 1.0% to 2.59%. In Bellary, Hassan, Chitradurga, Gadag, Koppal, Bangalore rural, Belgaum and Mandya districts it ranged from 0.60% to 0.98%. In Dakshina Kannada, Udupi, Uttara Kannada, Gulbarga, Raichur, Bidar, Kodagu, tumkur and Mysore districts it ranged between 0.18% and 0.51%. The other districts (Bijapur, Chamarajanagar, Chikmagalur, Dharwad, Haveri, Kolar, Ramnagaram, Shimoga, Yadgir) showed zero HIV prevalence. Among the age groups of 15-24 years and 25-49 years, zero HIV prevalence was seen in Dharwad, Ramnagaram, and Yadgir districts (Table 13).

Table 13 : HIV Prevalence among ANC Clinic Attendees by Age and District, HSS 2014-15

	15-24		25-49	
Karnataka	0.28	15767	0.51	8944
Bagalkot	0.33	900	1.00	300
Bangalore	0.56	533	2.26	265
Bangalore Rural	0.00	576	0.90	221
Belgaum	0.52	577	0.90	221
Bellary	0.12	865	0.60	335
Bidar	0.00	506	0.34	293
Bijapur	0.18	554	0.00	246

Chamarajanagar	0.83	603	0.00	197
Chikballapur	1.11	452	2.59	348
Chikmagalur	0.39	515	0.00	281
Chitradurga	0.19	531	0.74	269
Dakshina Kannada	0.00	252	0.18	548
Davanagere	0.36	555	1.22	245
Dharwad	0.00	495	0.00	301
Gadag	0.19	536	0.76	264
Gulbarga	0.23	435	0.28	363
Hassan	0.60	496	0.66	303
Haveri	0.17	576	0.00	224
Kodagu	0.20	508	0.34	291
Kolar	0.19	533	0.00	266
Koppal	0.55	550	0.83	241
Mandya	0.37	539	0.98	205
Mysore	0.00	602	0.51	198
Raichur	0.00	443	0.28	357
Ramnagaram	0.00	533	0.00	267
Shimoga	0.59	507	0.00	293
Tumkur	0.20	507	0.34	293
Udupi	0.00	244	0.18	556
Uttara Kannada	0.26	390	0.25	407
Yadgir	0.00	454	0.00	346

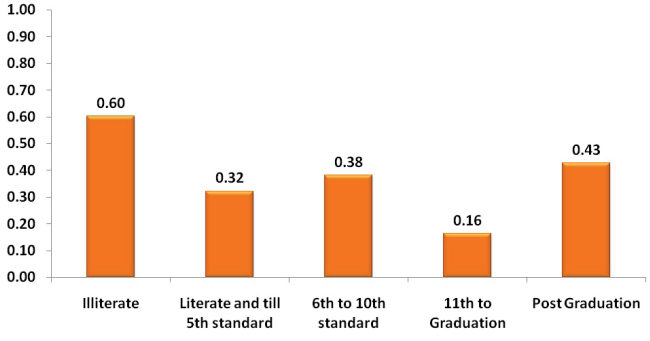
5.2. HIV Prevalence among ANC Clinic Attendees by Literacy Status

Under HSS 2014-15, HIV prevalence among ANC Clinic attendees, the literacy status was classified into five categories:

1. Illiterate: people with no formal or non-formal education, the HIV prevalence is 0.6%
2. Literate and till 5th standard: people with non-formal education or those who joined school but had not studied beyond 5th standard, the HIV prevalence is 0.32%
3. 6th to 10th standard: people who studied beyond 5th standard but not beyond 10th standard, the HIV prevalence is 0.38%.

4. 11th to graduation: people who studied beyond 10th standard but not beyond graduation. Includes those with technical education/diplomas, the HIV prevalence is 0.16%.
5. Post-graduation: people who studied beyond graduation, the HIV prevalence is 0.43%.

Figure 12: HIV Prevalence among ANC Clinic Attendees by Literacy Status, HSS 2014-15.



Among the Illiterate, the HIV prevalence in Tumkur, Kolar, Chikballapur, Mandya, Chikmagalur, Gadag, Davanagere, Bangalore, Kodagu, Belgaum, Bellary, Koppal, Gulbarga, Bagalkot and Raichur Districts it ranged from 3.3% to 0.3%. The rest of the districts showed zero prevalence.

Among Literate and till 5th standard, the HIV prevalence in Bangalore, Hassan, Shimoga, Udupi, Uttara Kannada, Davanagere, Bellary, and Bagalkot districts it ranged from 4.3% to 0.5%, the other districts showed zero prevalence.

In 6th to 10th standard, the HIV prevalence in Chikballapur, Bangalore, Koppal, Belgaum, Mandya, Hassan, Davanagere, Chitradurga, Bagalkot, Shimoga, Gadag, Chamarajanagar, Kodagu, Gulbarga, Bijapur, Uttara Kannada, Tumkur, Mysore, Havery, Dakshina Kannada, Chikmagalur, and Bangalore rural districts it ranges from 1.4% to 0.2%. The other district showed zero pervelance.

From 11th to Graduation, the HIV prevalence in Chamarajanagar, Koppal, Bidar, Bagalkot, Chitradurga, and Hassan districts it ranged from 1.4% to 0.4%. The other district showed zero prevalence.

In Post Graduation, the HIV prevalence in Bangalore rural and Chikballapur was 11.1 and 3.7% respectively and rest of the districts showed zero prevalence (Table 14).

Table 14: HIV Prevalence (%) among ANC Clinic Attendees by Literacy Status and Districts, HSS 2014-15

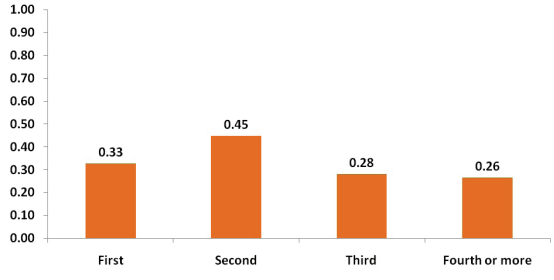
	Illiterate		Literate and till 5th standard		6th to 10th standard		11th to Graduation		Post Graduation	
	%	N	%	N	%	N	%	N	%	N
Karnataka	0.6	3653	0.3	2802	0.4	12833	0.2	4924	0.4	469
Bagalkot	0.5	191	0.5	205	0.5	640	0.7	152	0.0	10
Bangalore	1.4	70	4.3	47	1.2	507	0.0	129	0.0	44
Bangalore Rural	0.0	42	0.0	31	0.2	452	0.0	262	11.1	9
Belgaum	0.7	134	0.0	46	0.8	502	0.0	111	0.0	5
Bellary	0.6	342	0.7	139	0.0	536	0.0	166	0.0	16
Bidar	0.0	171	0.0	47	0.0	432	0.8	124	0.0	24
Bijapur	0.0	242	0.0	68	0.3	372	0.0	96	0.0	22
Chamarajanagar	0.0	43	0.0	38	0.4	497	1.4	219	0.0	2
Chikballapur	2.6	270	0.0	53	1.4	421	0.0	26	3.7	27
Chikmagalur	1.6	61	0.0	63	0.2	403	0.0	231	0.0	33
Chitradurga	0.0	75	0.0	176	0.5	383	0.6	159	0.0	7
Dakshina Kannada	0.0	25	0.0	117	0.2	501	0.0	147	0.0	9
Davanagere	1.5	66	0.7	139	0.7	417	0.0	169	0.0	8
Dharwad	0.0	130	0.0	379	0.0	180	0.0	83	0.0	19
Gadag	1.5	65	0.0	85	0.4	505	0.0	141	0.0	4
Gulbarga	0.5	206	0.0	114	0.3	366	0.0	98	0.0	14
Hassan	0.0	52	3.2	31	0.7	414	0.4	277	0.0	25
Haveri	0.0	59	0.0	99	0.2	481	0.0	136	0.0	24
Kodagu	1.2	86	0.0	61	0.3	351	0.0	289	0.0	11
Kolar	2.8	36	0.0	37	0.0	464	0.0	256	0.0	6
Koppal	0.5	211	0.0	69	0.8	390	1.1	93	0.0	27
Mandya	2.0	49	0.0	37	0.7	418	0.0	236	0.0	4
Mysore	0.0	40	0.0	39	0.2	508	0.0	207	0.0	6
Raichur	0.3	356	0.0	107	0.0	228	0.0	99	0.0	7
Ramnagaram	0.0	70	0.0	194	0.0	317	0.0	185	0.0	34
Shimoga	0.0	29	3.0	33	0.4	527	0.0	176	0.0	35
Tumkur	3.3	30	0.0	47	0.2	466	0.0	249	0.0	8
Udupi	0.0	43	1.0	102	0.0	503	0.0	142	0.0	10
Uttara Kannada	0.0	78	0.9	111	0.2	407	0.0	193	0.0	8
Yadgir	0.0	381	0.0	88	0.0	245	0.0	73	0.0	11

5.3. HIV Prevalence among ANC Clinic Attendees by Order of Pregnancy

The order of pregnancy denotes the number of times a woman has become pregnant. It includes the number of live births, still births, and abortions. It is also referred to as 'gravidity'. As noted earlier, in the context of HIV, order of pregnancy indicates the duration of exposure to sexual risks, so HIV prevalence among primi-gravida is considered a proxy for new HIV infections and is an indicator of state HIV incidence.

At the state level, the HIV prevalence among ANC clinic attendees in primi-gravida is 0.3%; in second gravida is 0.4%; in third gravida is 0.3% and fourth gravida it is 0.3% (Figure 13).

Figure 13: HIV Prevalence among ANC Clinic Attendees by Order of Pregnancy, HSS 2014-15.



At the District level, the HIV prevalence among ANC clinic attendees in Second-gravida ranged from 0.2% to 1.9% in 22 districts and remaining districts showed zero percent. High prevalence was seen in Chikballapur (1.9%), Koppal (1.3%), and Bangalore (1.2%).

At the District level, the HIV prevalence among ANC clinic attendees in primi-gravida ranges from 0.2% to 1.8% in 17 districts and remaining districts show zero percent. High prevalence was seen in Chikballapur (1.8%) and Hassan (1.1%).

HIV prevalence among ANC clinic attendees in Third-gravida ranged from 0.7% to 1.9% in 6 districts and remaining districts showed zero percent. High prevalence was seen in Udupi and Bangalore (1.9%) and Mandya (1.4%).

In fourth-gravida, High prevalence was seen in Davanagere (3.8%) and Belgaum (2.6%). and remaining districts showed zero percent (Table 15).

Table 15: HIV Prevalence (%) among ANC Clinic Attendees by Order of Pregnancy and districts , HSS 2014-15

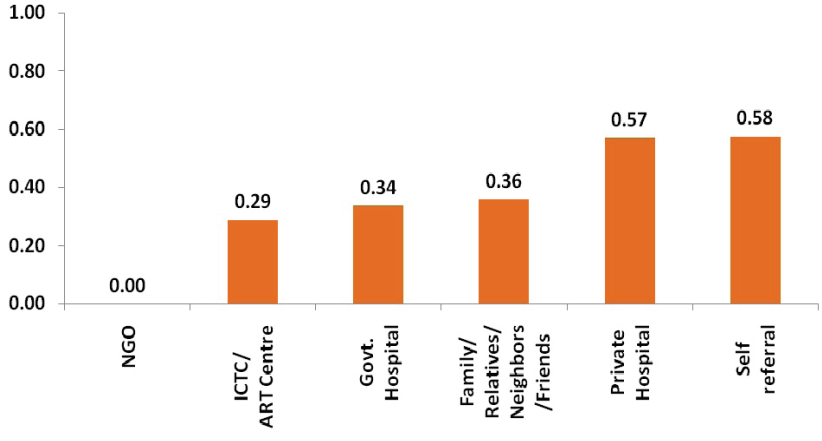
	First		Second		Third		Fourth or more	
	%	N	%	N	%	N	%	N
Karnataka	0.3	11344	0.4	9391	0.3	3201	0.3	756
Bagalkot	0.4	457	0.2	452	1.3	227	0.0	64
Bangalore	0.9	350	1.2	324	1.9	103	0.0	21
Bangalore Rural	0.0	407	0.6	340	0.0	42	0.0	6
Belgaum	0.9	350	0.4	263	0.0	146	2.6	39
Bellary	0.0	504	0.7	431	0.0	220	0.0	45
Bidar	0.3	339	0.0	242	0.0	150	0.0	68
Bijapur	0.0	290	0.3	291	0.0	160	0.0	59
Chamarajanagar	0.7	416	0.6	310	0.0	65	0.0	8
Chikballapur	1.8	491	1.9	260	0.0	42	0.0	3
Chikmagalur	0.2	437	0.3	311	0.0	40	0.0	6
Chitradurga	0.2	406	0.6	308	0.0	76	0.0	10
Dakshina Kannada	0.0	340	0.3	286	0.0	125	0.0	49
Davanagere	0.5	393	0.7	295	0.0	86	3.8	26
Dharwad	0.0	338	0.0	335	0.0	101	0.0	21
Gadag	0.5	395	0.4	271	0.0	116	0.0	17
Gulbarga	0.3	321	0.0	287	0.7	148	0.0	41
Hassan	1.1	375	0.3	342	0.0	67	0.0	14
Haveri	0.4	269	0.0	300	0.0	220	0.0	11
Kodagu	0.0	400	0.3	297	1.3	76	0.0	25
Kolar	0.3	386	0.0	313	0.0	83	0.0	17
Koppal	0.3	353	1.3	302	0.0	115	0.0	20
Mandya	0.0	357	1.0	300	1.4	71	0.0	15
Mysore	0.0	388	0.3	321	0.0	81	0.0	10
Raichur	0.0	264	0.3	326	0.0	165	0.0	44
Ramnagaram	0.0	412	0.0	316	0.0	65	0.0	7
Shimoga	0.2	438	0.7	288	0.0	65	0.0	9
Tumkur	0.0	358	0.6	359	0.0	65	0.0	18
Udupi	0.0	414	0.0	322	1.9	53	0.0	11
Uttara Kannada	0.3	363	0.3	307	0.0	94	0.0	31
Yadgir	0.0	333	0.0	292	0.0	134	0.0	41

5.4. HIV Prevalence among ANC Clinic Attendees by Source of Referral

This variable illuminates the various sources of referral, and helps identify if a specific bias is being introduced in the sample due to specific referrals of HIV-positive cases from any source. The response categories listed in the HSS data form included: self-referral; family/relative/ neighbour/friend; NGO; private hospital (doctor/nurse); government hospital (including ANM/ASHA); and ICTC/ ART centre. Government health care providers include ANM, ASHA, doctors/nurses at PHC, and CHC.

According to source of Referral at State level, HIV Prevalence is more in Private (Doctor/ Nurses) (0.6%), Self Referral (0.6%), Family/Relatives/ Neighbours/ Friends (0.4%), Govt (Including ASHA/ ANM) and ICTC/ART Centre (0.3%) (Figure 14).

Figure 14: HIV Prevalence among ANC Clinic Attendees by Source of Referral, HSS 2014-15.



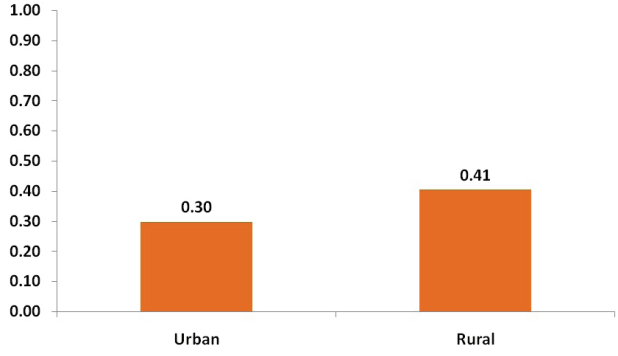
The District wise HIV prevalence among ANC clinic attendees by Source of Referral were shown in the table 15. High prevalence in the Source Referral group of Private (Doctor/ Nurses) was 20% in Belgaum district. Referral from Self, HIV prevalence among ANC clinic attendees was 50% in Bangalore rural. HIV prevalence in the source of referral from Family/Relatives/ Neighbours/ Friends among ANC clinic attendees is varied from 0.3% in Bagalkot, Gadag, Mandhya and Bijapur to 1.55% in Bangalore. High prevalence in the source of Referral from Govt(Including ASHA/ ANM) was seen in Chikballapur (1.8%). And ICTC/ART, HIV Prevalence among ANC Clinic attendees was 100% in Hassan district.

Table 16: HIV Prevalence (%) among ANC Clinic Attendees by Source of Referral and Districts, HSS 2014-15												
	Self Referral		Family/ Relatives/ Neighbors/ Friends		NGO		Private (Doctor/ Nurses)		Govt (includ-ing, ASHA/ ANM)		ICTC / ART Centre	
	%	N	%	N	%	N	%	N	%	N	%	N
Karnataka	0.6	2432	0.4	3345	0.0	5	0.6	175	0.3	18368	0.3	349
Bagalkot	1.2	321	0.3	300			0.0	2	0.2	576		
Bangalore	0.9	212	1.5	479					0.0	107		
Bangalore Rural	50.0	2	0.0	2					0.1	793		
Belgaum	0.0	135	0.0	112			20.0	5	0.7	545		
Bellary	0.7	134	0.0	1					0.2	1064		
Bidar									0.1	799		
Bijapur			0.3	368					0.0	432		
Chamara-janagar	0.0	14							0.6	786		
Chikballapur	0.0	13							1.8	777	0.0	8
Chikmagalur	0.0	16	0.0	6			0.0	35	0.3	736		
Chitradurga			0.0	1					0.4	795	0.0	4
Dakshina Kan-nada	0.6	171	0.0	39			0.0	56	0.0	534		
Davanagere	0.0	4	0.0	52	0.0	3			0.7	740	0.0	1
Dharwad	0.0	32	0.0	357			0.0	9	0.0	62	0.0	326
Gadag	0.0	1	0.3	309					0.4	490		
Gulbarga	4.2	24	0.4	237					0.0	534		
Hassan	0.4	234					0.0	27	0.6	536	100.0	1
Haveri	0.0	147							0.2	651		
Kodagu	0.4	239	0.0	99					0.2	458		
Kolar	0.3	324	0.0	98					0.0	376		
Koppal	0.0	1							0.6	789		
Mandya	0.0	33	0.3	364			0.0	1	0.9	345		
Mysore	0.0	70	0.0	354					0.3	376		
Raichur	0.0	110	0.0	42			0.0	7	0.2	635	0.0	4
Ramnagaram									0.0	800		
Shimoga	0.0	1							0.4	794		
Tumkur	0.0	44	0.0	53			0.0	5	0.3	698		
Udupi	0.9	108	0.0	37			0.0	15	0.0	640		
Uttara Kannada					0.0	1	0.0	6	0.3	789	0.0	1
Yadgir	0.0	42	0.0	35	0.0	1	0.0	7	0.0	711	0.0	4

5.5. HIV Prevalence among ANC Clinic Attendees by Place of Residence

2014-15, records the reported current residence of the respondent as "Urban" or "Rural". If the current place of residence of the respondent was Municipal Corporation, municipal council, or cantonment area, it was classified as 'urban'. Otherwise, it was recorded as 'rural'.

Figure 15: HIV Prevalence among ANC Clinic Attendees by Place of Residence, HSS 2014-15.



At the state level, HIV Prevalence among ANC Clinic attendees by place of residence in Urban was 0.3% and Rural was 0.4%. And the District level HIV prevalence among Urban was 0.0% in Belgaum, Chamarajanagar, Chikmagalur, Dakshina Kannada, Dharwad, Hassan, Kodagu, Raichur, Ramnagaram, Shimoga, Tumkur, Udupi and Yadgir districts to 0.2% in Bellary, Kolar, Koppal, and Uttara Kannada and the 0.3% in Bagalkot, Bidar, Bijapur, Chitradurga, Gadag, Gulbarga, Haveri and Mysore followed by 0.4% in Mandya, 0.5% in Bangalore rural, 0.9% in Davanagere, 1.1% in Bangalore and 1.4% in Chikballapur. On the other hand, the district level HIV prevalence among Rural was high in Chikballapur (1.9%) followed by Koppal (1.1%) and Hassan (1.0%).Other 17 districts ranged from 0.9 in Belgaum to 0.2 in Udupi. The remaining 11 districts had zero prevalence (Table 17).

Table 17: HIV Prevalence among ANC Clinic Attendees by Place of Residence and district, HSS 2014-15

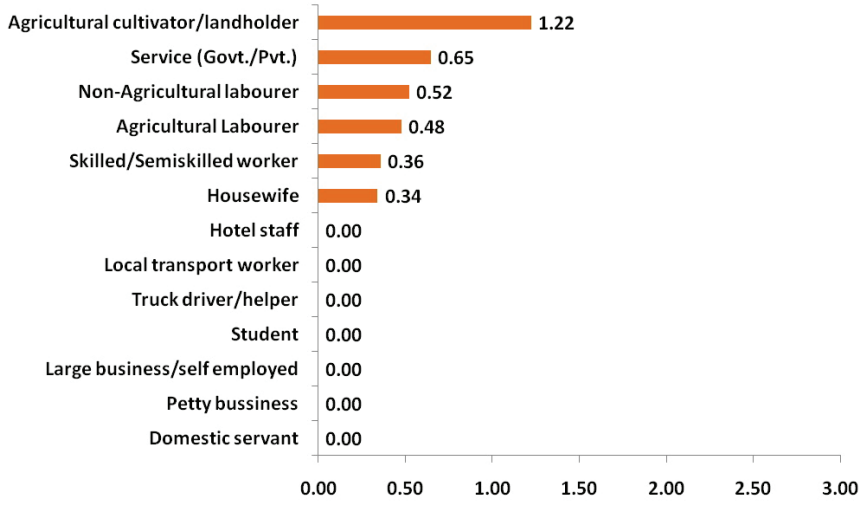
	Urban		Rural	
	%	N	%	N
Karnataka	0.3	10062	0.4	14555
Bagalkot	0.3	335	0.6	863
Bangalore	1.1	783	0.0	14
Bangalore Rural	0.5	387	0.0	398
Belgaum	0.0	234	0.9	561
Bellary	0.2	535	0.3	662
Bidar	0.3	306	0.0	489
Bijapur	0.3	332	0.0	466
Chamarajanagar	0.0	172	0.8	627
Chikballapur	1.4	208	1.9	586

Chikmagalur	0.0	209	0.3	582
Chitradurga	0.3	306	0.4	493
Dakshina Kannada	0.0	183	0.2	615
Davanagere	0.9	336	0.4	464
Dharwad	0.0	386	0.0	404
Gadag	0.3	327	0.4	469
Gulbarga	0.3	378	0.0	411
Hassan	0.0	279	1.0	518
Haveri	0.3	288	0.0	510
Kodagu	0.0	65	0.3	730
Kolar	0.2	493	0.0	306
Koppal	0.2	421	1.1	361
Mandya	0.4	267	0.6	476
Mysore	0.3	336	0.0	464
Raichur	0.0	297	0.2	499
Ramnagaram	0.0	466	0.0	334
Shimoga	0.0	373	0.7	418
Tumkur	0.0	285	0.4	515
Udupi	0.0	158	0.2	642
Uttara Kannada	0.2	427	0.3	369
Yadgir	0.0	490	0.0	309

5.6. HIV Prevalence among ANC Clinic Attendees by Current Occupation of Respondent and District

At the state level, HIV Prevalence among ANC Clinic Attendees by Current Occupation of Respondent were given in the table 17, HIV Prevalence was high in Agricultural Cultivator with 1.2% and followed by Service (Govt/Pvt.) (0.6%), Agricultural Labourer and non-Agricultural Labourer (0.5%), Skilled/Semiskilled worker showed (0.4%), Housewives (0.3%), and finally zero percent in Domestic servant, Petty Business/Small shop, Large Business/ Self employed, Student, Truck Driver/Helper, Local transport worker and Hotel Staff (Figure 16).

Figure 16: HIV Prevalence among ANC Clinic Attendees by Current Occupation of Respondent, HSS 2014-15.



In district level, the prevalence in Agricultural Cultivator was high in Belgaum (1.8%) and zero in 16 districts. High Prevalence in Service(Govt/Pvt.) was seen in Bidar (33.3%), Chikballapur (5.9%) and zero percent in 28 districts. Prevalence in Agricultural Labourer was high in Chikmagalur (1.7%), followed by Koppal (1.2%), and Bagalkot (1.1%), 0.7 % in Bellary, 0.6 in Kodagu and zero percent in 23 districts. Prevalence in Non- Agricultural Labourer was high in Tumkur (6.7%), Uttara Kannada (5.0%), Bellary (1.3%), and Raichur (0.7%) and zero in 26 districts. High prevalence in Skilled/ Semiskilled Worker is shown 0.3% in Dakshina Kannada district and zero percent in 26 districts. HIV prevalence is high among Housewife's in the districts of Chikballapur (1.9%), followed by Bangalore (1.2%), Davanagere (0.7%), Mandya and Hassan (0.6%). The HIV prevalence ranged from 0.5 in Chamarajanagar to 0.1 % in Udupi whereas remaining 7 districts showed zero percent (Table 18).

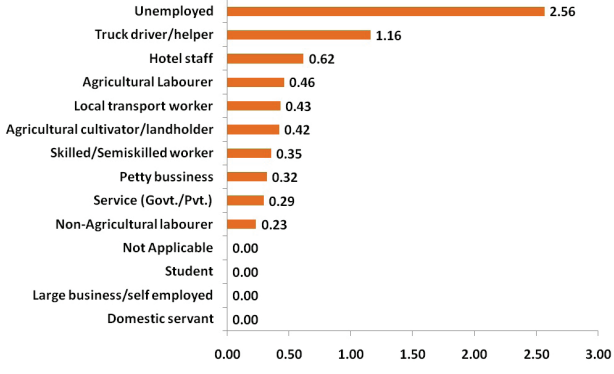
Table 18: HIV Prevalence among ANC Clinic Attendees by Current Occupation of Respondent and district, HSS 2014-15

	Agricultural Labourer		Non-Agricultural Labourer		Domestic Servant		Skilled / Semi-skilled worker		Petty business / small shop		Large Business/ Self employed		Service (Govt./Pvt.)		Student		Truck Driver / helper		Local transport worker		Hotel Staff		Agricultural cultivator		Housewife	
	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N
Karnataka	0.5	2294	0.5	764	0.0	495	0.4	555	0.0	152	0.0	27	0.6	464	0.0	46	0.0	2	0.0	9	0.0	44	1.2	245	0.3	19594
Bagalkot	1.1	261	0.0	88	0.0	14	0.0	41	0.0	24	0.0	6	0.0	16					0.0	1	0.0	4	0.0	14	0.4	727
Bangalore	0.0	2	0.0	26	0.0	1	0.0	2	0.0	2	0.0	1	0.0	20	0.0	1			0.0	3	0.0	1			1.2	739
Bangalore Rural	0.0	3	0.0	21			0.0	9	0.0	3			0.0	3											0.3	756
Belgaum	0.0	20	0.0	7			0.0	3	0.0	1	0.0	1	0.0	7	0.0	2					0.0	1	1.8	165	0.3	591
Bellary	0.7	153	1.3	78	0.0	312	0.0	13	0.0	9	0.0	3	0.0	14					0.0	1	0.0	5	0.0	3	0.2	608
Bidar	0.0	57	0.0	9			0.0	1					33.3	3	0.0	5							0.0	4	0.0	718
Bijapur	0.0	199	0.0	10			0.0	10	0.0	2			0.0	3											0.2	576
Chamara-janagar	0.0	7	0.0	28			100	1			0.0	2	0.0	15	0.0	1									0.5	746
Chikballapur	0.0	70	0.0	6	0.0	3	0.0	38	0.0	6	0.0	3	5.9	34	0.0	1			0.0	2	0.0	6	0.0	2	1.9	628
Chikmagalur	1.7	120	0.0	17	0.0	3	0.0	13	0.0	11	0.0	1	0.0	26	0.0	5					0.0	4	0.0	5	0.0	591
Chitradurga	0.0	39	0.0	6	0.0	4	0.0	4	0.0	7	0.0	2	0.0	5	0.0	5							0.0	17	0.4	711
Dakshina Kannada			0.0	33	0.0	4	0.3	306					0.0	37	0.0	2							0.0	1	0.0	417
Davanagere	0.0	15	0.0	17			0.0	1	0.0	2	0.0	1	0.0	6									0.0	3	0.7	755
Dharwad	0.0	29	0.0	38			0.0	2	0.0	2	0.0	1	0.0	17							0.0	4			0.0	702
Gadag	0.0	52	0.0	14	0.0	1	0.0	5	0.0	5			0.0	23			0.0	1							0.4	699
Gulbarga	0.0	146	0.0	36	0.0	8	0.0	1	0.0	1	0.0	1	0.0	6	0.0	4							0.0	2	0.3	590
Hassan	0.9	115	0.0	13			0.0	9	0.0	2			0.0	20	0.0	4							0.0	1	0.6	633
Haveri	0.0	39	0.0	5			0.0	5	0.0	6	0.0	1	0.0	3					0.0	1					0.1	739
Kodagu	0.6	160	0.0	2	0.0	2	0.0	1	0.0	2			0.0	37	0.0	1					0.0	1	0.0	1	0.2	590
Kolar	0.0	12	0.0	15			0.0	2	0.0	2			0.0	8							0.0	2	0.0	4	0.1	754
Koppal	1.2	247	0.0	29			0.0	7	0.0	10			0.0	9	0.0	2					0.0	1	0.0	5	0.4	481
Mandya	0.0	15	0.0	8	0.0	1	0.0	1					0.0	19	0.0	1					0.0	1			0.6	698
Mysore	0.0	15	0.0	2	0.0	106			0.0	8			0.0	8									0.0	14	0.2	647
Raichur	0.0	312	0.7	134	0.0	15	0.0	22	0.0	11			0.0	17	0.0	2					0.0	3	0.0	2	0.0	282
Ramnagaram	0.0	2	0.0	16			0.0	2	0.0	5	0.0	2	0.0	28			0.0	1			0.0	2			0.0	742
Shimoga	0.0	1	0.0	1					0.0	1			0.0	9							0.0	2			0.4	786
Tumkur	0.0	6	6.7	15	0.0	1	0.0	5	0.0	2			0.0	12	0.0	4			0.0	1	0.0	4			0.1	750
Udupi	0.0	1	0.0	14	0.0	5	0.0	37			0.0	1	0.0	21							0.0	2			0.1	719
Uttara Kannada	0.0	8	5.0	20	0.0	9	0.0	1	0.0	7			0.0	25	0.0	2					0.0	1			0.1	723
Yadgir	0.0	188	0.0	56	0.0	6	0.0	13	0.0	21	0.0	1	0.0	13	0.0	4							0.0	2	0.0	496

5.7. HIV Prevalence among ANC Clinic Attendees by Current Occupation of Spouse and District

At the state level, HIV Prevalence among ANC Clinic Attendees by Current Occupation of Respondent's Spouse are shown in the table 18. HIV Prevalence was high in Unemployed (2.6%) followed by Truck Driver/Helper (1.2%), Hotel staff (0.6%) , Agricultural Labourer (0.5%), Agricultural cultivator (0.4%) and Skilled/ Semiskilled worker respectively, Petty business/ small shop, and Service (Govt/ Pvt) (0.3% respectively), Non-Agricultural Labourer (0.2%) and 0% in the following categories: Students, Large Business/ Self employed, Domestic Servant and never married/ widowed/ divorced/ separated woman (Figure 17).

Figure 17: HIV Prevalence among ANC Clinic Attendees by Current Occupation of Spouse, HSS 2014-15.



At the district level, the Prevalence in Unemployed varied from 0.0% in 12 districts to 14.3% in Davanagere. HIV Prevalence in Truck Driver/Helper 0.0% in 25 districts to 11.8% in Koppal followed by 5.9% in Chamarajanagar District, 5.3% in Hassan, 2.8% in Bangalore and Gadag (2.6%). The HIV prevalence among Hotel staff varied from 0.0% in 26 districts to 12.5% in Mandya followed by 5.6% in Chitradurga and 0.8% in Udupi. HIV Prevalence in Agricultural Labourer, varied from 0.0% in 18 districts to 1.3% in Mandya and Chamarajanagar, followed by 1.2 in Chikballapur. HIV Prevalence among Agricultural cultivator was 0% in 25 districts, and High prevalence in Bellary (2.0%) followed by Shimoga and Belgaum (1.5%). HIV Prevalence in Skilled/ Semiskilled worker is zero in 25 districts to 3.4% in Chikaballapur followed by 1.2% in Bangalore and 1.0% in Raichur. HIV Prevalence among Petty business/ small shop was varied from zero in 26 districts to 3.6% in Bangalore District. HIV Prevalence in Service (Govt/Pvt) varied from zero in 25 districts to 3.5% in Gulbarga District. HIV Prevalence in Non-Agricultural Labourers varied from zero in 17 districts to 5.6% in Chikballapur District. And finally, HIV Prevalence among Domestic Servant, Large Business/ Self employed, Student, Unemployed and never married/ widowed/ divorced/ separated woman were Zero prevalence in all Districts (Table 19).

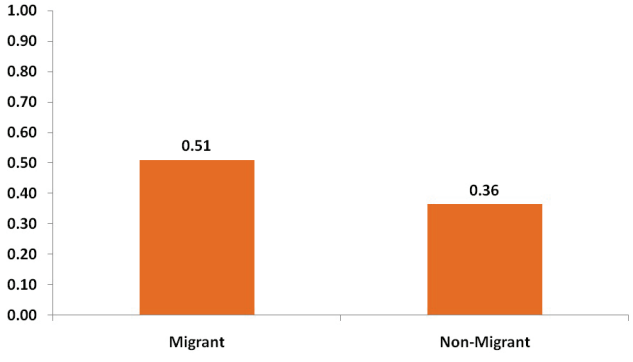
Table 19: HIV Prevalence among ANC Clinic Attendees by Current Occupation of Spouse of the Respondent and district, HSS 2014-15

	Agricultural Labourer		Non-Agricultural Labourer		Domestic Servant		Skilled / Semiskilled worker		Petty business / small shop		Large Business/ Self employed		Service (Govt./Pvt.)		Student		Truck Driver /helper		Not Applicable		Local transport worker		Hotel Staff		Agricultural cultivator		Unemployed	
	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N		
Karnataka	0.5	5243	0.2	6037	0.0	99	0.4	3398	0.3	1892	0.0	541	0.3	2396	0.0	13	1.2	518	0.0	23		2103	0.6	487	0.4	1902	2.6	39
Bagalkot	0.8	360	0.4	233	0.0	5	0.0	171	1.7	120	0.0	30	0.0	91			0.0	16	0.0	3		90	0.0	15	0.0	59	0.0	4
Bangalore	0.0	17	0.7	292	0.0	2	1.2	83	3.6	56	0.0	39	0.0	145			2.8	36				103	0.0	6	0.0	18		
Bangalore Rural	0.0	68	0.6	178			0.0	254	0.0	54	0.0	5	1.1	89			0.0	6				97	0.0	6	0.0	38	0.0	1
Belgaum	0.0	23	0.7	140			0.0	124	0.0	73	0.0	7	0.0	89			0.0	11				52	0.0	6	1.5	273		
Bellary	0.4	282	0.3	338	0.0	2	0.0	232	0.0	40	0.0	24	0.0	74	0.0	2	0.0	48				87	0.0	15	2.0	51	0.0	1
Bidar	0.0	100	0.0	317			0.0	14	0.0	86	0.0	5	0.0	56			0.0	44				102	0.0	28	0.0	43	0.0	4
Bijapur	0.0	232	0.0	27			0.0	188	0.0	85	0.0	1	0.0	74			0.0	15				116	0.0	4	0.0	58		
Chamara-janagar	1.3	156	0.3	322			0.0	78	0.0	32	0.0	23	0.0	59			5.9	17				89	0.0	15	0.0	9		
Chikballapur	1.2	246	5.6	18	0.0	2	3.4	232	0.0	63	0.0	4	1.8	114	0.0	1	0.0	27				33	0.0	23	0.0	37		
Chikmagalur	0.8	266	0.0	203			0.0	44	0.0	50	0.0	26	0.0	54			0.0	15	0.0	1		40	0.0	7	0.0	89		
Chitradurga	0.6	171	0.5	220			0.0	39	0.0	66	0.0	15	0.0	50	0.0	2	0.0	13				79	5.6	18	0.0	127		
Dakshina Kannada	0.0	7	0.0	305			0.4	266	0.0	26	0.0	2	0.0	56			0.0	2	0.0	4		62	0.0	39	0.0	30	0.0	1
Davanagere	0.8	253	0.0	240	0.0	1	0.0	76	1.9	52	0.0	2	0.0	31			0.0	11	0.0	3		36	0.0	11	0.0	77	14.3	7
Dharwad	0.0	290	0.0	318	0.0	3	0.0	24	0.0	26	0.0	15	0.0	67			0.0	10				23	0.0	11	0.0	1	0.0	7
Gadag	0.5	200	0.0	204	0.0	1	0.0	112	0.0	101	0.0	23	1.2	86	0.0	2	2.6	38				21	0.0	12				
Gulbarga	0.0	227	0.0	161			0.0	32	0.0	78	0.0	37	3.5	57	0.0	4	0.0	29	0.0	1		90	0.0	20	0.0	55	0.0	4
Hassan	0.9	227	0.5	184			0.0	91	0.0	33	0.0	36	0.0	70			5.3	19				82	0.0	10	0.0	46		
Haveri	0.0	225	0.0	196			0.9	108	0.0	31	0.0	25	0.0	46			0.0	4	0.0	1		89	0.0	7	0.0	67		
Kodagu	0.7	282	0.0	92	0.0	1	0.0	68	0.0	60	0.0	19	0.0	116			0.0	3	0.0	3		82	0.0	10	0.0	60		
Kolar	0.0	82	0.4	264			0.0	107	0.0	67	0.0	2	0.0	137			0.0	8				91			0.0	41		
Koppal	1.1	283	0.0	154	0.0	79	0.0	55	0.0	66	0.0	6	0.0	46			11.8	17	0.0	4		46	0.0	9	0.0	26		
Mandya	1.3	158	0.0	193			0.0	63	2.9	34	0.0	27	0.0	68			0.0	50				62	12.5	8	0.0	81		
Mysore	0.0	154	0.0	235			0.0	61	0.0	64	0.0	12	0.0	61			0.0	10				74	0.0	5	0.0	124		
Raichur	0.0	327	0.0	114			1.0	105	0.0	41	0.0	11	0.0	73	0.0	1	0.0	2	0.0	2		35	0.0	11	0.0	73	0.0	5
Ramnagaram	0.0	131	0.0	174			0.0	141	0.0	57	0.0	52	0.0	112			0.0	8				71	0.0	17	0.0	37		
Shimoga	0.0	169	0.7	138			0.0	89	0.0	82	0.0	27	0.0	74			0.0	17				61	0.0	11	1.5	130	0.0	2
Tumkur	0.0	49	0.6	167	0.0	2	0.0	141	0.0	64	0.0	12	0.0	60			0.0	11	0.0	1		80	0.0	5	0.5	208		
Udupi	0.0	32	0.0	176			0.0	206	0.0	41	0.0	12	0.0	85			0.0	1				92	0.8	126	0.0	28	0.0	1
Uttara Kannada	0.0	47	0.3	356			0.0	45	0.0	66	0.0	7	0.5	189			0.0	14				54	0.0	15	0.0	2	0.0	1
Yadgir	0.0	179	0.0	78	0.0	1	0.0	149	0.0	178	0.0	35	0.0	67	0.0	1	0.0	16				64	0.0	17	0.0	14	0.0	1

5.8. HIV Prevalence among ANC Clinic Attendees by Migration Status of Spouse

At the state level, HIV Prevalence among ANC Clinic attendees by Migration status of spouse was 0.4% in Non-Migrants and 0.5% in Migrants (Figure 18).

Figure 18: HIV Prevalence among ANC Clinic Attendees by Migration Status of Spouse and District, HSS 2014-15.



At the district level, the HIV Prevalence in Non-Migrant varied from 0.0% in Yadgir, Ramnagar, Dharwad District to 1.7% in Chikballapur District, followed by 1.2% in Bangalore, 0.6% in Belgaum, Chamarajanagar, Davanagere, Hassan, Koppal. All other districts had prevalence less than 0.5%. The District level Prevalence in Migrants varied from 0.0 in 21 districts to 2.0% in Chikballapur (Table 20).

Table 20: HIV Prevalence among ANC Clinic Attendees by Migration Status of Spouse and District, HSS 2014-15

	Migrants		Non-Migrants	
	%	N	%	N
Karnataka	0.5	196	0.4	24423
Bagalkot	0.0	1	0.5	1188
Bangalore	0.0	25	1.2	773
Bangalore Rural	0.0	6	0.3	784
Belgaum	0.0	1	0.6	796
Bellary	0.0	10	0.3	1189
Bidar	0.0	6	0.1	793
Bijapur			0.1	799
Chamarajanagar			0.6	795
Chikballapur	2.0	50	1.7	747
Chikmagalur	0.0	9	0.3	782

Chitradurga			0.4	800
Dakshina Kannada	0.0	12	0.1	784
Davanagere			0.6	797
Dharwad	0.0	5	0.0	783
Gadag			0.4	800
Gulbarga	0.0	2	0.3	791
Hassan	0.0	11	0.6	772
Haveri	0.0	2	0.1	796
Kodagu	0.0	5	0.3	788
Kolar	0.0	5	0.1	792
Koppal	0.0	3	0.6	787
Mandya			0.5	741
Mysore			0.1	799
Raichur	0.0	1	0.1	797
Ramnagaram	0.0	2	0.0	798
Shimoga	0.0	1	0.4	798
Tumkur			0.3	799
Udupi	0.0	4	0.1	796
Uttara Kannada	0.0	26	0.3	768
Yadgir	0.0	9	0.0	791

CHAPTER 6:

HIV Prevalence trend among ANC clinic attendees

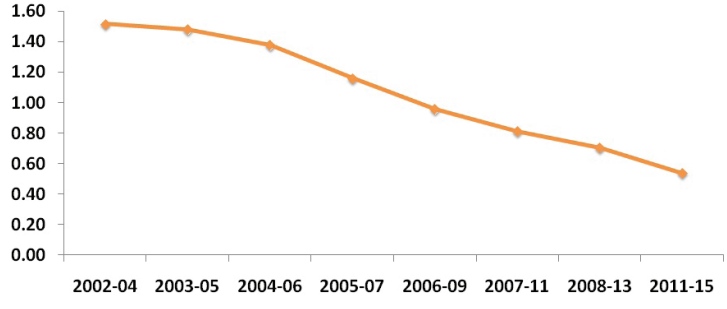
The primary objective of HIV Sentinel Surveillance is to generate data on trends of HIV prevalence among various population groups in the country and state. Over time, HIV Sentinel Surveillance has offered vital clues to newer areas where HIV was emerging, highlighting rising trends in certain Districts or regions.

This has been a critical input to the strategic planning efforts under the National AIDS Control Programme and contributed to shaping the strategies for prevention and control of HIV/AIDS in the state. This chapter presents the trends of HIV prevalence among ANC clinic attendees at state and district levels. Data from the year 2002 has been used for trend analysis. Data from only consistent sites was used for trend analysis as it avoids the effect of addition of new sites on HIV prevalence in subsequent years, and hence provides a better picture of HIV trends in a district. Further, in order to smoothen the sampling variations in HIV prevalence due to small sample size at sentinel site level, a three-year moving average was calculated at state/ district levels and trends have been analysed using this data. All the invalid sites i.e. sites where sample size was less than 75% (300) of the target sample size of 400, were excluded from trend analysis for that year.

Though there was a clear declining trend seen in Karnataka, within the state, there are variations in HIV prevalence among the districts. District level information on HIV is essential for planning district strategies in HIV prevention and control. District wise trend analysis was performed on surveillance data collected during the year 2002-2015 using moving average technique.

6.1 HIV Prevalence trend at State Level

Figure 19: Karnataka



6.2 HIV Prevalence trend at district level

Figure 20: Bagalkot

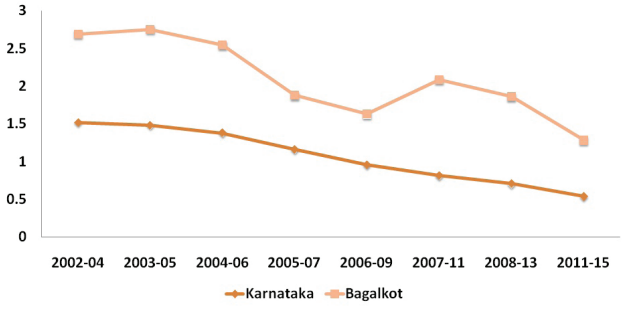


Figure 21: Bangalore Rural

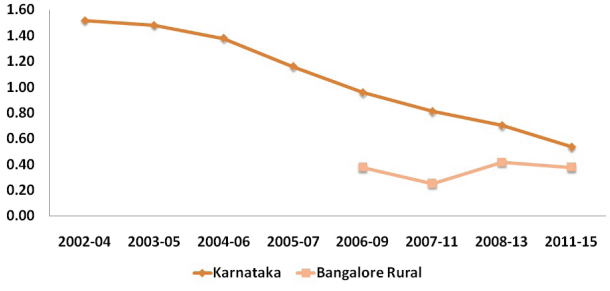


Figure 22: Belgaum

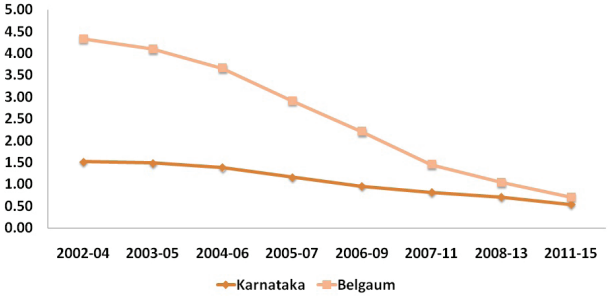


Figure 23: Bellary

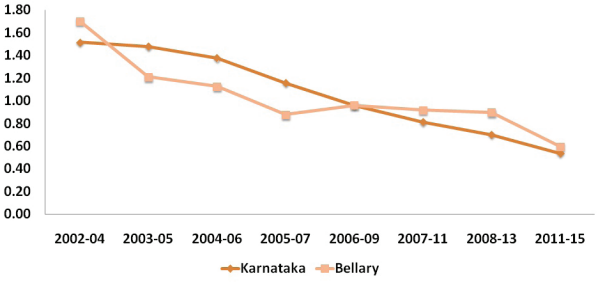


Figure 24: Chamrajnagar

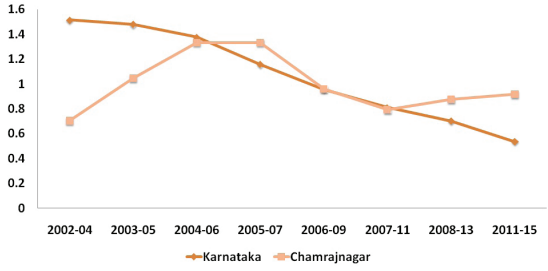


Figure 25: Uttara Kannada

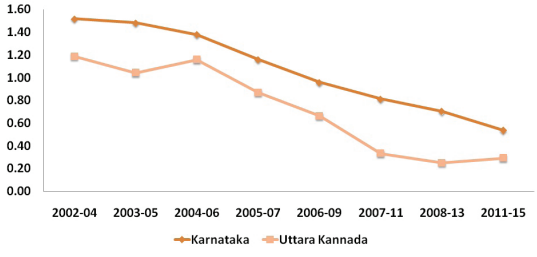


Figure 26: Bijapur

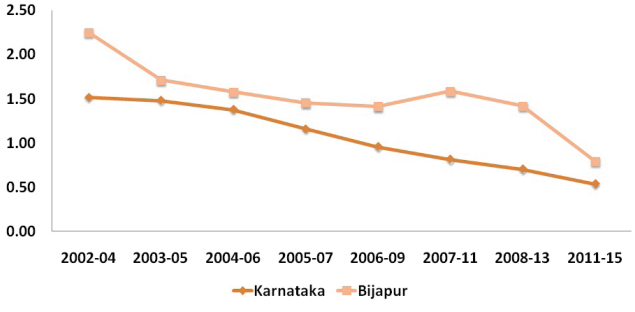


Figure 27: Bidar

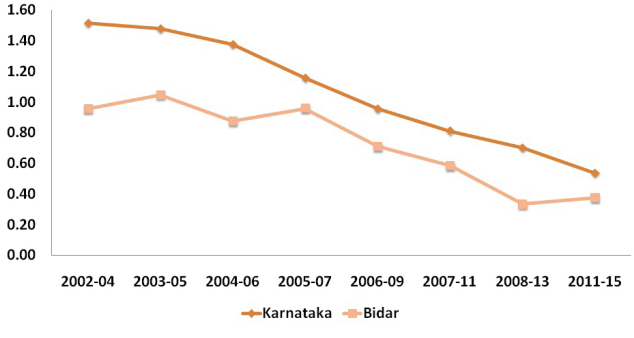


Figure 28: Bangalore

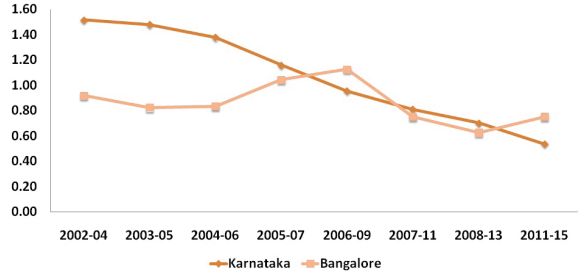


Figure 29: Chikmagalur

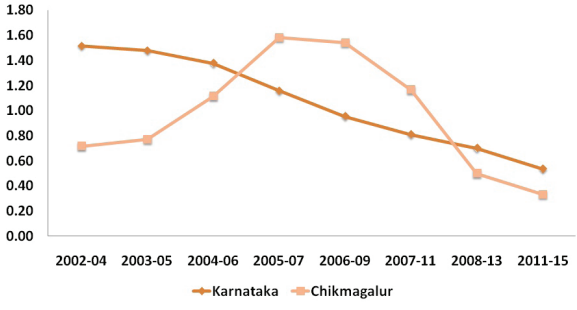


Figure 30: Mandya

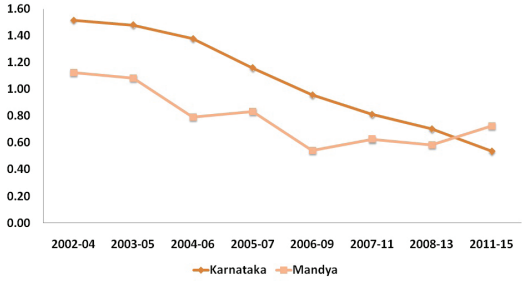


Figure 31: Dakshina Kannada

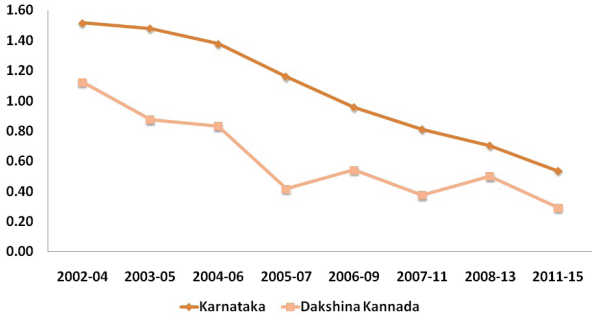


Figure 32: Davangere

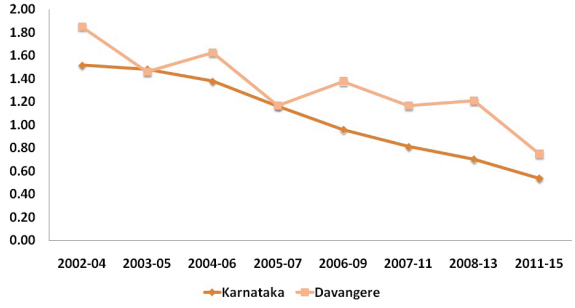


Figure 33: Dharwad

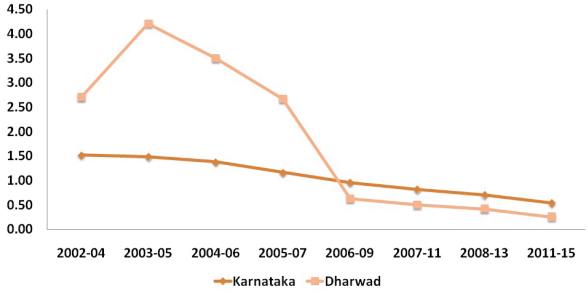


Figure 34: Gadag

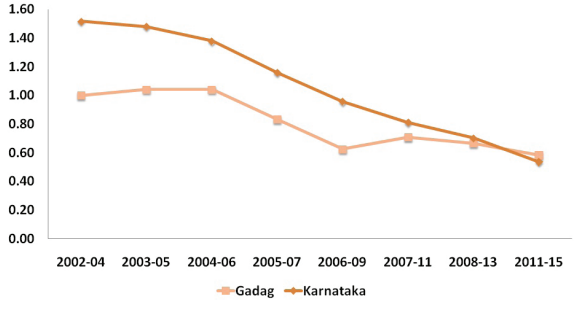


Figure 35: Gulbarga

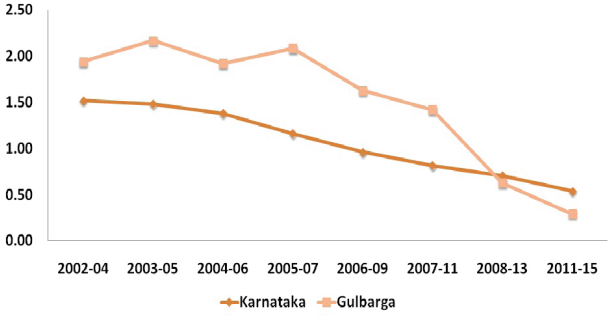


Figure 36: Hassan

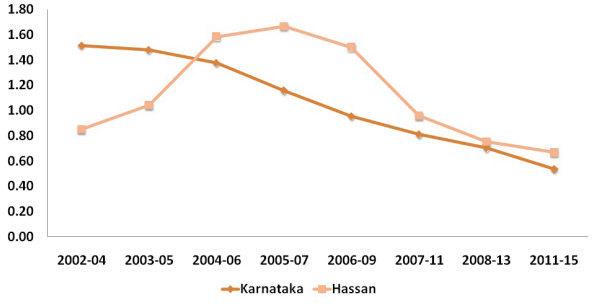


Figure 37: Haveri

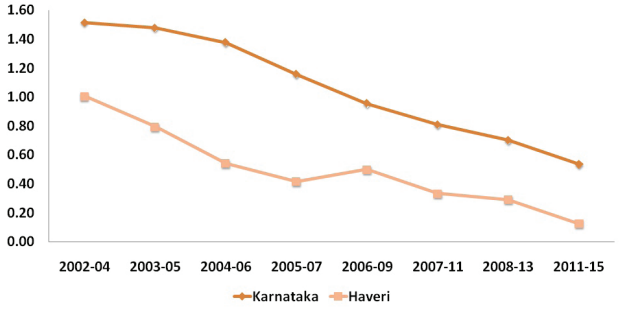


Figure 38: Kodagu

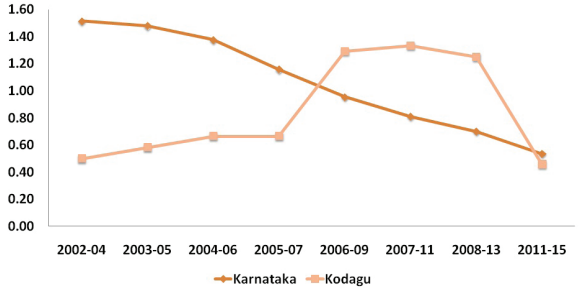


Figure 39: Kolar

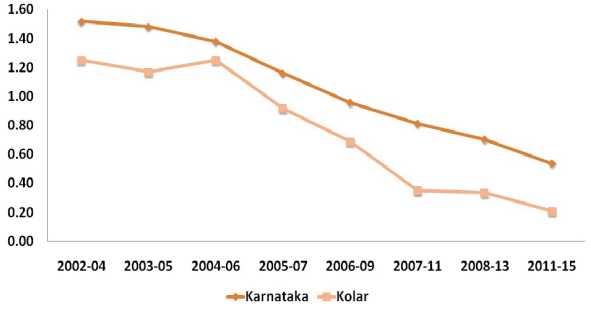


Figure 40: Koppal

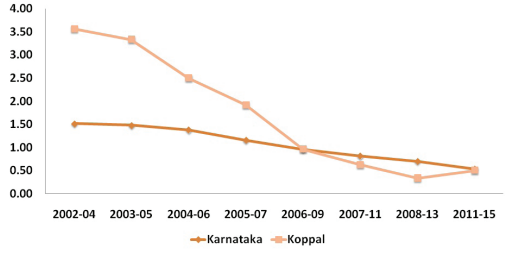


Figure 41: Chikballapur

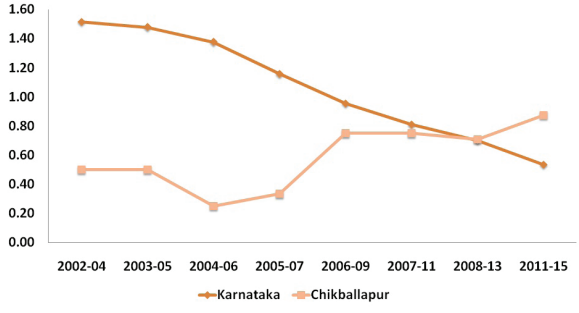


Figure 42: Mysore

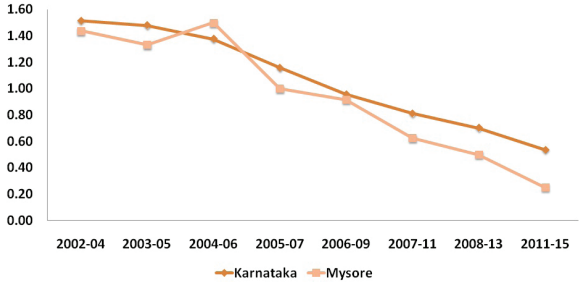


Figure 43: Raichur

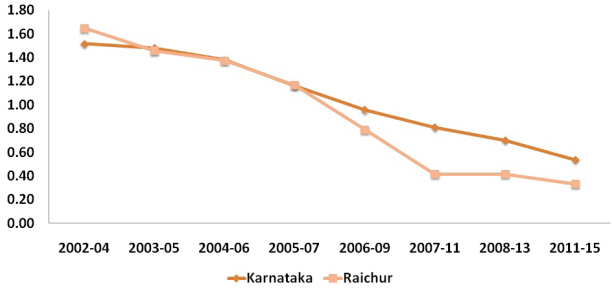


Figure 44: Ramanagaram

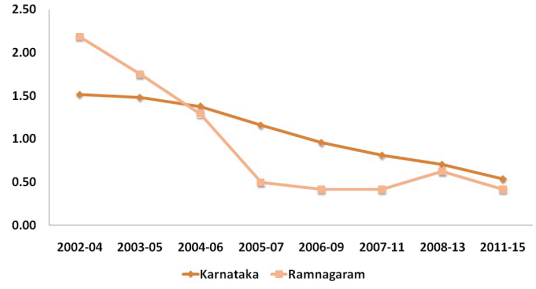


Figure 45: Shimoga

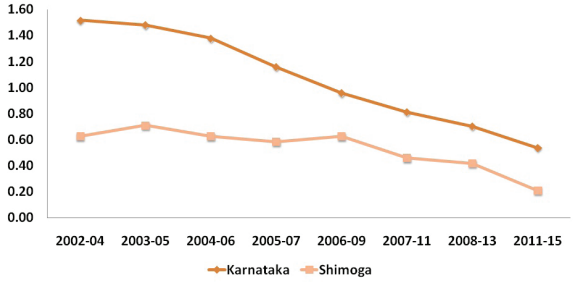


Figure 46: Tumkur

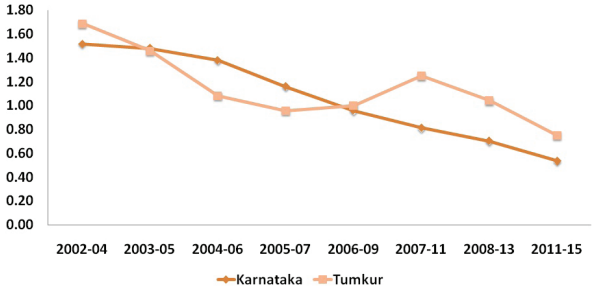


Figure 47: Udupi

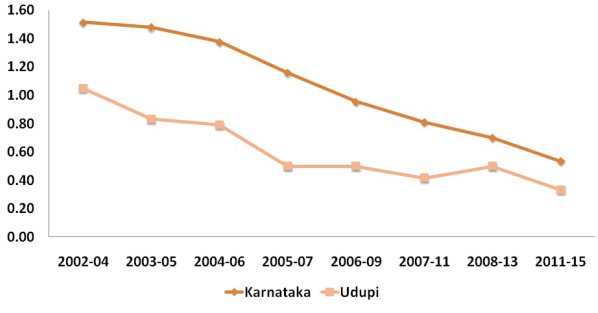


Figure 48: Chitradurga

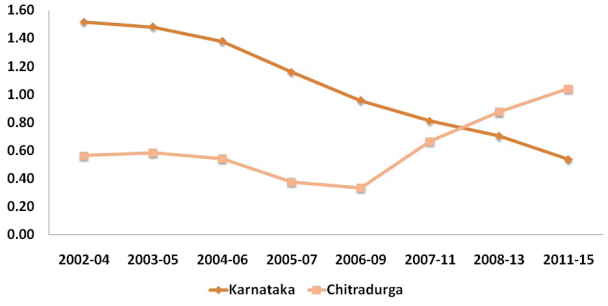
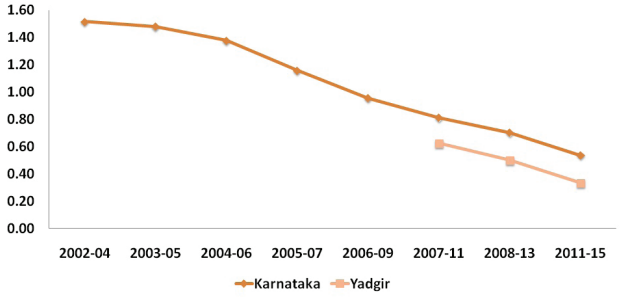


Figure 49: Yadgir



CHAPTER 7:
Summary

- The total sample of ANC analyzed was 24710 across 30 districts in Karnataka. The majority of the respondents were seen in the age group 15-24 years (63.8%).
- HIV Prevalence among the age group of 15-24 was 0.28% and the same was found as 0.51% in 25-34 years age group.
- The proportion of illiterate ANC was 14.8% at the state level and the HIV prevalence among them was 0.6%, which was seen as the highest.
- The proportion of illiterate varied from 3.1% in Dakshina Kannada to 47.7% in Yadgir District.
- At the state level, 45.9% of the respondents reported being pregnant for the first time
- The state level HIV prevalence among ANC clinic attendees in primi-gravida was around 0.3%, second gravida was 0.4%, third gravida was 0.3% and in fourth gravida it was 0.3%.
- At the district level, the primi-gravida varied between 33.0% in Raichur to 61.7% in Chikballapur.
- Government hospital/ANM/ASHA was identified as the major source of referral to ANC clinics, which accounting for 74.4 % of respondents.
- Referral from government service providers was higher in the districts of Ramnagaram (100 %) and Bidar (100 %), Shimoga and Koppal (99.9% respectively).
- Highest HIV prevalence (around 0.6%) was seen in both the people referred by Private (Doctor/Nurses) and self referral.
- At the state level, 59.1 % of respondents reported to be currently residing in rural areas.
- The HIV Prevalence in Urban and Rural was calculated as 0.3% and 0.4% respectively.
- At the state level, the majority of the respondents (79.4 %) were housewives.
- More than 1 % of HIV prevalence was seen among the pregnant mothers whose occupations were reported as Agriculture cultivator followed by Service (Govt/ Private) (0.65%), Agricultural Labourer and Non-Agricultural Labourer (0.52% respectively).
- At the state level, accounting for 24.5 % was Non-Agricultural Labourer. HIV prevalence among them was calculated as 0.2%.
- HIV Prevalence was high among the pregnant mothers whose current occupation of spouse were reported as Unemployed with 2.6% and followed by Truck driver/ Helper with 1.2%.
- At the state level, 0.8% of respondents reported that their spouses were migrants. The highest proportion of migrant spouses observed in Chikballapur (6.3%).
- HIV Prevalence among migrant was 0.51 % and among non-migrants was 0.36%. High HIV prevalence was seen among migrants from Chikballapur district with 2.0%.

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