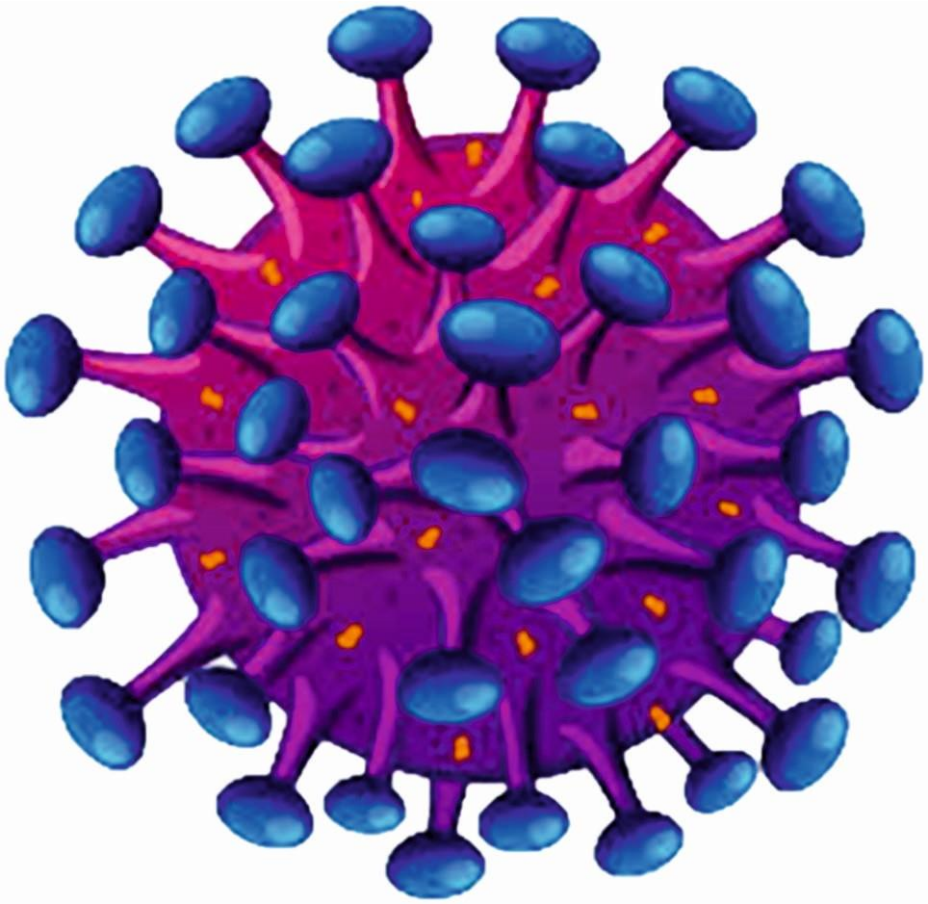
HIV SENTINEL SURVEILLANCE (ANC)

Karnataka State Report



2018-19

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HIV

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Karnataka State Report

2018-19

ICMR-NATIONAL INSTITUTE OF EPIDEMIOLOGY
Chennai

NATIONAL AIDS CONTROL ORGANISATION
New Delhi

KARNATAKA STATE AIDS PREVENTION SOCIETY
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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 16th round of surveillance, in conjunction with the past 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. Shobini Rajan, Assistant 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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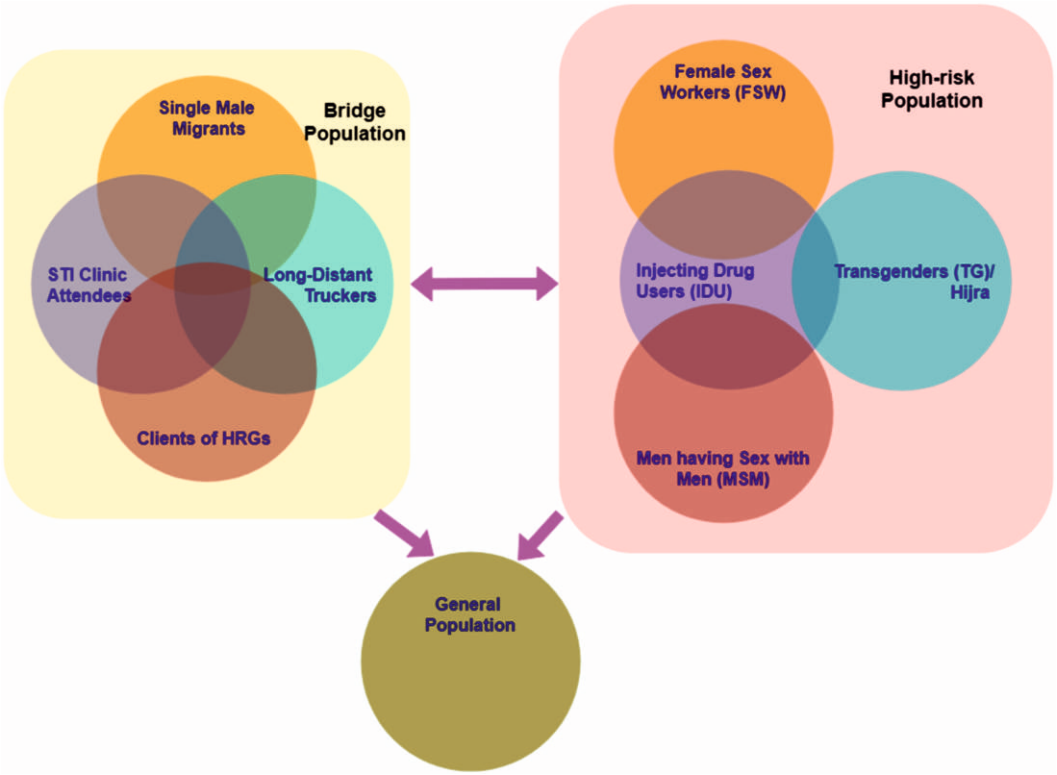
CHAPTER 1.

INTRODUCTION: HIV AND HSS

Acquired immune deficiency syndrome or acquired immunodeficiency syndrome (AIDS), caused by the human immunodeficiency virus (HIV), progressively reduces the effectiveness of the immune system, leaving the infected susceptible to opportunistic infections. HIV was first reported in USA in 1981, following which the infection spread globally. Three decades since its inception, the epidemic still continues to be a global public health threat and interventions at various levels are ongoing for HIV management. Unprotected sex, sharing used needles or syringes and transfusion of untested blood increases the risks of HIV infection.

The first HIV case in India was reported in 1986 in Chennai, followed by a rapid spread across the nation within a decade. Based on their risk of disease transmission and HIV prevalence levels, the population in India is divided into 3 categories high-risk groups with - high prevalence, bridge populations with moderate prevalence and general population low prevalence.

Figure 1: HIV Transmission Dynamics among HIV Sub-population groups

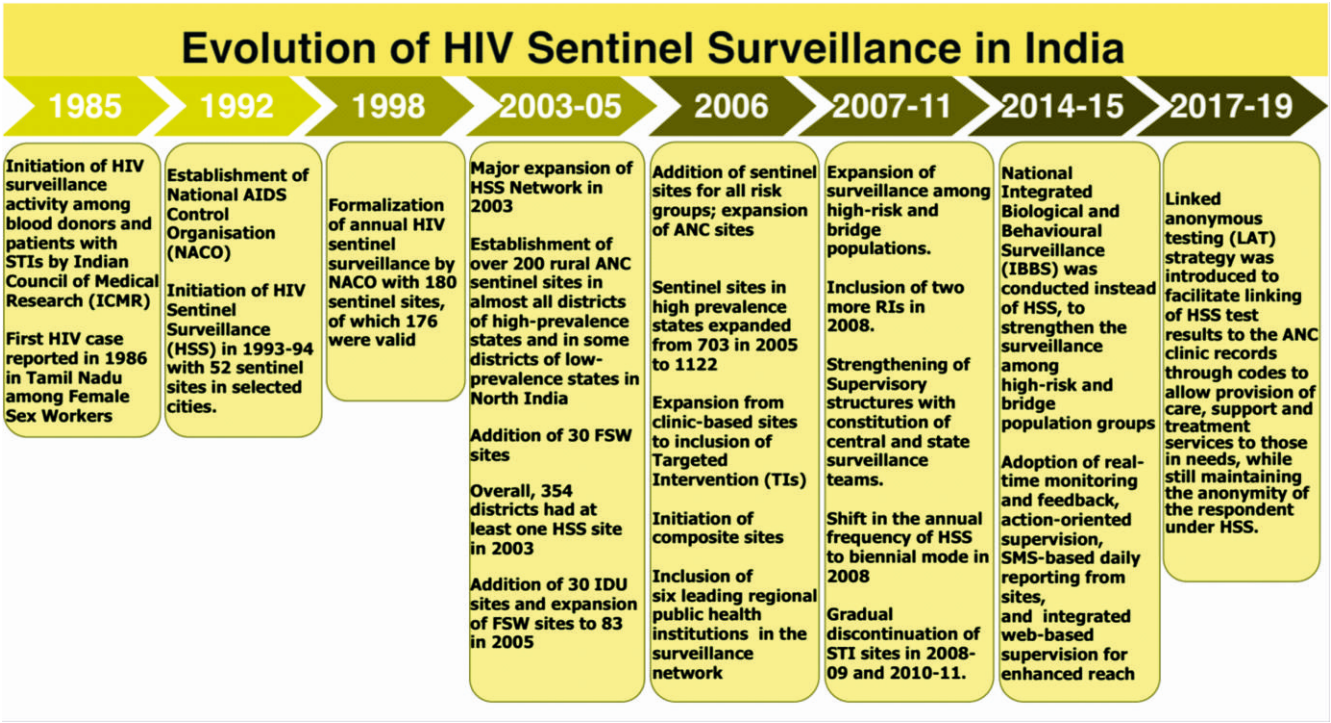


HIV in India is highly concentrated among the high-risk population groups. Unprotected sex with female sex workers (FSW), injecting drug users (IDU), and unprotected anal sex between men are the three primary routes of HIV transmission in India. The bridge population, generally the clients or partners of high-risk population, transmit the disease to the general population. Hence measures to reduce the HIV prevalence levels in high-risk population has been observed as an effective method to reduce the transmission risks.

1.1 HIV Sentinel Surveillance (HSS)

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.

Figure 2: Evolution of HIV sentinel surveillance in India



The HIV sentinel surveillance (HSS) in India was initiated in 1985 among the blood donors and patients with STIs by the Indian Council of Medical Research (ICMR). It is one of the largest HSS systems in the world which helps to understand the dynamics of the HIV epidemic and monitor the trends among different population groups and geographical areas. It provides inputs to the programme for strengthening prevention and control activities. The sentinel sites have been scaled up in a phased manner from 176 in 1998 (including 92 ANC sites) to 1359 in 2010-11 (including 696 ANC sites). HSS 2019 was implemented at 776 ANC sites. In continuation, the 16th round of HIV Sentinel Surveillance (HSS) among antenatal care (ANC) clinic attendees was implemented during year 2019 at 833 sites across 35 States/UTs and 642 districts (out of total of 727 districts). This is highest in various rounds of HSS under NACP till now.

Figure 3: Objectives and Application of HIV Sentinel Surveillance

CHAPTER 2

HSS - METHODOLOGY AND IMPLEMENTATION

2.1 Implementation Structure of HIV Sentinel Surveillance in India

HIV sentinel surveillance has a robust structure for planning, implementation, and review. It follows a four-tier supervisory structure at national, regional, state, and district levels.

National level Organizations and Institutes act as Nodal Agencies while the 8 regional institutes provide technical support to the State AIDS Control Societies (SACS) for all HSS activities. SACS is primarily responsible for implementation of HSS in their respective states with the support of functional district AIDS Prevention and Control Units (DAPCUs), for coordination of HSS activities at the sentinel sites and the associated testing labs. The entire HSS structure is involved the assessment of HSS implementation plans and review of the outcomes of each round.

Figure 4: Implementation Structure of HSS

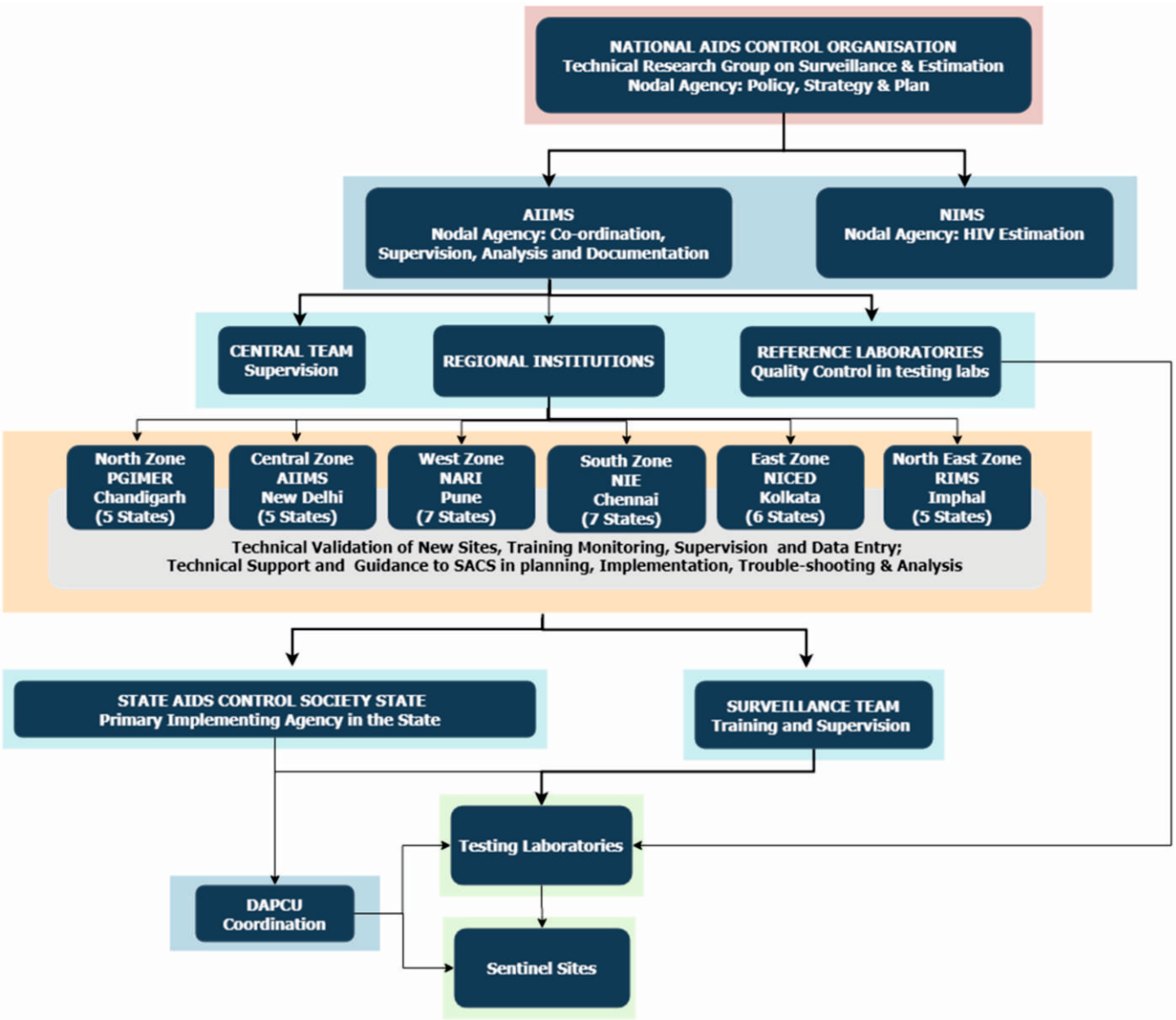


Table 1: Regional Institutes and their States Covered

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

2.2 Initiatives during HSS 2018-19:

In response to key issues identified in the implementation of HSS during the previous rounds as well as to improve the quality and promptness of the surveillance, several new initiatives were implemented in the 16th round, as part of continuous quality improvement.

SACS checklist for preparatory activities:

- Developed to monitor the planning process for HSS in each state (Annex 3).
- All preparatory activities were broken into specific tasks with clear timelines and all 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:

- 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 2018-19:

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 to 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 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 2018-19 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 2018-19.

Laboratory system:

- The laboratory system was strengthened by limiting the sample testing to designated SRLs.
- introduction of web based reporting through the SIMS application ensured real-time monitoring of the quality of blood specimens and laboratory processes
- Quality assurance aspects of sample testing under HSS were standardized
- Responses in case of discordant test results between testing lab and reference lab were streamlined through the SIMS application.

Supervisory mechanisms for HSS 2018-19:

- 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 2018-19.
- 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.
- Data were supervised by data managers at RIs to monitor the quality of data collection and transportation using the SIMS module.
- 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:

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

2.3 Methodology of HSS at ANC Sentinel Sites:

The methodology for the 2019 round of HSS at ANC clinic attendees remained as same as the earlier round. The complete methodology may be found in the HIV Sentinel Surveillance Operational Guidelines available on the website of the National AIDS Control Organisation (NACO).

Figure 5: HSS Methodology

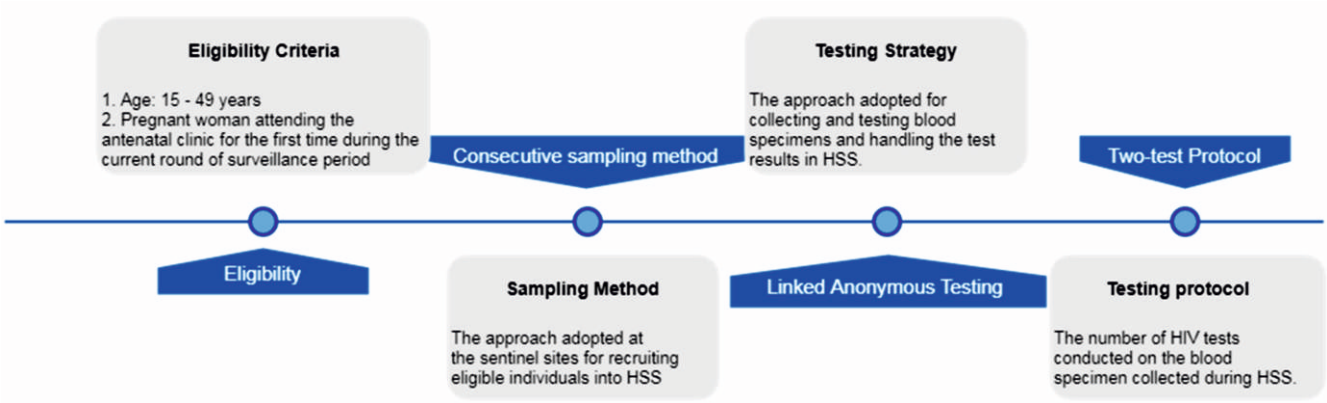


Table 2: Summary of HSS Methodology at ANC Sentinel Sites

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	Linked anonymous testing
Blood specimen	Serum collected through venous blood specimen
Testing protocol	Two-test

Key elements of the HSS methodology:

- In HSS among pregnant women, recruitment of respondents is conducted biennially for three months between January to March at selected ANC sentinel sites, across the nation.
- Because of the low HIV prevalence in India, the classical survey method of sample size calculation gives a large sample size. Owing to the practical difficulty in data and sample collection from such a large sample size through facility-based surveillance on regular basis, a sample size of 400 for surveillance among ANC attendees has been fixed.
- All eligible respondents are enrolled until the sample size of 400 in each sentinel site is reached or until the end of the surveillance period, whichever is earlier.
- Eligibility: All pregnant women eligible under the above inclusion criteria are included in the survey irrespective of the date of antenatal registration, known HIV positivity status, testing status under PPTCT programme or participation in the previous rounds of HSS.
- Inclusion Criteria: i. Age 15-49 years; ii. Pregnant woman attending the antenatal clinic for the first time during the current round of surveillance period
- Exclusion Criteria: i. Pregnant women not in the age group of 15-49 years; ii. Pregnant woman attending the antenatal clinic for the second or more time during the current round of surveillance period
- Sampling method, testing strategy and test protocol are standard components of any surveillance. Consecutive sampling method, linked anonymous testing strategy and two-test protocol are followed in HSS among pregnant women.

Table 3 : Scale up of No. of Sentinel Sites in Karnataka, 2003-2019

Site Type	2003	2004	2005	2006	2007	2009	2011	2013	2015	2017	2019
ANC	52	63	63	63	63	63	72	72	72	71	71
FSW	1	1	-	11	10	28	27	-	-	24	24
MSM	2	2	-	2	2	17	17	-	-	15	15
IDU	1	1	-	2	2	2	2	-	-	0	0
Truckers	-	-	-	-	-	-	2	-	-	2	2
Migrants	-	-	-	-	-	-	3	-	-	2	2
Transgender	-	-	-	-	-	-	2	-	-	1	1
STD	11	11	-	11	11	-	-	-	-	0	0
Tuberculosis	-	-	-	1	-	-	-	-	-	-	-

2.4 Information Collected under HSS at ANC Sentinel Sites

Information on 15 variables pertaining to the respondents' socio-demographic characteristics, HIV testing and management was collected. The data collected during the surveillance is robust and gives an insight on the socio-demographics and vulnerabilities of the respondents. The data helps the program managers and policy makers to identify of specific characteristics associated with higher risk of acquiring HIV infection. Thus the data has guided the HIV intervention program in responding to the epidemic effectively.

Figure 6: Recruitment process of ANC attendees at ANC Sentinel Sites for HSS

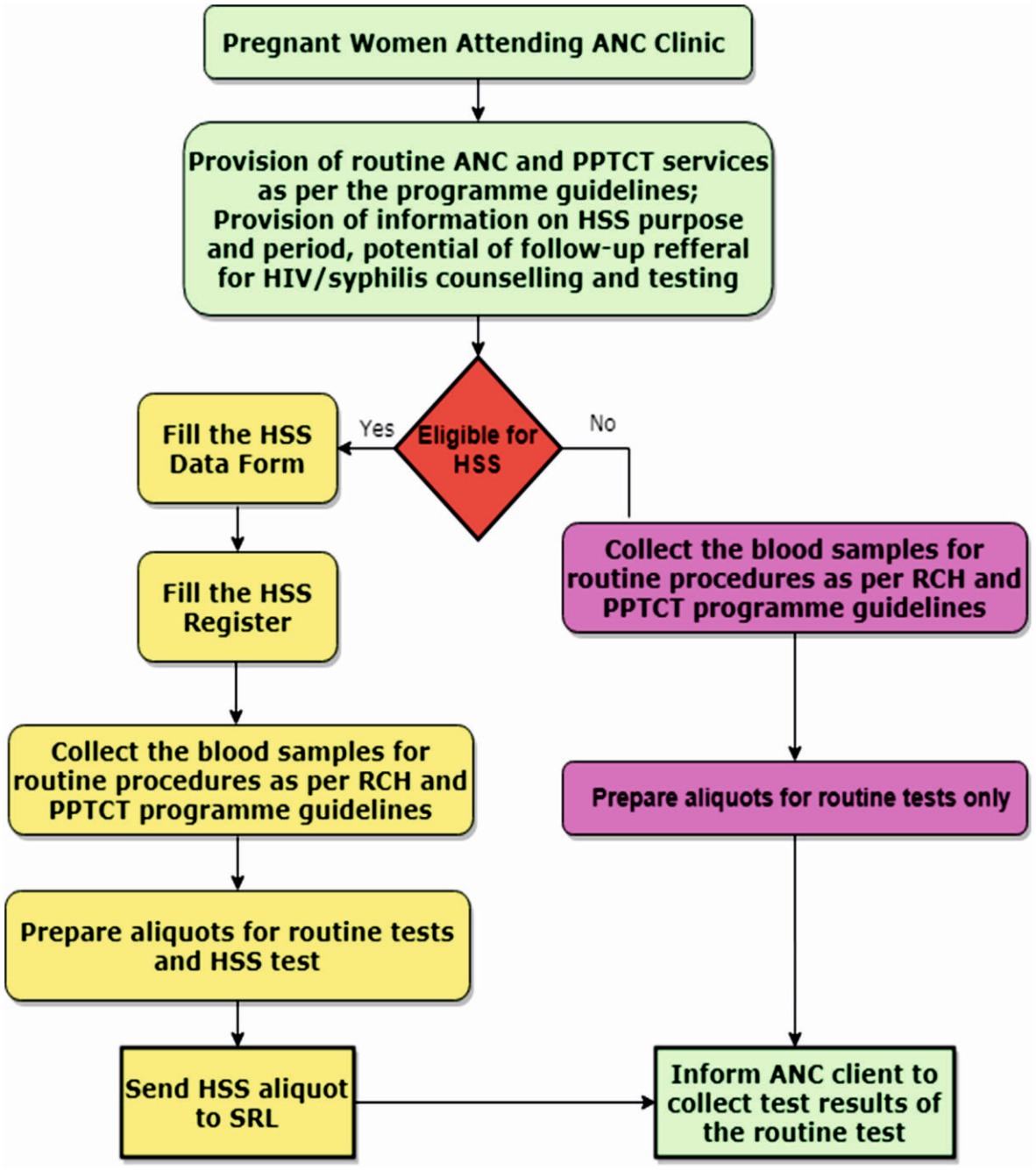
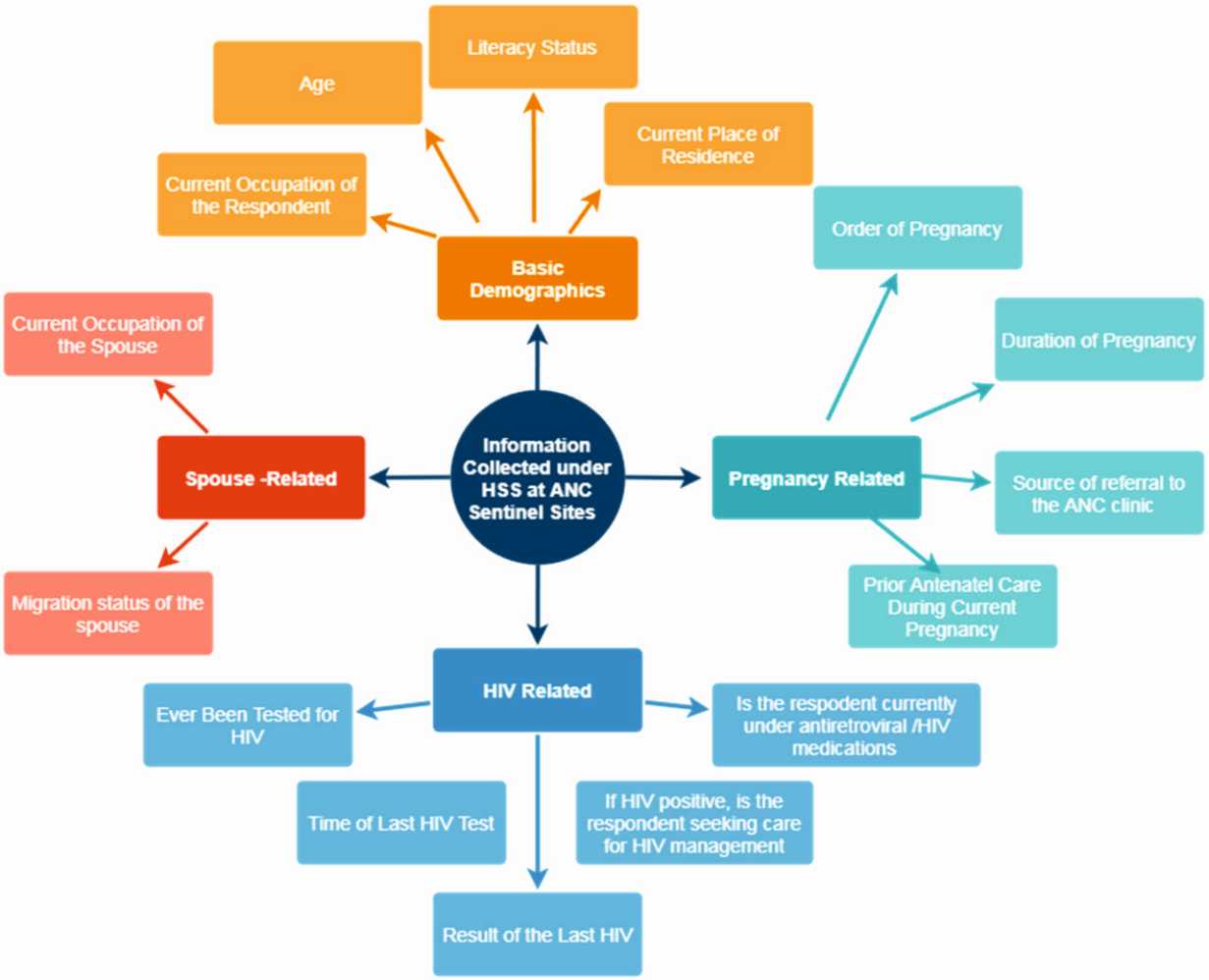


Figure 7 : Information Collected under HSS at ANC Sentinel Sites

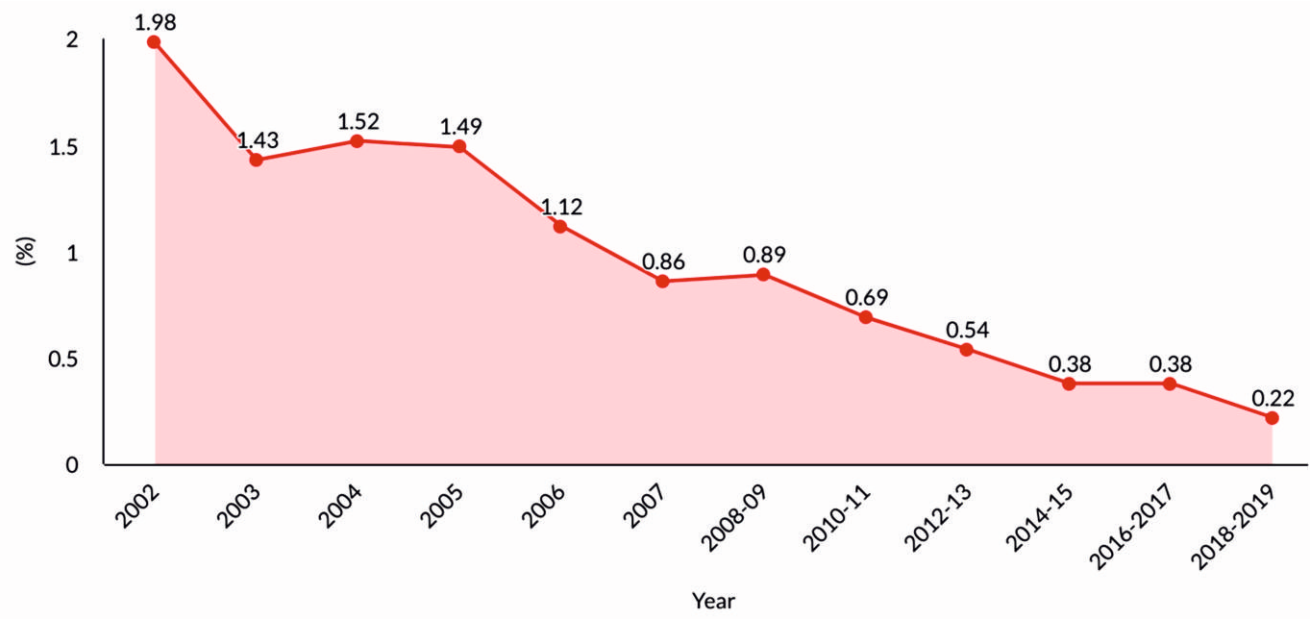


CHAPTER 3

PROFILE OF ANC ATTENDEES IN KARNATAKA

Karnataka, situated at South-West India, shares its boundary with Arabian Sea to the west, Goa to the northwest, Maharashtra to the north, Telangana to the northeast, Andhra Pradesh to the east, Tamil Nadu to the southeast, and Kerala to the south. Karnataka has 30 districts with a total area of 191,976sq. km and a population of 61.13 million in 2011. The first HIV case in Karnataka was reported in 1988 in Belgaum and was considered as one of the HIV high prevalent states in India, with heterosexual transmission being the predominant mode of HIV transmission. The pregnant women who attend the ANC clinics are considered proxy for general population and serve as a key indicator of the adult HIV prevalence. Karnataka has pioneered various programmes to bring down the HIV prevalence in the state. As a result, HIV prevalence among pregnant women which was 1.98 % in 2002, has gradually declined to 0.22% in 2019.

Figure 8: HIV Prevalence Trend in Karnataka among ANC Attendees, 2002-19



The section presents findings form 2019 round of sentinel surveillance among the antenatal clinic attendees in Karnataka. First, the distribution of the respondents by their background characteristics has been presented by followed by HIV and Syphilis sero-positivity. 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.

Table 4: Distribution of the respondents by their background characteristics

Variables	Karnataka (N=24800)	
Age	Number	%
15-24	14927	60.2
25-34	9436	38.0
35-44	436	1.8
45-49	1	0.0
Literacy Status		
Illiterate	2234	9.0
Literate Up to Std 5	2090	8.4
Std 6 to Std 10	12541	50.6
Std 11 to Graduation	7233	29.2
Post-Graduation	690	2.8
Order of current pregnancy		
First	10805	43.6
Second	9475	38.2
Third	3487	14.1
Fourth or more	1024	4.1
Duration of current pregnancy		
First trimester	5828	23.5
Second trimester	8412	33.9
Third trimester	10518	42.4
Received ANC service during current pregnancy		
Yes	20230	81.6
No	4537	18.3
Source of referral to the ANC clinic		
Self-Referral	3626	14.6
Family/ Relatives/ Neighbours/ Friends	5279	21.3
NGO	18	0.1
Private Hospital (Doctor/ Nurses)	94	0.4
Govt. Hospital (including, ASHA/ ANM)	15764	63.6
ICTC / ART Centre	2	0.0
Current place of residence		
Urban	9457	38.1
Rural	15243	61.5
Current occupation of the respondent		
1. Agricultural Labourer	1882	7.6
2. Non-Agricultural Labourer	802	3.2
3. Domestic Servant	542	2.2
4. Skilled / Semi-Skilled Worker	360	1.5
5. Petty Business / Small Shop Owner	95	0.4
6. Large Business/Self- Employed	13	0.1
7. Service (Government/Private)	565	2.3
8. Student	44	0.2
9. Hotel Staff	13	0.1
10. Truck driver/Helper		
11. Local transport worker (auto/taxi driver, hand cart pullers, rickshaw pullers etc)	2	0.0
12. Agricultural Cultivator / Landholder	489	2.0
13. Housewife	19988	80.6
Current occupation of the spouse		

1. Agricultural Labourer	4149	16.7
2. Non-Agricultural Labourer	6627	26.7
3. Domestic Servant	64	0.3
4. Skilled / Semi-skilled Worker	3269	13.2
5. Petty business / small shop	1920	7.7
6. Large Business/Self employed	522	2.1
7. Service (Govt./Pvt.)	3078	12.4
8. Student	6	0.0
9. Hotel staff	487	2.0
10. Truck driver/Helper	503	2.0
11. Local transport worker (auto/taxi driver, hand cart pullers, rickshaw pullers etc)	2280	9.2
12. Agricultural cultivator / landholder	1844	7.4
13. Unemployed	18	0.1
99.Not Applicable (For Never married/widows/Divorced/Separated)	31	0.1
Spouse resides alone in another place/town from wife for work for longer than 6 months		
Yes	506	2.0
No	23873	96.3
Not Applicable (For Never married/Widows/Divorced/Separated)	30	0.1
Ever Been tested for HIV		
Yes	16425	66.2
No	8374	33.8
If ever tested HIV, when was the last test taken?		
Tested during current pregnancy	11971	48.3
Consented today		
Tested before current pregnancy	4453	18.0
NA (For never tested)	8374	33.8
Result of respondent's last HIV test		
Positive	29	0.1
Negative	16304	65.7
Did not collect the last result	15	0.1
No response	77	0.3
NA (For never tested/Consented today)	8374	33.8
If previous HIV test positive, taking ART medications		
Yes	26	0.1
No	3	0.0
NA (For never tested or Not positive when last tested/Consented today)	24770	99.9
HIV		
Negative	24746	99.8
Positive	54	0.22
Syphilis		
Negative	24787	99.9
Positive	13	0.05

CHAPTER 4

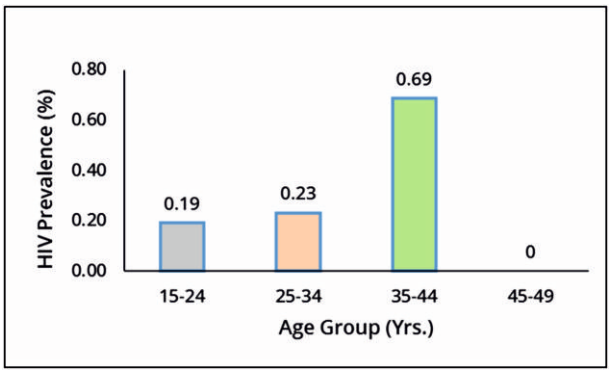
DISTRIBUTION AND HIV PREVALENCE BY SOCIO-DEMOGRAPHIC VARIABLES

The correlation between respondent's background characteristics and HIV prevalence has been presented.

4.1 Distribution and HIV Prevalence by Age Group:

Figure 9: Percentage (%) Distribution of respondents by age group

Figure 10: HIV Prevalence among ANC Clinic Attendees by Age



Age of the respondents ranged from 15 to 44 years with a median age of 24 years. About two-thirds (60.2%) of the respondents were aged from 15 to 24 years and about one-third (38.0%) were in the age group of 25-34 years. The HIV prevalence among the former was 0.19% and the later was 0.23%. While only 1.8% respondents belonged to the age group of 35-44 years, HIV prevalence among them was 0.69%. None of the respondents belonged to the age group of 45-49 years

4.2 Distribution and HIV Prevalence by Literacy Status

Figure 11: Percent Distribution of respondents by educational status

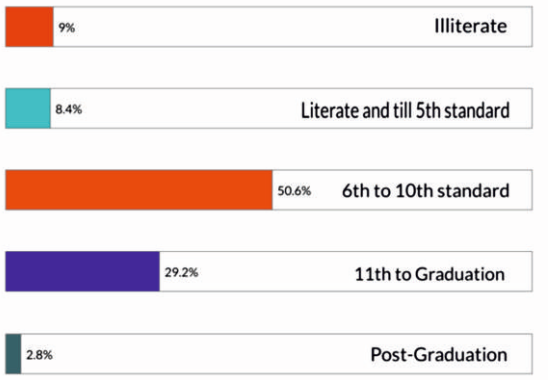
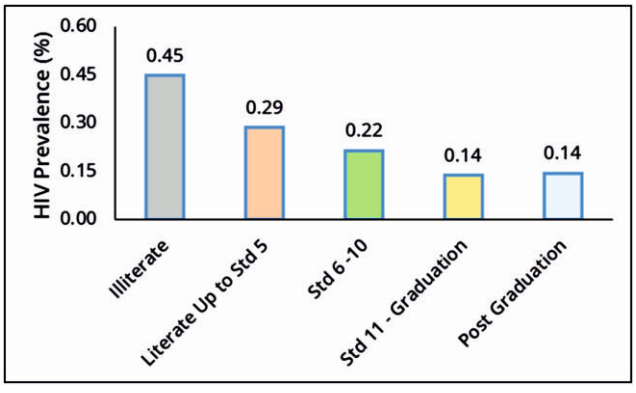


Figure 12: HIV Prevalence (%) among ANC Clinic Attendees by Literacy Status



While about half (50.6%) had secondary level education, about 29.2% of the respondents had higher secondary or undergraduate level of education. The HIV prevalence among the former was 0.22% and the later was 0.14%. While about one-tenth (9.0%) were illiterates, 8.4% were educated up to primary levels, and only 2.8% were post-graduates. The HIV prevalence among them was 0.45%, 0.29% and 0.14% respectively. Predominantly, higher the standard of education level, lower was the HIV prevalence.

4.3 Distribution and HIV Prevalence by Order of Pregnancy

Figure 13: Percent Distribution of respondents by order of pregnancy

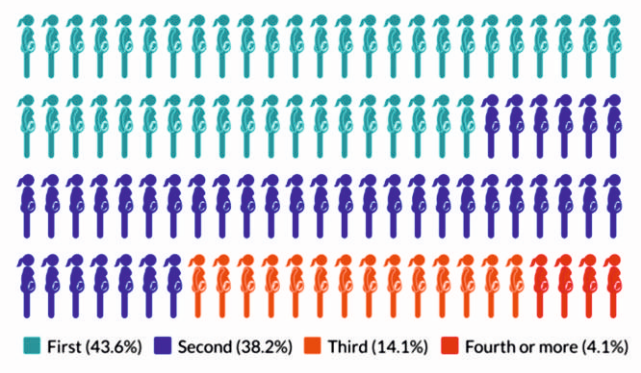
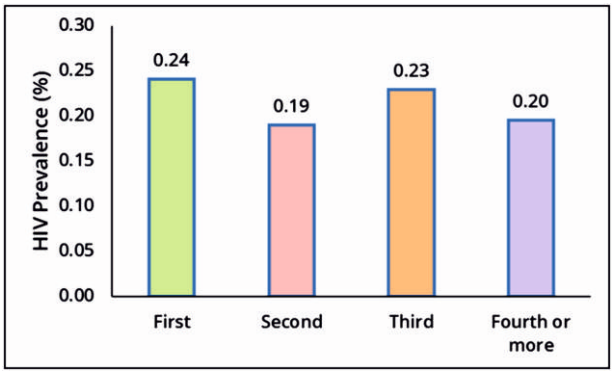


Figure 14: HIV Prevalence (%) among ANC Clinic Attendees by Order of Pregnancy



The order of pregnancy, also known as gravida, is the number of times a woman had become pregnant including live births, still births and abortions. About 43.6% of the respondents were in their first gravida, 38.2% in their second and 14.1% in their third with a prevalence of 0.24%, 0.19% and 0.23% respectively. Other higher order pregnancies were only 4.1% with a prevalence of 0.20%.

4.4 Distribution and HIV Prevalence by Duration of Pregnancy:

Figure 15: Percent Distribution of respondents by duration of current pregnancy

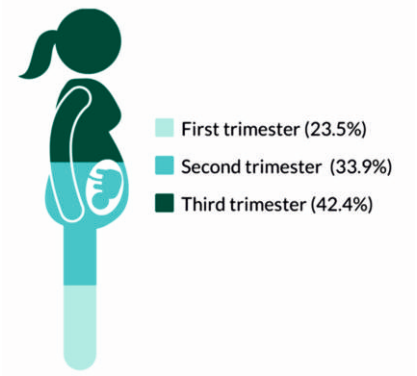
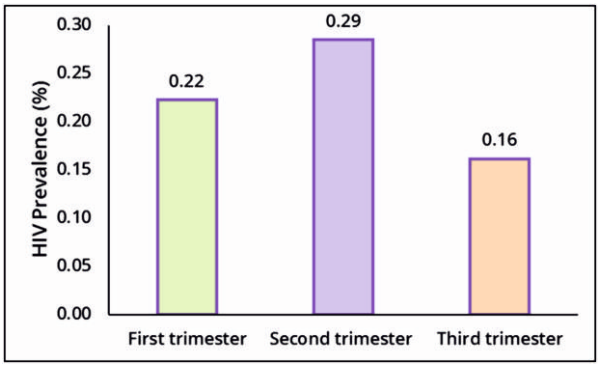


Figure 16: HIV Prevalence (%) among ANC Clinic Attendees by Duration of Pregnancy



Nearly one-fourth of the respondents (23.5%) belonged to the first trimester followed by 33.9% in second trimester and 42.4% in the third trimester. The highest HIV prevalence (0.29%) was recorded among respondents in second trimester, followed by 0.22% in first and 0.16% in third trimesters.

4.5Distribution and HIV Prevalence by ANC Service Utilization:

Figure 17: Percent Distribution of respondents by ANC service uptake

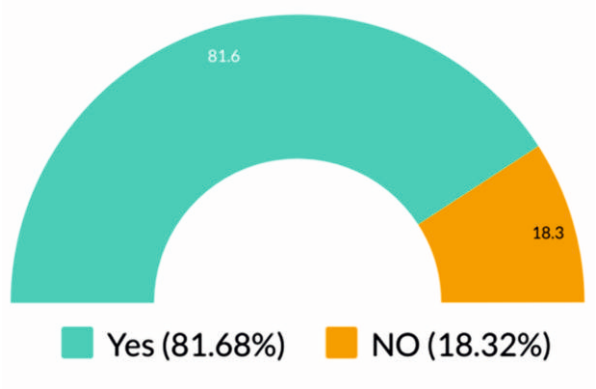
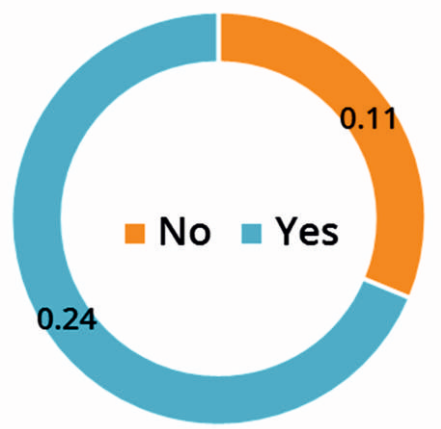


Figure 18: HIV Prevalence among ANC Clinic Attendees by ANC service uptake



This refers to any prior receipt of antenatal care services from a health care facility (PHC/CHC/District hospitals/Maternity hospitals/Private health care facilities/NGO Health care facilities) by the pregnant women during her current pregnancy. In Karnataka, about 81.6% of respondents had received ANC services during current pregnancy prior to the surveillance whereas 18.3% of respondents had not received prior ANC services. HIV prevalence was 0.24% and 0.11% among respondents who had and had not received prior ANC services, respectively.

4.6 Distribution and HIV Prevalence by Source of Referral:

Figure 19: Percent Distribution of respondents by source of referral

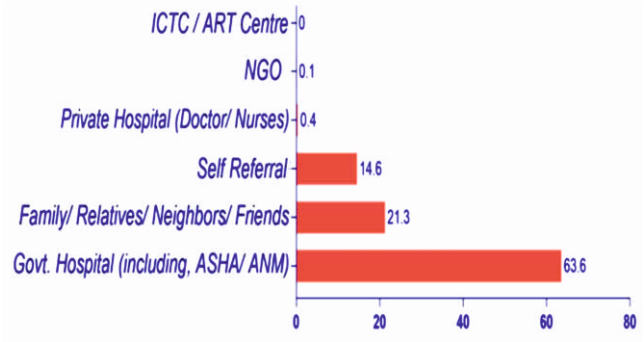
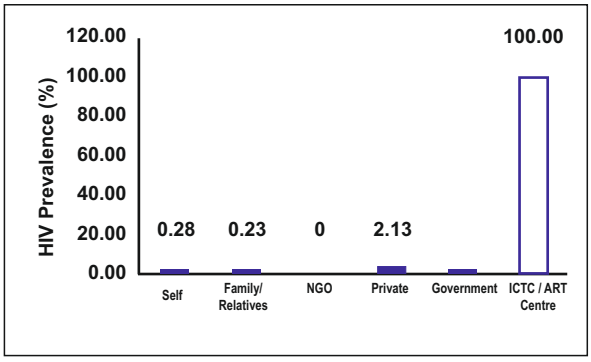


Figure 20: HIV Prevalence (%) among ANC Clinic Attendees by Source of Referral

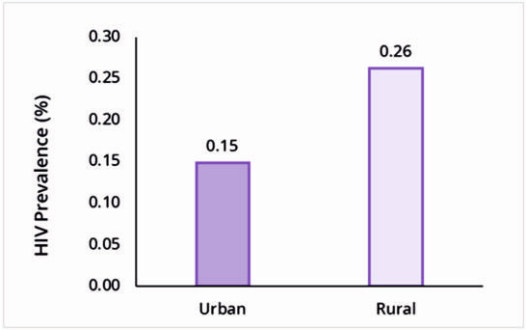


Knowing the sources of referral helps to identify referral bias being introduced in the sample due to specific referrals of HIV-positive cases from any source. Government based sources including hospital, ANM/ASHA were identified as the major referral source (63.6%) to ANC clinics, followed by family/relatives/ neighbour/friends (21.3%) and self-referral (14.6%). Highest HIV prevalence (100%%) was recorded in respondents referred by ICTC/ART centres although the proportion referred accounted to less than 0.1%. This was followed by referral by private health care providers (2.13%), self-referral (0.28%) and referral by family/relatives/ neighbour/friends (0.23%). The prevalence among referrals from government hospitals was 0.18%.

4.7 Distribution and HIV Prevalence by Place of Residence:

Figure 21: Percent Distribution of respondents by current place of residence

Figure 22: HIV Prevalence (%) among ANC Clinic Attendees by Place of residence



Current residence of the respondent was recorded either as urban or rural. Areas under municipal corporation, municipal council, or cantonment area, were classified as urban and the rest were classified as rural. At the state level, 61.5 % of the respondents reported to be currently residing in rural areas and the rest (38.1%) reported to be currently residing in urban areas. However, there were inter-district variations. HIV prevalence among the urban-resident respondents was 0.15%; whereas it was 0.26% among the rural-resident respondents

4.8 Distribution and HIV Prevalence by Occupation of the Respondent:

Figure 23: District-wise % Distribution of respondents by Occupation

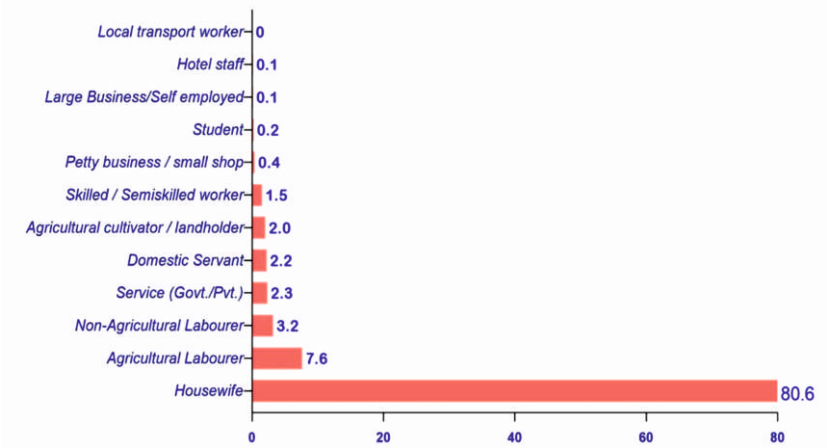
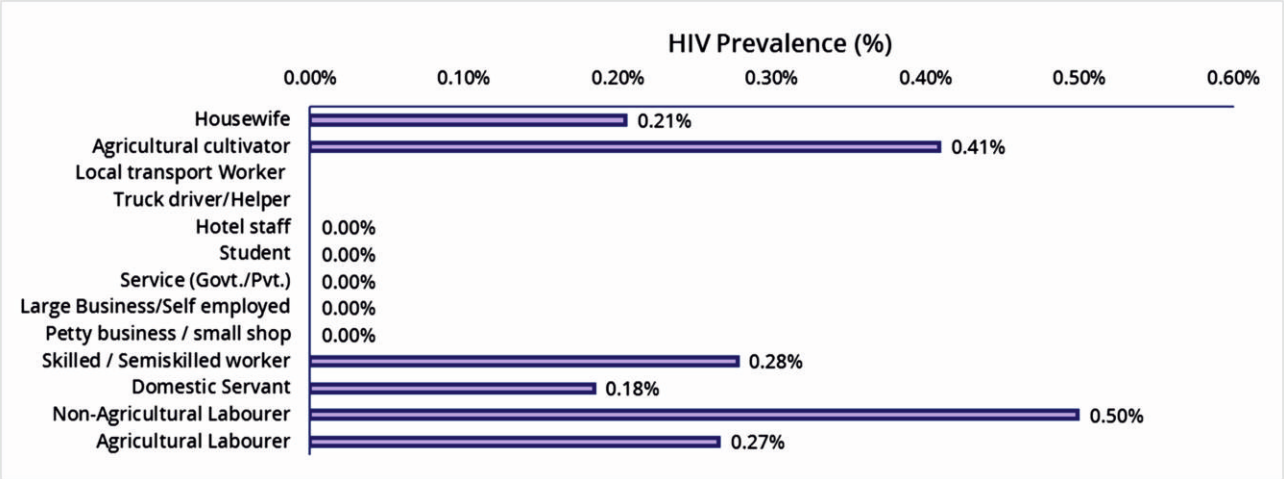


Figure 24: HIV Prevalence (%) among ANC Clinic Attendees by Current Occupation of Respondent



Certain occupations are associated with higher risk of exposure and HIV infection. Hence, understanding the profile of respondents with respect to their occupation, helps to identify specific focus areas. While a vast majority of them were housewives, about 7.6% were agricultural labourers and 3.2% were non-agricultural labourers. In Karnataka, the highest HIV prevalence was recorded among pregnant mothers whose current occupation was non-agricultural labourers (0.50%) followed by agricultural cultivators (0.41%), skilled and semi-skilled labourers (0.28%) and agricultural labourers (0.27%). The prevalence among the housewives was 0.21% and domestic servants was 0.18%

4.9 Distribution and HIV Prevalence by Occupation of the Respondents' Spouse:

HIV transmission in South India is mainly driven through heterosexual route and pregnant mothers represent the sexually active population. Hence occupation of spouse serves to identify population groups at higher infection risk. The occupation of spouses of nearly one-fourth of ANC corresponded to agricultural labourers (26.7%), followed by non-agricultural labourers (16.7%), skilled/semi-skilled workers (13.2%) and service sector (12.4%). HIV prevalence was the highest among the ANC attendees whose spouses were agricultural cultivators (0.43%) followed by / non-agricultural labourers (0.24%). The prevalence ranged from 0.15% to 0.22% among respondents whose spouses were agricultural labourers, hotel staffs, skilled or semi-skilled workers, large business owners petty / small shop owners and service sector employees.

Figure 25: % Distribution of respondents by the Occupation of spouse

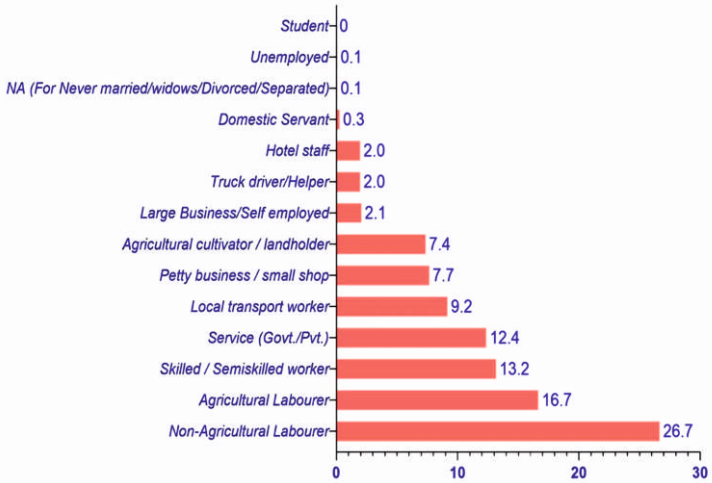
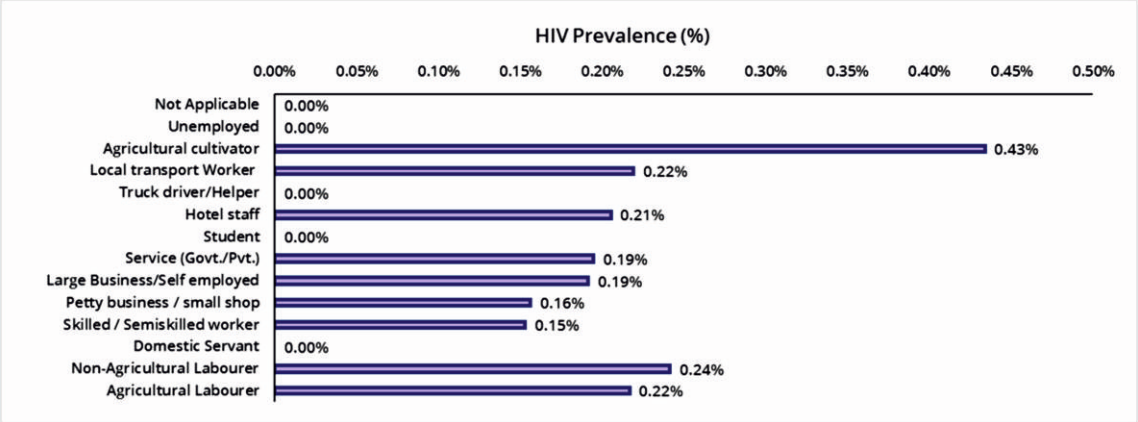


Figure 26: HIV Prevalence among ANC Clinic Attendees by Current Occupation of Spouse



4.10Distribution and HIV Prevalence by Migration Status of the Respondents' Spouse:

The spouse of the respondent is considered to be a migrant if he resides alone in another place or town away from wife for work for longer than 6 months. In Karnataka, during HSS 2019, 98.3% of the pregnant women reported their husbands to be non-migrants while the spouses of 1.6% pregnant women were migrants. While the HIV prevalence among pregnant women with migrant spouses was 0.79%, that of the pregnant women with non-migrant spouses was 0.21%.

Figure 27: Percentage of respondents with migrant spouse

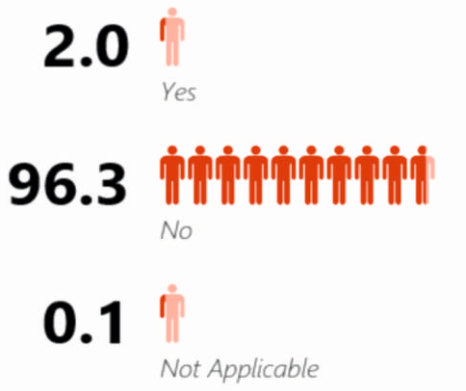
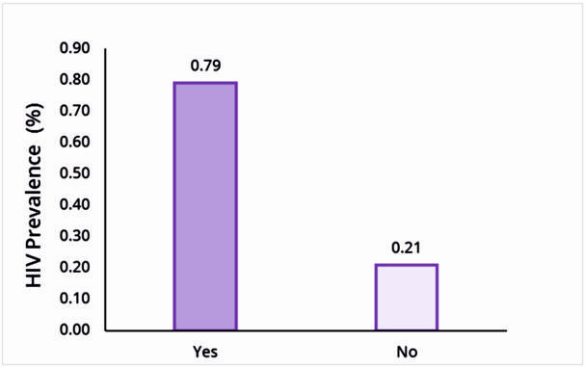


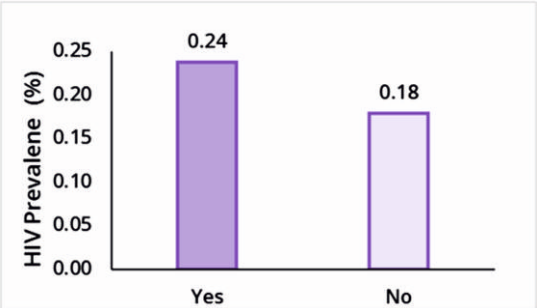
Figure 28: HIV Prevalence among ANC Clinic Attendees by Migration status of Spouse



4.11 Distribution and HIV Prevalence by HIV Test History:

Figure 29: Percent Distribution of respondents by HIV testing history

Figure 30: HIV Prevalence by HIV Test History



HIV Testing has been mandated for all pregnant mothers. With reference to their previous HIV test history, 66.2% of the respondents had tested for HIV, prior to the current surveillance. HIV prevalence among those who had previously tested for HIV was 0.24% and it was 0.18% among those who had previously not tested for HIV

Among the respondents, 48.25% had tested for HIV prior to the surveillance during current pregnancy while 17.98% had tested before current pregnancy.

Among those who had last tested for HIV, 65.7% were HIV Negative, 0.1% were HIV positive, 0.1% had not collected the results of the last HIV test; whereas 33.8% had not tested for HIV and 0.3% had no response.

Figure 31: Percent Distribution of respondents by Time of last HIV Testing

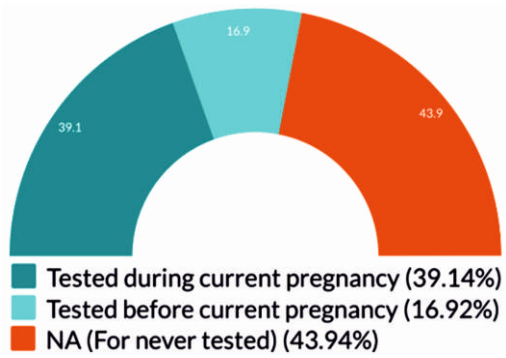
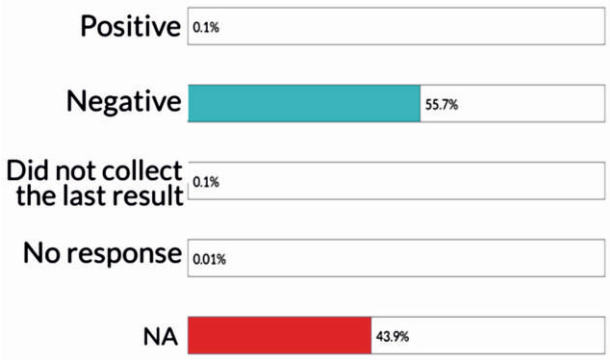


Figure 32: HIV prevalence by Result of last HIV test



4.12 Distribution and HIV Prevalence by HIV Management:

Based on the result of the last HIV test of the respondents, 29 pregnant women were reported to be known-positives. HIV management related information were gathered from known-positive respondents. With reference to the enrolment of HIV positive respondents in any HIV care, either for pre-ART or ART services, at the time of surveillance, all were taking care from Government hospital/ART centres/NGO/Private/Others. Apart from Government ART care centres, seeking care other form of facilities were predominant in Bangalore (n=3). With reference to the current uptake of 'Antiretroviral therapy' or HIV medications, 89.7% (n=26) of them, were taking ART or HIV medications, whereas 10.3% (n=3) were not taking any HIV medications.

CHAPTER 5

5.1 District-wise Distribution of Respondents, HIV Prevalence and Trend

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. 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 chapter gives district-wise distribution of respondents, HIV prevalence and its trend details as observed against the key fifteen socio-demographic variables which were recorded for each respondent. 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. Though there was a clear declining trend seen in Karnataka, within the state, there are variations in HIV prevalence among the districts. A detailed district-wise analysis by applying local knowledge about vulnerabilities and risk factors, will be needed to understand heterogeneity of the disease and inter-district variations, which is essential for planning district strategies in HIV prevention and control.

Figure 33: District-wise HIV Prevalence in Karnataka, 2019

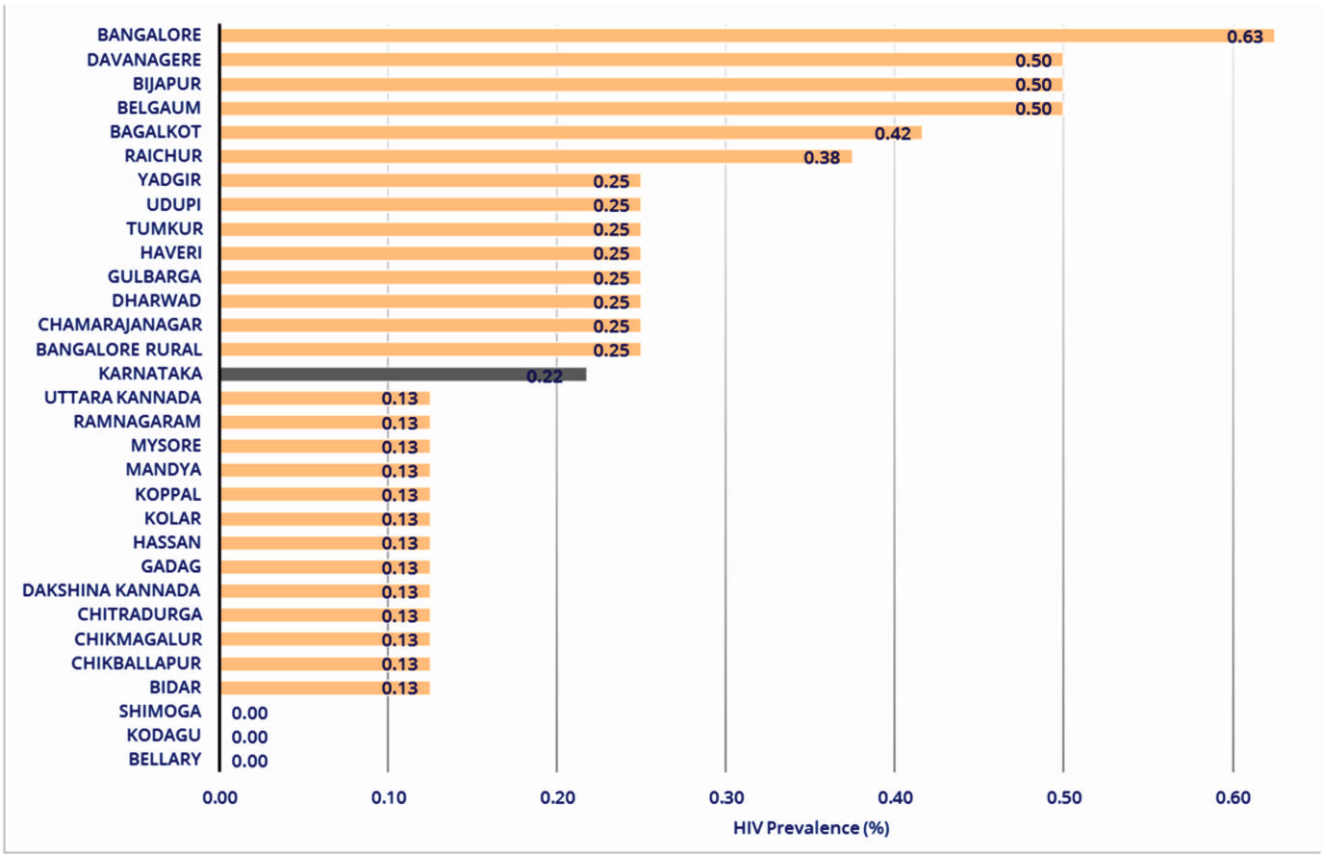


Figure 34: Spatial Representation of district-wise HIV Prevalence in Karnataka, 2019

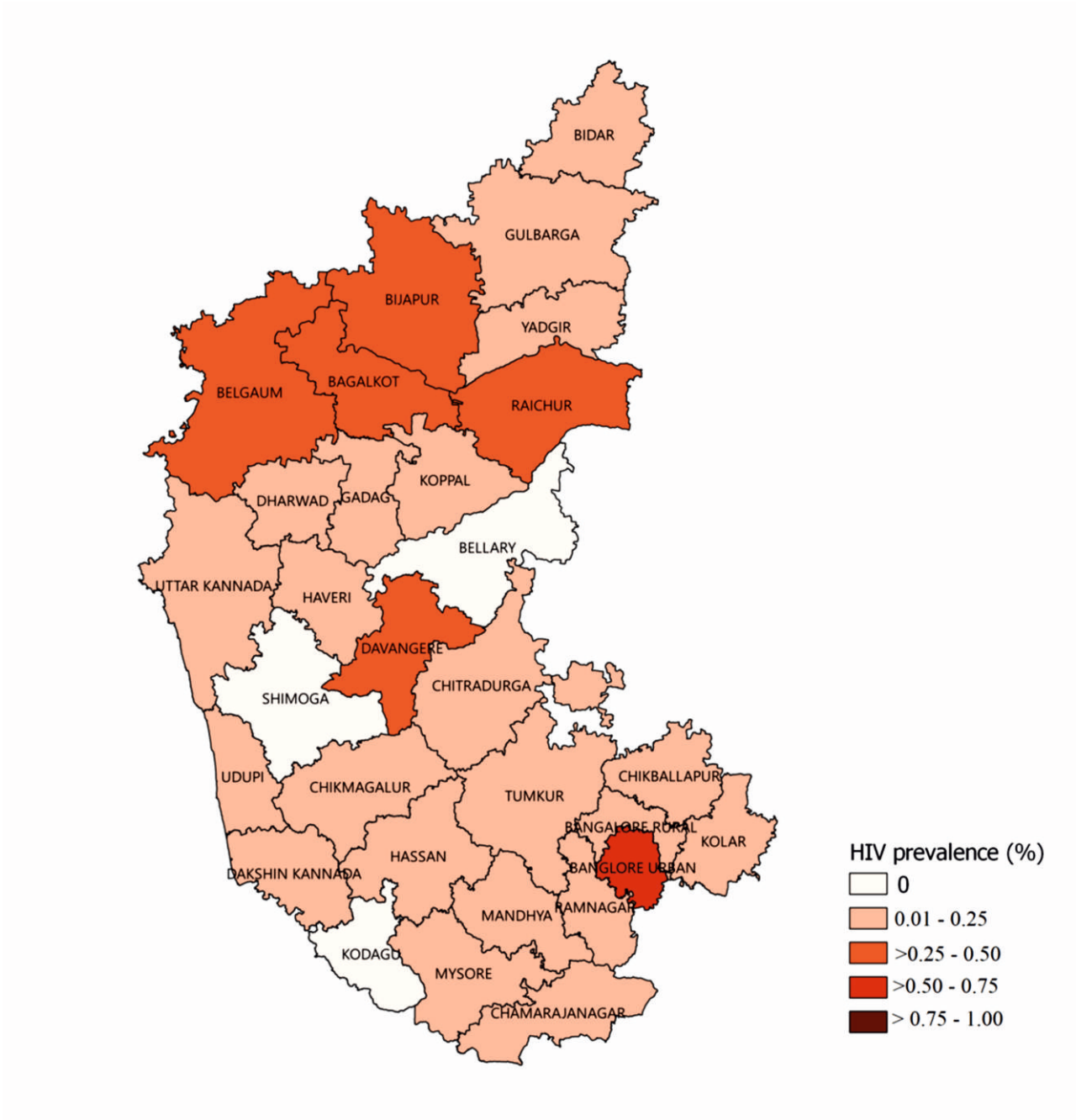


Table 5: District-wise distribution of respondents based on the age group (%)

Age Group	15-24	25-34	35-44	45-49	Total
Karnataka	60.2	38.0	1.8	0	24800
Bagalkot	71.2	28.3	0.6	0	1200
Bangalore	61.3	35.8	3.0	0	800
Bangalore Rural	63.3	35.8	1.0	0	800
Belgaum	68.0	30.8	1.3	0	800
Bellary	70.3	29.2	0.6	0	1200
Bidar	61.6	37.3	1.1	0	800
Bijapur	68.1	31.4	0.5	0	800
Chamarajanagar	62.1	36.4	1.5	0	800
Chikballapur	65.1	34.1	0.8	0	800
Chikmagalur	57.8	40.9	1.4	0	800
Chitradurga	67.9	31.3	0.9	0	800
Dakshina Kannada	27.8	62.6	9.6	0	800
Davanagere	65.6	32.8	1.6	0	800
Dharwad	64.9	33.9	1.3	0	800
Gadag	61.0	37.8	1.3	0	800
Gulbarga	63.9	34.9	1.3	0	800
Hassan	55.9	42.1	2.0	0	800
Haveri	60.0	39.0	1.0	0	800
Kodagu	54.5	43.3	2.3	0	800
Kolar	63.0	35.5	1.5	0	800
Koppal	62.6	36.4	1.0	0	800
Mandya	60.3	37.6	2.1	0	800
Mysore	69.0	30.1	0.9	0	800
Raichur	60.4	39.0	0.6	0	800
Ramnagaram	61.4	37.3	1.4	0	800
Shimoga	56.8	41.6	1.6	0	800
Tumkur	65.1	33.3	1.6	0	800
Udupi	23.9	70.9	5.3	0	800
Uttara Kannada	43.5	52.1	4.3	0.1	800
Yadgir	59.3	39.9	0.9	0	800

Table 6: District-wise distribution of respondents based on the literacy status (%)

State/District	Illiterate	Literate and till 5th standard	6th to 10th standard	11th to Graduation	Post Graduation	Total
Karnataka	9.0	8.4	50.6	29.2	2.8	24800
Bagalkot	10.3	11.7	55.9	16.8	5.4	1200
Bangalore	6.3	10.3	52.7	27.4	3.4	800
Bangalore Rural	3.6	2.6	53.8	36.9	3.1	800
Belgaum	8.1	9.9	60.9	18.5	2.6	800
Bellary	18.0	13.1	49.0	16.9	3.1	1200
Bidar	14.8	14.0	44.9	21.9	4.5	800
Bijapur	18.8	7.5	51.6	17.4	4.8	800
Chamarajanagar	5.3	2.5	55.4	36.4	0.4	800
Chikballapur	4.5	19.3	51.1	19.8	5.4	800
Chikmagalur	6.1	7.5	49.3	29.4	7.8	800
Chitradurga	2.8	11.1	55.1	29.6	1.4	800
Dakshina Kannada	1.9	9.9	57.4	24.5	6.4	800
Davanagere	3.8	6.0	56.4	32.3	1.6	800
Dharwad	1.1	22.3	48.5	28.0	0.1	800
Gadag	4.8	4.8	66.0	23.4	1.1	800
Gulbarga	28.4	4.3	45.3	18.2	3.8	800
Hassan	4.6	4.4	40.9	49.1	1.0	800
Haveri	6.0	5.6	60.4	27.5	0.5	800
Kodagu	5.0	5.5	37.8	47.1	4.5	800
Kolar	3.0	3.4	48.6	42.9	2.1	800
Koppal	16.0	11.0	51.5	19.1	2.4	800
Mandya	3.0	3.0	44.4	44.6	5.0	800
Mysore	2.8	3.3	53.3	39.0	1.8	800
Raichur	26.4	16.5	40.4	16.4	0.4	800
Ramnagaram	3.6	5.8	51.5	37.6	1.5	800
Shimoga	2.4	2.5	49.8	43.5	1.9	800
Tumkur	2.0	4.1	46.9	46.1	0.9	800
Udupi	2.4	4.0	58.8	31.9	3.0	800
Uttara Kannada	3.0	13.9	48.5	33.3	1.4	800
Yadgir	47.0	9.5	30.1	12.4	1.0	800

Table 7 : District -wise distribution of respondents based on the Order of Pregnancy (%)

State/District	First	Second	Third	Fourth or more	Total
Karnataka	43.6	38.2	14.1	4.1	24800
Bagalkot	36.6	35.3	20.5	7.5	1200
Bangalore	43.9	41.9	11.9	2.4	800
Bangalore Rural	47.8	40.6	9.8	1.9	800
Belgaum	41.6	33.5	18.4	6.5	800
Bellary	42.7	36.3	16.4	4.6	1200
Bidar	39.4	31.5	21.1	7.6	800
Bijapur	35.0	35.0	21.3	8.8	800
Chamarajanagar	47.1	41.4	9.0	2.5	800
Chikballapur	38.6	48.8	10.6	1.9	800
Chikmagalur	48.0	41.8	8.0	2.1	800
Chitradurga	49.8	35.3	12.0	3.0	800
Dakshina Kannada	43.9	37.1	13.1	5.9	800
Davanagere	44.5	39.6	13.4	2.5	800
Dharwad	26.9	52.6	18.6	1.9	800
Gadag	42.3	39.9	15.1	2.8	800
Gulbarga	39.0	33.5	21.6	5.9	800
Hassan	49.8	34.3	12.5	3.5	800
Haveri	42.4	37.3	15.5	4.9	800
Kodagu	52.4	35.8	9.3	2.4	800
Kolar	45.6	42.4	9.3	2.8	800
Koppal	40.3	36.3	16.5	7.0	800
Mandya	50.5	37.3	10.6	1.6	800
Mysore	49.8	39.4	9.1	1.8	800
Raichur	35.0	37.0	20.1	7.9	800
Ramnagaram	42.4	42.5	13.0	2.1	800
Shimoga	53.0	36.5	8.4	2.1	800
Tumkur	46.5	41.6	9.9	2.0	800
Udupi	52.4	36.4	8.9	2.4	800
Uttara Kannada	45.8	36.6	12.5	5.1	800
Yadgir	38.5	31.5	21.1	8.9	800

Table 8 : District-wise distribution of respondents based on the Duration of Pregnancy (%)

State/District	First trimester	Second trimester	Third trimester	Total
Karnataka	23.5	33.9	42.4	24800
Bagalkot	17.7	40.0	42.3	1200
Bangalore	19.9	40.1	39.9	800
Bangalore Rural	26.9	43.3	29.5	800
Belgaum	9.5	47.6	42.9	800
Bellary	18.0	48.0	33.7	1200
Bidar	29.8	38.6	31.4	800
Bijapur	16.9	28.4	54.8	800
Chamarajanagar	45.9	18.5	35.5	800
Chikballapur	25.1	41.1	33.0	800
Chikmagalur	38.9	31.4	29.6	800
Chitradurga	27.5	35.4	37.1	800
Dakshina Kannada	23.0	30.5	46.3	800
Davanagere	29.1	31.0	39.9	800
Dharwad	49.3	32.8	16.9	800
Gadag	28.5	26.5	45.0	800
Gulbarga	20.1	32.3	47.4	800
Hassan	26.6	23.0	50.3	800
Haveri	33.4	29.0	37.6	800
Kodagu	21.8	27.8	50.1	800
Kolar	16.4	35.1	48.5	800
Koppal	10.5	24.6	64.6	800
Mandya	20.4	30.3	49.4	800
Mysore	16.1	31.3	52.6	800
Raichur	21.3	33.4	45.0	800
Ramnagaram	20.8	35.8	43.4	800
Shimoga	20.8	35.9	43.4	800
Tumkur	21.6	30.1	48.3	800
Udupi	14.5	33.6	51.9	800
Uttara Kannada	27.6	35.1	37.3	800
Yadgir	13.1	37.3	49.6	800

Table 9: District-wise distribution of respondents based on the Prior ANC service uptake (%)

State/District	YES	NO	Total
Karnataka	81.6	18.3	24800
Bagalkot	75.0	24.9	1200
Bangalore	99.4	0.6	800
Bangalore Rural	98.4	0.3	800
Belgaum	88.8	11.3	800
Bellary	79.0	20.8	1200
Bidar	55.5	44.5	800
Bijapur	85.1	14.9	800
Chamarajanagar	79.0	20.6	800
Chikballapur	92.6	6.1	800
Chikmagalur	71.6	28.4	800
Chitradurga	83.1	16.9	800
Dakshina Kannada	83.9	16.0	800
Davanagere	85.3	14.8	800
Dharwad	97.8	2.1	800
Gadag	82.5	17.5	800
Gulbarga	80.6	19.3	800
Hassan	84.9	15.1	800
Haveri	32.5	67.5	800
Kodagu	74.8	25.1	800
Kolar	87.8	12.3	800
Koppal	81.4	18.5	800
Mandya	89.0	11.0	800
Mysore	82.3	17.8	800
Raichur	73.9	26.1	800
Ramnagaram	98.4	1.6	800
Shimoga	44.8	55.3	800
Tumkur	93.6	6.4	800
Udupi	95.9	4.0	800
Uttara Kannada	97.8	2.3	800
Yadgir	77.5	22.5	800

Table 10 : District-wise distribution of respondents based on the Source of Referral (%)

State/District	Self Referral	Family/ Relatives/ Neighbors/ Friends	NGO	Private (Doctor/ Nurses)	Govt (including, ASHA/ ANM)	ICTC / ART Centre	N
Karnataka	14.6	21.3	0.1	0.4	63.6	0.0	24800
Bagalkot	19.1	22.2	0.1	0.0	58.7	0.0	1200
Bangalore	25.9	15.6	0.1	0.0	58.3	0.1	800
Bangalore Rural	1.4	0.1	0.3	0.0	98.3	0.0	800
Belgaum	11.3	9.6	0.1	0.9	78.1	0.0	800
Bellary	14.8	26.5	0.0	0.0	58.7	0.0	1200
Bidar	1.9	16.8	0.1	0.0	81.0	0.0	800
Bijapur	0.3	46.6	0.0	0.0	53.1	0.0	800
Chamarajanagar	0.0	44.5	0.0	0.0	55.1	0.0	800
Chikballapur	14.8	18.8	0.3	0.0	66.1	0.0	800
Chikmagalur	11.5	20.0	0.1	1.4	67.0	0.0	800
Chitradurga	0.4	5.4	0.0	0.5	93.8	0.0	800
Dakshina Kannada	17.6	8.9	0.0	2.9	70.5	0.0	800
Davanagere	11.0	1.0	0.0	1.3	86.5	0.0	800
Dharwad	1.9	3.4	0.1	0.6	93.8	0.0	800
Gadag	21.3	38.9	0.0	0.0	39.9	0.0	800
Gulbarga	3.4	35.5	0.4	0.0	60.6	0.0	800
Hassan	50.9	16.4	0.0	0.9	31.9	0.0	800
Haveri	9.5	0.0	0.3	0.0	90.3	0.0	800
Kodagu	27.6	14.9	0.0	0.8	56.4	0.0	800
Kolar	49.0	7.4	0.0	0.0	43.6	0.0	800
Koppal	12.5	12.9	0.0	0.0	74.5	0.0	800
Mandya	3.5	46.4	0.0	0.0	50.1	0.0	800
Mysore	5.1	64.8	0.0	0.0	30.1	0.0	800
Raichur	52.1	1.3	0.0	0.6	45.9	0.1	800
Ramnagaram	12.4	64.9	0.0	0.8	22.0	0.0	800
Shimoga	7.0	29.8	0.1	0.0	63.1	0.0	800
Tumkur	0.8	49.4	0.1	0.0	49.8	0.0	800
Udupi	46.9	6.1	0.0	0.1	46.9	0.0	800
Uttara Kannada	2.4	7.1	0.1	0.4	90.0	0.0	800
Yadgir	0.5	0.8	0.0	0.8	98.0	0.0	800

Table 11: District-wise distribution of respondents based on Place of Residence (%)

State/District	Urban	Rural	Total
Karnataka	38.1	61.5	24800
Bagalkot	32.0	67.8	1200
Bangalore	94.1	5.9	800
Bangalore Rural	55.1	44.4	800
Belgaum	26.9	73.1	800
Bellary	41.5	58.3	1200
Bidar	49.8	50.1	800
Bijapur	35.3	64.8	800
Chamarajanagar	18.5	80.6	800
Chikballapur	27.5	70.1	800
Chikmagalur	25.5	73.8	800
Chitradurga	31.3	68.6	800
Dakshina Kannada	27.9	72.1	800
Davanagere	33.8	66.3	800
Dharwad	56.1	41.5	800
Gadag	38.1	61.9	800
Gulbarga	46.1	52.3	800
Hassan	33.4	66.5	800
Haveri	33.5	66.4	800
Kodagu	9.8	89.0	800
Kolar	52.9	46.9	800
Koppal	27.6	72.4	800
Mandya	30.6	69.4	800
Mysore	48.4	51.6	800
Raichur	40.6	59.3	800
Ramnagaram	64.8	35.3	800
Shimoga	45.9	54.1	800
Tumkur	23.8	76.3	800
Udupi	14.4	85.6	800
Uttara Kannada	38.8	60.8	800
Yadgir	41.8	57.6	800

Table 12 : District -wise distribution of respondents based on the Occupation (%)

State/Distirct	Agricultural Labourer	Non-Agricultural Labourer	Domestic Servant	Skilled / Semiskilled worker	Petty business / small shop	Large Business/Self employed	Service (Govt./Pvt.)	Student	Hotel staff	Truck driver/Helper	Local transport Worker	Agricultural cultivator	Housewife	Total
Karnataka	7.6	3.2	2.2	1.5	0.4	0.1	2.3	0.2	0.1	0.0	0.0	2.0	80.6	24800
Bagalkot	4.1	5.3	1.8	1.7	0.8	0.1	1.5	0.2	0.2	0.0	0.0	2.2	82.3	1200
Bangalore	0.4	2.5	1.4	0.5	0.0	0.1	3.8	0.1	0.0	0.0	0.0	0.0	91.3	800
Bangalore Rural	0.9	4.4	0.0	1.9	0.4	0.0	1.3	0.1	0.0	0.0	0.0	0.1	91.0	800
Belgaum	2.1	2.4	44.5	0.6	0.5	0.0	1.5	0.0	0.0	0.0	0.0	1.3	47.1	800
Bellary	16.3	11.7	10.6	1.9	0.4	0.0	1.4	0.0	0.2	0.0	0.0	2.3	55.2	1200
Bidar	4.0	0.8	0.1	0.3	0.1	0.0	1.1	0.5	0.1	0.0	0.1	0.5	92.4	800
Bijapur	19.6	0.8	0.0	0.3	0.4	0.0	0.8	0.0	0.0	0.0	0.0	0.9	77.4	800
Chamarajanagar	1.5	5.4	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	47.0	44.3	800
Chikballapur	14.4	9.3	0.0	0.8	2.6	0.0	2.8	0.0	0.0	0.0	0.0	0.0	70.3	800
Chikmagalur	13.6	2.3	0.1	0.3	0.8	0.3	3.0	0.1	0.5	0.0	0.0	0.0	79.1	800
Chitradurga	8.5	1.3	0.0	0.4	0.4	0.0	1.6	0.5	0.0	0.0	0.0	3.3	84.1	800
Dakshina Kannada	0.6	3.3	0.4	23.8	0.5	0.3	6.9	0.1	0.1	0.0	0.0	0.1	64.0	800
Davanagere	0.4	0.3	0.1	0.1	0.4	0.0	0.3	0.0	0.0	0.0	0.0	0.0	98.5	800
Dharwad	0.6	7.5	0.0	0.3	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	91.4	800
Gadag	0.3	0.8	0.5	0.5	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	97.4	800
Gulbarga	11.0	1.5	0.0	0.3	0.0	0.0	1.3	1.3	0.1	0.0	0.0	0.0	84.6	800
Hassan	9.5	1.5	0.1	0.1	0.0	0.1	1.8	0.4	0.0	0.0	0.0	0.0	86.5	800
Haveri	1.5	1.6	0.0	0.6	0.1	0.0	1.4	0.0	0.0	0.0	0.0	0.0	94.8	800
Kodagu	14.4	0.3	0.0	0.8	0.3	0.1	7.6	0.4	0.0	0.0	0.0	0.0	76.1	800
Kolar	0.0	0.0	0.0	0.1	0.0	0.0	3.0	0.6	0.0	0.0	0.0	0.0	96.3	800
Koppal	37.8	2.4	0.0	1.1	0.3	0.0	1.9	0.3	0.0	0.0	0.0	1.3	55.1	800
Mandya	0.6	1.4	0.0	0.0	0.0	0.0	3.8	0.0	0.0	0.0	0.0	0.0	94.3	800
Mysore	1.3	0.8	0.0	0.3	0.1	0.0	1.4	0.3	0.0	0.0	0.0	0.0	96.0	800
Raichur	26.4	14.4	0.4	1.6	1.8	0.0	2.0	0.1	0.0	0.0	0.1	0.0	53.3	800
Ramnagaram	0.1	2.1	0.3	0.4	0.1	0.0	1.8	0.0	0.1	0.0	0.0	0.0	95.1	800
Shimoga	1.5	0.5	0.0	0.1	0.1	0.0	2.5	0.1	0.0	0.0	0.0	0.1	94.9	800
Tumkur	0.4	0.8	0.0	1.3	0.0	0.3	2.9	0.0	0.0	0.0	0.0	0.0	94.5	800
Udupi	0.0	1.5	0.0	1.4	0.3	0.0	4.3	0.0	0.0	0.0	0.0	0.0	92.6	800
Uttara Kannada	0.8	1.0	1.3	0.6	0.1	0.3	3.9	0.0	0.1	0.0	0.0	0.0	92.0	800
Yadgir	32.6	4.5	0.1	1.5	1.0	0.1	1.6	0.4	0.0	0.0	0.0	0.0	58.1	800

Table 13 : District- wise distribution of respondents based on the Occupation of spouse (%)

State/District	Agricultural Labourer	Non-Agricultural Labourer	Domestic Servant	Skilled / Semiskilled worker	Petty business / small shop	Large Business/Self employed	Service (Govt./Pvt.)	Student	Hotel staff	Truck driver/Helper	Local transport Worker	Agricultural cultivator	Unemployed	Not Applicable	Total
Karnataka	16.7	26.7	0.3	13.2	7.7	2.1	12.4	0.0	2.0	2.0	9.2	7.4	0.1	0.1	24800
Bagalkot	12.3	30.3	0.0	7.7	7.9	2.8	13.4	0.2	2.1	1.7	8.1	13.3	0.3	0.2	1200
Bangalore	5.1	24.4	0.3	23.0	7.0	2.6	20.4	0.0	0.8	3.5	13.0	0.0	0.0	0.0	800
Bangalore Rural	5.4	33.8	0.0	23.9	3.5	2.6	12.1	0.0	1.1	0.3	8.8	8.6	0.0	0.0	800
Belgaum	4.1	29.5	0.1	9.4	8.8	0.0	13.1	0.0	1.3	1.9	6.8	25.0	0.1	0.0	800
Bellary	19.3	31.3	1.1	15.2	4.9	2.6	7.8	0.0	0.9	3.9	7.0	5.7	0.0	0.3	1200
Bidar	14.5	28.8	0.0	6.3	9.9	3.9	11.6	0.0	3.1	5.0	12.1	4.8	0.0	0.1	800
Bijapur	14.5	7.5	0.0	18.6	9.8	0.3	14.6	0.0	0.1	0.4	13.6	20.6	0.0	0.0	800
Chamarajanagar	12.8	33.6	0.0	13.6	8.5	0.5	11.8	0.0	1.5	0.3	11.4	6.1	0.0	0.0	800
Chikballapur	34.9	22.4	0.0	9.4	14.8	1.6	10.8	0.0	0.1	0.1	5.8	0.3	0.0	0.0	800
Chikmagalur	33.8	29.4	0.1	4.4	4.9	3.1	6.0	0.0	2.4	1.3	6.1	8.4	0.0	0.3	800
Chitradurga	18.0	27.3	0.0	7.3	6.3	1.6	8.9	0.0	2.9	3.5	11.5	12.5	0.0	0.4	800
DakshinaKannada	1.8	31.5	0.0	26.9	7.5	0.9	8.5	0.0	4.8	0.1	13.8	3.9	0.0	0.5	800
Davanagere	24.1	21.1	3.1	10.9	8.3	0.4	8.4	0.0	2.1	0.9	9.8	10.8	0.3	0.0	800
Dharwad	18.3	66.4	0.4	6.3	1.9	0.3	1.3	0.0	0.5	0.5	4.0	0.0	0.1	0.1	800
Gadag	20.3	26.1	0.0	16.0	10.4	2.6	11.6	0.0	1.4	0.8	9.0	1.8	0.0	0.1	800
Gulbarga	23.5	24.6	0.0	10.5	6.0	2.8	12.1	0.1	1.8	1.9	13.8	2.5	0.5	0.0	800
Hassan	24.0	18.3	0.0	12.1	12.1	1.6	11.8	0.0	1.9	14.9	0.0	3.0	0.0	0.4	800
Haveri	23.5	29.6	0.3	9.1	7.3	3.1	10.4	0.0	0.9	3.0	7.9	4.9	0.0	0.1	800
Kodagu	29.6	6.8	0.1	11.3	7.6	4.9	16.9	0.0	3.4	1.4	10.8	7.0	0.0	0.3	800
Kolar	9.5	33.5	0.0	12.1	8.0	0.8	21.4	0.0	0.1	0.6	14.0	0.0	0.0	0.0	800
Koppal	42.0	18.5	2.0	6.1	3.5	3.4	8.0	0.0	1.8	1.4	8.6	4.6	0.0	0.1	800
Mandya	15.3	21.9	0.0	7.6	9.9	1.8	16.8	0.0	1.6	4.3	8.8	11.9	0.1	0.3	800
Mysore	10.1	27.3	0.0	18.9	9.4	2.0	8.6	0.0	2.9	0.5	13.0	7.4	0.0	0.0	800
Raichur	27.3	25.8	0.0	15.0	3.9	0.4	12.1	0.0	0.0	0.5	7.3	7.5	0.3	0.1	800
Ramnagaram	6.9	23.5	0.0	17.9	11.9	1.4	14.1	0.0	1.3	1.1	11.1	10.8	0.1	0.0	800
Shimoga	18.8	22.3	0.0	11.5	8.0	5.8	11.4	0.0	1.5	1.5	8.9	10.5	0.0	0.0	800
Tumkur	3.0	29.9	0.0	11.8	4.4	4.3	9.5	0.0	0.6	0.9	10.5	25.0	0.0	0.3	800
Udupi	0.3	31.6	0.0	14.5	9.6	0.3	18.4	0.0	13.8	0.0	10.4	1.1	0.0	0.1	800
Uttara Kannada	3.6	23.3	0.0	21.4	4.4	3.0	33.8	0.0	1.5	3.3	5.3	0.4	0.3	0.0	800
Yadgir	26.6	17.9	0.0	18.9	13.6	1.6	8.8	0.4	1.5	1.0	6.8	3.0	0.0	0.0	800

Table 14 : District-wise distribution of respondents based on Migration of Spouse (%)

State/District	Yes	No	Not Applicable	Total
Karnataka	2.0	96.3	0.1	24800
Bagalkot	9.5	90.3	0.1	1200
Bangalore	0.9	99.0	0	800
Bangalore Rural	1.8	98.3	0	800
Belgaum	2.0	98.0	0	800
Bellary	0.7	99.0	0.3	1200
Bidar	0	99.9	0.1	800
Bijapur	2.0	98.0	0	800
Chamarajanagar	0	100.0	0	800
Chikballapur	2.0	98.0	0	800
Chikmagalur	0.4	99.4	0.3	800
Chitradurga	0.3	99.4	0.4	800
Dakshina Kannada	0.8	98.8	0.5	800
Davanagere	0.1	99.9	0	800
Dharwad	1.4	98.5	0.1	800
Gadag	0	99.9	0.1	800
Gulbarga	1.1	98.9	0	800
Hassan	1.5	98.0	0.4	800
Haveri	0.1	51.5	0.1	800
Kodagu	2.3	97.4	0.3	800
Kolar	1.1	98.9	0	800
Koppal	0	99.9	0.1	800
Mandya	0.5	99.3	0.3	800
Mysore	0.1	99.9	0	800
Raichur	11.3	88.6	0.1	800
Ramnagaram	0.4	99.6	0	800
Shimoga	1.8	98.3	0	800
Tumkur	0.3	99.5	0.3	800
Udupi	11.9	88.0	0.1	800
Uttara Kannada	3.5	96.5	0	800
Yadgir	0.8	99.3	0	800

Table 15 : District-wise distribution of respondents based on HIV tested history (%)

State/District	Yes	No	Total
Karnataka	66.2	33.8	24800
Bagalkot	69.6	30.4	1200
Bangalore	86.4	13.6	800
Bangalore Rural	57.1	42.9	800
Belgaum	34.5	65.5	800
Bellary	69.5	30.5	1200
Bidar	14.3	85.8	800
Bijapur	44.4	55.6	800
Chamarajanagar	76.9	23.1	800
Chikballapur	90.5	9.5	800
Chikmagalur	62.4	37.6	800
Chitradurga	60.9	39.1	800
Dakshina Kannada	91.3	8.8	800
Davanagere	71.6	28.4	800
Dharwad	94.6	5.4	800
Gadag	75.6	24.4	800
Gulbarga	35.1	64.9	800
Hassan	83.9	16.1	800
Haveri	45.1	54.9	800
Kodagu	61.3	38.6	800
Kolar	59.5	40.5	800
Koppal	20.0	80.0	800
Mandya	83.9	16.1	800
Mysore	85.4	14.6	800
Raichur	74.5	25.5	800
Ramnagaram	93.3	6.8	800
Shimoga	57.1	42.9	800
Tumkur	91.4	8.6	800
Udupi	79.3	20.8	800
Uttara Kannada	90.8	9.3	800
Yadgir	23.8	76.3	800

Table 16: District-wise distribution of respondents based on the Time of their last HIV test (%)

(Only the respondent whom tested for HIV test previously)

State/District	Tested previously during current pregnancy	Consented today	Tested before current pregnancy	Total
Karnataka	72.88	0.00	27.11	16425
Bagalkot	69.34	0.00	30.66	835
Bangalore	57.89	0.00	42.11	691
Bangalore Rural	82.06	0.00	17.94	457
Belgaum	23.91	0.00	76.09	276
Bellary	71.82	0.00	28.18	834
Bidar	93.86	0.00	6.14	114
Bijapur	35.77	0.00	64.23	355
Chamarajanagar	53.01	0.00	46.99	615
Chikballapur	99.72	0.00	0.28	724
Chikmagalur	58.72	0.00	41.28	499
Chitradurga	70.43	0.00	29.57	487
Dakshina Kannada	64.93	0.00	34.93	730
Davanagere	53.40	0.00	46.60	573
Dharwad	71.99	0.00	28.01	757
Gadag	74.88	0.00	25.12	605
Gulbarga	99.29	0.00	0.71	281
Hassan	87.78	0.00	12.22	671
Haveri	87.53	0.00	12.47	361
Kodagu	98.57	0.00	1.43	490
Kolar	99.58	0.00	0.42	476
Koppal	99.38	0.00	0.63	160
Mandya	92.40	0.00	7.60	671
Mysore	89.46	0.00	10.54	683
Raichur	34.40	0.00	65.60	596
Ramnagaram	67.02	0.00	32.98	746
Shimoga	2.63	0.00	97.37	457
Tumkur	87.96	0.00	12.04	731
Udupi	97.63	0.00	2.37	634
Uttara Kannada	82.78	0.00	17.22	726
Yadgir	76.32	0.00	23.68	190

Table 17: District-wise distribution of respondents based on the Result of their last HIV test (%)

(Only the respondent whom tested for HIV test previously)

State/District	Positive	Negative	Did not collect the test result	No Response	Total
Karnataka	0.18	99.26	0.09	0.47	16425
Bagalkot	0.36	99.64	0.00	0.00	835
Bangalore	0.43	98.84	0.43	0.29	691
Bangalore Rural	0.22	99.78	0.00	0.00	457
Belgaum	1.09	97.83	1.09	0.00	276
Bellary	0.00	100.00	0.00	0.00	834
Bidar	0.00	100.00	0.00	0.00	114
Bijapur	0.85	83.94	0.00	15.21	355
Chamarajanagar	0.00	100.00	0.00	0.00	615
Chikballapur	0.00	100.00	0.00	0.00	724
Chikmagalur	0.00	99.80	0.00	0.20	499
Chitradurga	0.21	99.79	0.00	0.00	487
Dakshina Kannada	0.14	99.04	0.82	0.00	730
Davanagere	0.17	99.65	0.17	0.00	573
Dharwad	0.13	97.49	0.13	2.25	757
Gadag	0.00	100.00	0.00	0.00	605
Gulbarga	0.00	100.00	0.00	0.00	281
Hassan	0.00	100.00	0.00	0.00	671
Haveri	0.55	99.45	0.00	0.00	361
Kodagu	0.00	100.00	0.00	0.00	490
Kolar	0.21	99.79	0.00	0.00	476
Koppal	0.63	99.38	0.00	0.00	160
Mandya	0.15	99.85	0.00	0.00	671
Mysore	0.00	100.00	0.00	0.00	683
Raichur	0.34	99.66	0.00	0.00	596
Ramnagaram	0.13	99.87	0.00	0.00	746
Shimoga	0.00	100.00	0.00	0.00	457
Tumkur	0.14	99.86	0.00	0.00	731
Udupi	0.32	99.68	0.00	0.00	634
Uttara Kannada	0.14	99.31	0.14	0.41	726
Yadgir	0.00	100.00	0.00	0.00	190

Table 18: District-wise distribution of respondents based on the HIV management (%)

State/District	(1) ART	(2) NGO	(3) PVt	(4)Pharmacist/Chemist	(5) Alternative/non Allopathic	(6) Any other type	(7) Not seeking taking for HIV management	(1)+(2)	(1)+(3)	(1)+(5)	(1)+(6)	Total
Karnataka	25							1	1	1	1	29
Bagalkot	3											3
Bangalore									1	1	1	3
Bangalore Rural	1											1
Belgaum	3											3
Bijapur	3											3
Chitradurga	1											1
Dakshina Kannada	1											1
Davanagere	1											1
Dharwad								1				1
Haveri	2											2
Kolar	1											1
Koppal	1											1
Mandya	1											1
Raichur	2											2
Ramnagaram	1											1
Tumkur	1											1
Udupi	2											2
Uttara Kannada	1											1

Table 19: District-wise distribution of HIV positive respondents based on the ART uptake (%)

(Results Only;If respondent whom Previous HIV test results postive and ART taken currently or not)

State/District	1. Yes	2. No	Total
Karnataka	89.7	10.3	29
Bagalkot	66.7	33.3	3
Bangalore	100	0	3
Bangalore Rural	0.0	100.0	1
Belgaum	66.7	33.3	3
Bijapur	100	0	3
Chitradurga	100	0	1
Dakshina Kannada	100	0	1
Davanagere	100	0	1
Dharwad	100	0	1
Haveri	100	0	2
Kolar	100	0	1
Koppal	100	0	1
Mandya	100	0	1
Raichur	100	0	2
Ramnagaram	100	0	1
Tumkur	100	0	1
Udupi	100	0	2
Uttara Kannada	100	0	1

Table 20 : HIV Prevalence among ANC Clinic Attendees by Age

State/Districts	15-24		25-34		35-44		45-49		Total
	%	Total	%	Total	%	Total	%	Total	
Karnataka	0.19	14927	0.23	9436	0.69	436	0	1	24800
Bagalkot	0.47	854	0.29	339	0	7			1200
Bangalore	0.41	490	1.05	286	0	24			800
Bangalore Rural	0	506	0.70	286	0	8			800
Belgaum	0.18	544	0.81	246	10.00	10			800
Bellary	0	843	0	350	0	7			1200
Bidar	0.20	493	0	298	0	9			800
Bijapur	0.55	545	0.40	251	0	4			800
Chamarajanagar	0.20	497	0.34	291	0	12			800
Chikballapur	0.19	521	0	273	0	6			800
Chikmagalur	0	462	0.31	327	0	11			800
Chitradurga	0	543	0.40	250	0	7			800
Dakshina Kannada	0	222	0	501	1.30	77			800
Davanagere	0.38	525	0.76	262	0	13			800
Dharwad	0.19	519	0.37	271	0	10			800
Gadag	0.20	488	0	302	0	10			800
Gulbarga	0	511	0.72	279	0	10			800
Hassan	0.22	447	0	337	0	16			800
Haveri	0.21	480	0.32	312	0	8			800
Kodagu	0	436	0	346	0	18			800
Kolar	0.20	504	0	284	0	12			800
Koppal	0	501	0.34	291	0	8			800
Mandya	0	482	0.33	301	0	17			800
Mysore	0.18	552	0	241	0	7			800
Raichur	0.62	483	0	312	0	5			800
Ramnagaram	0.20	491	0	298	0	11			800
Shimoga	0	454	0	333	0	13			800
Tumkur	0.38	521	0	266	0	13			800
Udupi	0	191	0.18	567	2.38	42			800
Uttara Kannada	0.29	348	0	417	0	34	0	1	800
Yadgir	0.21	474	0.31	319	0	7			800

Table 21 HIV Prevalence (%) among ANC Clinic Attendees by Literacy Status and Districts

State/District	1. Illiterate Total		2. Literate and till 5th standard		3. 6th to 10th standard		4. 11th to Graduation		5. Post Graduation		
	%	Total	%	Total	%	Total	%	Total	%	Total	Total
Karnataka	0.45	2234	0.29	2090	0.22	12541	0.14	7233	0.14	690	24800
Bagalkot	0.81	123	0.71	140	0.30	671	0.50	201	0	65	1200
Bangalore	0	50	0	82	0.71	421	0.46	219	3.70	27	800
Bangalore Rural	0	29	0	21	0.23	430	0.34	295	0	25	800
Belgaum	0	65	1.27	79	0.41	487	0.68	148	0	21	800
Bellary	0	215	0	157	0	586	0	202	0	37	1200
Bidar	0	118	0	112	0.28	359	0	175	0	36	800
Bijapur	1.33	150	0	60	0.24	413	0.72	139	0	38	800
Chamarajanagar	2.38	42	0	20	0.23	443	0	291	0	3	800
Chikballapur	0	36	0	154	0.24	409	0	158	0	43	800
Chikmagalur	0	49	0	60	0	394	0.43	235	0	62	800
Chitradurga	0	22	1.12	89	0	441	0	237	0	11	800
Dakshina Kannada	0	15	0	79	0.22	459	0	196	0	51	800
Davanagere	0	30	2.08	48	0.22	451	0.78	258	0	13	800
Dharwad	0	9	0.56	178	0.26	388	0	224	0	1	800
Gadag	0	38	0	38	0.19	528	0	187	0	9	800
Gulbarga	0	226	0	34	0.56	360	0	145	0	30	800
Hassan	0	37	0	35	0.31	327	0	393	0	8	800
Haveri	0	48	0	45	0.41	483	0	220	0	4	800
Kodagu	0	40	0	44	0	302	0	376	0	36	800
Kolar	0	24	0	27	0.26	389	0	343	0	17	800
Koppal	0.78	128	0	88	0	412	0	153	0	19	800
Mandya	0	24	0	24	0.28	355	0	357	0	40	800
Mysore	0	22	0	26	0.23	426	0	312	0	14	800
Raichur	1.42	211	0	132	0	323	0	131	0	3	800
Ramnagaram	0	29	0	46	0.24	412	0	301	0	12	800
Shimoga	0	19	0	20	0	398	0	348	0	15	800
Tumkur	0	16	3.03	33	0.27	375	0	369	0	7	800
Udupi	0	19	0	32	0.21	470	0.39	255	0	24	800
Uttara Kannada	0	24	0	111	0	388	0.38	266	0	11	800
Yadgir	0.53	376	0	76	0	241	0	99	0	8	800

Table 22 : HIV Prevalence (%) among ANC Clinic Attendees by Order of Pregnancy and districts

State/District	First		2. Second		3. Third		4. Fourth or more		
	%	N	%	N	%	N	%	N	Total
Karnataka	0.24	10805	0.19	9475	0.23	3487	0.20	1024	24800
Bagalkot	0.91	439	0.24	423	0	246	0	90	1200
Bangalore	0.57	351	0.60	335	0	95	5.26	19	800
Bangalore Rural	0	382	0.62	325	0	78	0	15	800
Belgaum	0.60	333	0	268	1.36	147	0	52	800
Bellary	0	512	0	436	0	197	0	55	1200
Bidar	0.32	315	0	252	0	169	0	61	800
Bijapur	1.07	280	0	280	0.59	170	0	70	800
Chamarajanagar	0.53	377	0	331	0	72	0	20	800
Chikballapur	0.32	309	0	390	0	85	0	15	800
Chikmagalur	0.26	384	0	334	0	64	0	17	800
Chitradurga	0.25	398	0	282	0	96	0	24	800
Dakshina Kannada	0.28	351	0	297	0	105	0	47	800
Davanagere	0.28	356	0.63	317	0.93	107	0	20	800
Dharwad	0.47	215	0	421	0.67	149	0	15	800
Gadag	0	338	0.31	319	0	121	0	22	800
Gulbarga	0	312	0.75	268	0	173	0	47	800
Hassan	0.25	398	0	274	0	100	0	28	800
Haveri	0	339	0.34	298	0.81	124	0	39	800
Kodagu	0	419	0	286	0	74	0	19	800
Kolar	0	365	0.29	339	0	74	0	22	800
Koppal	0	322	0.34	290	0	132	0	56	800
Mandya	0	404	0.34	298	0	85	0	13	800
Mysore	0	398	0.32	315	0	73	0	14	800
Raichur	1.07	280	0	296	0	161	0	63	800
Ramnagaram	0	339	0	340	0.96	104	0	17	800
Shimoga	0	424	0	292	0	67	0	17	800
Tumkur	0	372	0.30	333	1.27	79	0	16	800
Udupi	0.24	419	0.34	291	0	71	0	19	800
Uttara Kannada	0	366	0.34	293	0	100	0	41	800
Yadgir	0.32	308	0	252	0	169	1.41	71	800

Table 23: HIV Prevalence (%) among ANC Clinic Attendees by Duration of Pregnancy and districts

State/District	First trimester		Second trimester		Third trimester		Total
	%	N	%	N	%	N	
Karnataka	0.22	5828	0.29	8412	0.16	10518	24800
Bagalkot	0.47	212	0.63	480	0.20	507	1200
Bangalore	1.26	159	0.93	321	0	319	800
Bangalore Rural	0.47	215	0	346	0.42	236	800
Belgaum	1.32	76	0.52	381	0.29	343	800
Bellary	0	216	0	576	0	404	1200
Bidar	0	238	0.32	309	0	251	800
Bijapur	0	135	0.88	227	0.46	438	800
Chamarajanagar	0.54	367	0	148	0	284	800
Chikballapur	0	201	0	329	0.38	264	800
Chikmagalur	0.32	311	0	251	0	237	800
Chitradurga	0	220	0.35	283	0	297	800
Dakshina Kannada	0	184	0	244	0.27	370	800
Davanagere	0	233	0.81	248	0.63	319	800
Dharwad	0.51	394	0	262	0	135	800
Gadag	0	228	0	212	0.28	360	800
Gulbarga	0	161	0.39	258	0.26	379	800
Hassan	0	213	0.54	184	0	402	800
Haveri	0	267	0.86	232	0	301	800
Kodagu	0	174	0	222	0	401	800
Kolar	0	131	0.36	281	0	388	800
Koppal	0	84	0.51	197	0	517	800
Mandya	0	163	0	242	0.25	395	800
Mysore	0.78	129	0	250	0	421	800
Raichur	0	170	0	267	0.83	360	800
Ramnagaram	0	166	0.35	286	0	347	800
Shimoga	0	166	0	287	0	347	800
Tumkur	0.58	173	0	241	0.26	386	800
Udupi	0	116	0.37	269	0.24	415	800
Uttara Kannada	0	221	0.36	281	0	298	800
Yadgir	0.95	105	0.34	298	0	397	800

Table 24 : HIV Prevalence (%) among ANC Clinic Attendees by ANC service uptake and districts

State/District	Yes		No		Total
	%	N	%	N	
Karnataka	0.24	20230	0.11	4537	24800
Bagalkot	0.44	900	0.33	299	1200
Bangalore	0.63	795	0	5	800
Bangalore Rural	0.25	787	0	2	800
Belgaum	0.56	710	0	90	800
Bellary	0	948	0	250	1200
Bidar	0.23	444	0	356	800
Bijapur	0.59	681	0	119	800
Chamarajanagar	0.16	632	0.61	165	800
Chikballapur	0.13	741	0	49	800
Chikmagalur	0	573	0.44	227	800
Chitradurga	0.15	665	0	135	800
Dakshina Kannada	0.15	671	0	128	800
Davanagere	0.59	682	0	118	800
Dharwad	0.26	782	0	17	800
Gadag	0.15	660	0	140	800
Gulbarga	0.31	645	0	154	800
Hassan	0.15	679	0	121	800
Haveri	0.77	260	0	540	800
Kodagu	0	598	0	201	800
Kolar	0.14	702	0	98	800
Koppal	0.15	651	0	148	800
Mandya	0.14	712	0	88	800
Mysore	0	658	0.70	142	800
Raichur	0.51	591	0	209	800
Ramnagaram	0.13	787	0	13	800
Shimoga	0	358	0	442	800
Tumkur	0.27	749	0	51	800
Udupi	0.26	767	0	32	800
Uttara Kannada	0.13	782	0	18	800
Yadgir	0.16	620	0.56	180	800

Table 25: HIV Prevalence (%) among ANC Clinic Attendees by Source of Referral

State/District	1. Self Referral		2. Family/ Relatives/ Neighbors/ Friends		3. NGO		4. Private (Doctor/ Nurses)		5. Govt (including, ASHA/ ANM)		6. ICTC / ART Centre		Total
	%	N	%	N	%	N	%	N	%	N	%	N	
Karnataka	0.28	3626	0.23	5279	0	18	2.13	94	0.18	15764	100.00	2	24800
Bagalkot	0.87	229	0.38	266	0	1			0.28	704			1200
Bangalore	0.48	207	0	125	0	1			0.64	466	100.00	1	800
Bangalore Rural	0	11	0	1	0	2			0.25	786			800
Belgaum	1.11	90	0	77	0	1	28.57	7	0.16	625			800
Bellary	0	177	0	318					0	704			1200
Bidar	0	15	0.75	134	0	1			0	648			800
Bijapur	0	2	0.54	373					0.47	425			800
Chamarajanagar			0.56	356					0	441			800
Chikballapur	0	118	0.67	150	0	2			0	529			800
Chikmagalur	0	92	0	160	0	1	0	11	0.19	536			800
Chitradurga	0	3	0	43			0	4	0.13	750			800
Dakshina Kannada	0	141	0	71			0	23	0.18	564			800
Davanagere	0	88	0	8			0	10	0.58	692			800
Dharwad	0	15	0	27	0	1	0	5	0.27	750			800
Gadag	0	170	0	311					0.31	319			800
Gulbarga	3.70	27	0.35	284	0	3			0	485			800
Hassan	0.25	407	0	131			0	7	0	255			800
Haveri	1.32	76			0	2			0.14	722			800
Kodagu	0	221	0	119			0	6	0	451			800
Kolar	0	392	0	59					0.29	349			800
Koppal	0	100	0	103					0.17	596			800
Mandya	0	28	0.27	371					0	401			800
Mysore	0	41	0.19	518					0	241			800
Raichur	0.24	417	0	10			0	5	0.27	367	100.00	1	800
Ramnagaram	0	99	0.19	519			0	6	0	176			800
Shimoga	0	56	0	238	0	1			0	505			800
Tumkur	0	6	0.25	395	0	1			0.25	398			800
Udupi	0.53	375	0	49			0	1	0	375			800
Uttara Kannada	0	19	0	57	0	1	0	3	0.14	720			800
Yadgir	0	4	0	6			0	6	0.26	784			800

Table 26 : Prevalence among ANC Clinic Attendees by Place of Residence and district

State/District	Urban		Rural		Total
	%	N	%	N	
Karnataka	0.15	9457	0.26	15243	24800
Bagalkot	0	384	0.62	813	1200
Bangalore	0.53	753	2.13	47	800
Bangalore Rural	0.23	441	0.28	355	800
Belgaum	0	215	0.68	585	800
Bellary	0	498	0	699	1200
Bidar	0.25	398	0	401	800
Bijapur	0	282	0.77	518	800
Chamarajanagar	0	148	0.31	645	800
Chikballapur	0	220	0.18	561	800
Chikmagalur	0	204	0.17	590	800
Chitradurga	0	250	0.18	549	800
Dakshina Kannada	0	223	0.17	577	800
Davanagere	0.37	270	0.57	530	800
Dharwad	0.22	449	0.30	332	800
Gadag	0.33	305	0	495	800
Gulbarga	0.27	369	0.24	418	800
Hassan	0	267	0.19	532	800
Haveri	0.37	268	0.19	531	800
Kodagu	0	78	0	712	800
Kolar	0	423	0.27	375	800
Koppal	0	221	0.17	579	800
Mandya	0.41	245	0	555	800
Mysore	0	387	0.24	413	800
Raichur	0	325	0.63	474	800
Ramnagaram	0.19	518	0	282	800
Shimoga	0	367	0	433	800
Tumkur	0	190	0.33	610	800
Udupi	0	115	0.29	685	800
Uttara Kannada	0.32	310	0	486	800
Yadgir	0	334	0.43	461	800

Table 27 : HIV Prevalence among ANC Clinic Attendees by Current Occupation of Respondent

State/District		Agricultural Labourer		Non-Agricultural Labourer		Domestic Servant		Skilled / Semiskilled worker		Petty business / small shop		Large Business/Self employed		Service(Govt./Pvt.)		Student		Hotel staff		Truck driver/Helper		Local transport Worker		Agricultural cultivator/		Housewife		Total
Karnataka	0.27%	1882	0.50%	802	0.18%	542	0.28%	360	0.00%	95	0.00%	13	0.00%	565	0.00%	44	0.00%	13		2	0.41%	489	0.21%	19988	24800
Bagalkot	0%	49	1.56%	64	0.00%	21	5.00%	20	0.00%	9		1	0.00%	18		2		2			0.00%	26	0.30%	988	1200
Bangalore	0%	3	0.00%	20	0.00%	11	0.00%	4				1	0.00%	30		1							0.68%	730	800
Bangalore Rural	0%	7	0.00%	35			0.00%	15	0.00%	3			0.00%	10		1					0.00%	1	0.27%	728	800
Belgaum	0%	17	5.26%	19	0.28%	356	0.00%	5	0.00%	4			0.00%	12							20.00%	10	0.00%	377	800
Bellary	0%	196	0.00%	140	0.00%	127	0.00%	23	0.00%	5			0.00%	17				2			0.00%	27	0.00%	662	1200
Bidar	0%	32	0.00%	6	0.00%	1	0.00%	2	0.00%	1			0.00%	9		4		1		1	0.00%	4	0.14%	739	800
Bijapur	0.64%	157	0.00%	6			0.00%	2	0.00%	3			0.00%	6							0.00%	7	0.48%	619	800
Chamarajanagar	0%	12	0.00%	43									0.00%	13							0.00%	376	0.56%	354	800
Chikballapur	0%	115	0.00%	74			0.00%	6	0.00%	21			0.00%	22									0.18%	562	800
Chikmagalur	0%	109	0.00%	18	0.00%	1	0.00%	2	0.00%	6		2	0.00%	24		1		4					0.16%	633	800
Chitradurga	0%	68	0.00%	10			0.00%	3	0.00%	3			0.00%	13		4					0.00%	26	0.15%	673	800
Dakshina Kannada	0%	5	0.00%	26	0.00%	3	0.00%	190	0.00%	4		2	0.00%	55		1		1			0.00%	1	0.20%	512	800
Davanagere	0%	3	0.00%	2	0.00%	1	0.00%	1	0.00%	3			0.00%	2									0.51%	788	800
Dharwad	0%	5	0.00%	60			0.00%	2					0.00%	2									0.27%	731	800
Gadag	0%	2	0.00%	6	0.00%	4	0.00%	4					0.00%	5									0.13%	779	800
Gulbarga	0%	88	0.00%	12			0.00%	2					0.00%	10		10		1					0.30%	677	800
Hassan	0%	76	0.00%	12	0.00%	1	0.00%	1				1	0.00%	14		3							0.14%	692	800
Haveri	0%	12	0.00%	13			0.00%	5	0.00%	1			0.00%	11									0.26%	758	800
Kodagu	0%	115	0.00%	2			0.00%	6	0.00%	2		1	0.00%	61		3							0.00%	609	800
Kolar							0.00%	1					0.00%	24		5							0.13%	770	800
Koppal	0.33%	302	0.00%	19			0.00%	9	0.00%	2			0.00%	15		2					0.00%	10	0.00%	441	800
Mandya	0%	5	0.00%	11									0.00%	30									0.13%	754	800
Mysore	0%	10	0.00%	6			0.00%	2	0.00%	1			0.00%	11		2							0.13%	768	800
Raichur	0.95%	211	0.87%	115	0.00%	3	0.00%	13	0.00%	14			0.00%	16		1				1			0.00%	426	800
Ramnagaram	0%	1	0.00%	17	0.00%	2	0.00%	3	0.00%	1			0.00%	14				1					0.13%	761	800
Shimoga	0%	12	0.00%	4			0.00%	1	0.00%	1			0.00%	20		1					0.00%	1	0.00%	759	800
Tumkur	0%	3	0.00%	6			0.00%	10				2	0.00%	23									0.26%	756	800
Udupi			0.00%	12			0.00%	11	0.00%	2			0.00%	34									0.27%	741	800
Uttara Kannada	0%	6	0.00%	8	0.00%	10	0.00%	5	0.00%	1		2	0.00%	31				1					0.14%	736	800
Yadgir	0.38%	261	2.78%	36	0.00%	1	0.00%	12	0.00%	8		1	0.00%	13		3							0.00%	465	800

Table 28 : HIV Prevalence among ANC Clinic Attendees by Current Occupation of Spouse

State/District	Agricultural Labourer		Non-Agricultural Labourer		Domestic Servant		Skilled / Semiskilled worker		Petty business / small shop		Large Business/Self employed		Service (Govt./Pvt.)		Student		Hotel staff		Truck driver/Helper		Local transport Worker		Agricultural cultivator/		Unemployed		Not Applicable		G Total
	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	
Karnataka	**0.22%**	**4149**	**0.24%**	**6627**	**0**	**64**	**0.15%**	**3269**	**0.16%**	**1920**	**0.19%**	**522**	**0.19%**	**3078**	**0**	**6**	**0.21%**	**487**	**0.00%**	**503**	**0.22%**	**2280**	**0.43%**	**1844**	**0**	**18**	**0.00%**	**31**	**24800**
Bagalkot	0.68%	**147**	0.28%	**363**			0.00%	**92**	1.05%	**95**	0.00%	**33**	0.00%	**161**		**2**	4.00%	**25**	0.00%	**20**	1.03%	**97**	0.00%	**159**		**4**	0.00%	**2**	1200
Bangalore	0.00%	**41**	1.03%	**195**		**2**	0.54%	**184**	1.79%	**56**	0.00%	**21**	0.61%	**163**			0.00%	**6**	0.00%	**28**	0.00%	**104**							800
Bangalore Rural	0.00%	**43**	0.37%	**270**			0.00%	**191**	0.00%	**28**	0.00%	**21**	0.00%	**97**			0.00%	**9**	0.00%	**2**	0.00%	**70**	1.45%	**69**					800
Belgaum	0.00%	**33**	0.00%	**236**		**1**	1.33%	**75**	0.00%	**70**			0.00%	**105**			0.00%	**10**	0.00%	**15**	0.00%	**54**	1.50%	**200**		**1**			800
Bellary	0.00%	**232**	0.00%	**375**		**13**	0.00%	**182**	0.00%	**59**	0.00%	**31**	0.00%	**94**			0.00%	**11**	0.00%	**47**	0.00%	**84**	0.00%	**68**			0.00%	**4**	1200
Bidar	0.00%	**116**	0.43%	**230**			0.00%	**50**	0.00%	**79**	0.00%	**31**	0.00%	**93**			0.00%	**25**	0.00%	**40**	0.00%	**97**	0.00%	**38**			0.00%	**1**	800
Bijapur	1.72%	**116**	0.00%	**60**			0.00%	**149**	0.00%	**78**	0.00%	**2**	0.00%	**117**			0.00%	**1**	0.00%	**3**	0.92%	**109**	0.61%	**165**					800
Chamarajanagar	0.00%	**102**	0.74%	**269**			0.00%	**109**	0.00%	**68**	0.00%	**4**	0.00%	**94**			0.00%	**12**	0.00%	**2**	0.00%	**91**	0.00%	**49**					800
Chikballapur	0.36%	**279**	0.00%	**179**			0.00%	**75**	0.00%	**118**	0.00%	**13**	0.00%	**86**			0.00%	**1**	0.00%	**1**	0.00%	**46**	0.00%	**2**					800
Chikmagalur	0.37%	**270**	0.00%	**235**		**1**	0.00%	**35**	0.00%	**39**	0.00%	**25**	0.00%	**48**			0.00%	**19**	0.00%	**10**	0.00%	**49**	0.00%	**67**			0.00%	**2**	800
Chitradurga	0.00%	**144**	0.46%	**218**			0.00%	**58**	0.00%	**50**	0.00%	**13**	0.00%	**71**			0.00%	**23**	0.00%	**28**	0.00%	**92**	0.00%	**100**			0.00%	**3**	800
DakshinaKannada	0.00%	**14**	0.00%	**252**			0.47%	**215**	0.00%	**60**	0.00%	**7**	0.00%	**68**			0.00%	**38**	0.00%	**1**	0.00%	**110**	0.00%	**31**			0.00%	**4**	800
Davanagere	0.00%	**193**	0.59%	**169**		**25**	0.00%	**87**	0.00%	**66**	0.00%	**3**	2.99%	**67**			0.00%	**17**	0.00%	**7**	1.28%	**78**	0.00%	**86**		**2**			800
Dharwad	0.00%	**146**	0.38%	**531**		**3**	0.00%	**50**	0.00%	**15**	0.00%	**2**	0.00%	**10**			0.00%	**4**	0.00%	**4**	0.00%	**32**				**1**	0.00%	**1**	800
Gadag	0.00%	**162**	0.00%	**209**			0.00%	**128**	1.20%	**83**	0.00%	**21**	0.00%	**93**			0.00%	**11**	0.00%	**6**	0.00%	**72**	0.00%	**14**			0.00%	**1**	800
Gulbarga	0.00%	**188**	0.00%	**197**			1.19%	**84**	0.00%	**48**	0.00%	**22**	1.03%	**97**		**1**	0.00%	**14**	0.00%	**15**	0.00%	**110**	0.00%	**20**		**4**			800
Hassan	0.00%	**192**	0.68%	**146**			0.00%	**97**	0.00%	**97**	0.00%	**13**	0.00%	**94**			0.00%	**15**	0.00%	**119**			0.00%	**24**			0.00%	**3**	800
Haveri	0.00%	**188**	0.00%	**237**		**2**	0.00%	**73**	0.00%	**58**	0.00%	**25**	2.41%	**83**			0.00%	**7**	0.00%	**24**	0.00%	**63**	0.00%	**39**			0.00%	**1**	800
Kodagu	0.00%	**237**	0.00%	**54**		**1**	0.00%	**90**	0.00%	**61**	0.00%	**39**	0.00%	**135**			0.00%	**27**	0.00%	**11**	0.00%	**86**	0.00%	**56**			0.00%	**2**	800
Kolar	0.00%	**76**	0.37%	**268**			0.00%	**97**	0.00%	**64**	0.00%	**6**	0.00%	**171**			0.00%	**1**	0.00%	**5**	0.00%	**112**							800
Koppal	0.00%	**336**	0.00%	**148**		**16**	0.00%	**49**	0.00%	**28**	0.00%	**27**	0.00%	**64**			0.00%	**14**	0.00%	**11**	1.45%	**69**	0.00%	**37**			0.00%	**1**	800
Mandya	0.00%	**122**	0.57%	**175**			0.00%	**61**	0.00%	**79**	0.00%	**14**	0.00%	**134**			0.00%	**13**	0.00%	**34**	0.00%	**70**	0.00%	**95**		**1**	0.00%	**2**	800
Mysore	0.00%	**81**	0.00%	**218**			0.00%	**151**	0.00%	**75**	0.00%	**16**	0.00%	**69**			0.00%	**23**	0.00%	**4**	0.96%	**104**	0.00%	**59**					800
Raichur	1.38%	**218**	0.00%	**206**			0.00%	**120**	0.00%	**31**	0.00%	**3**	0.00%	**97**					0.00%	**4**	0.00%	**58**	0.00%	**60**		**2**	0.00%	**1**	800
Ramnagaram	0.00%	**55**	0.53%	**188**			0.00%	**143**	0.00%	**95**	0.00%	**11**	0.00%	**113**			0.00%	**10**	0.00%	**9**	0.00%	**89**	0.00%	**86**		**1**			800
Shimoga	0.00%	**150**	0.00%	**178**			0.00%	**92**	0.00%	**64**	0.00%	**46**	0.00%	**91**			0.00%	**12**	0.00%	**12**	0.00%	**71**	0.00%	**84**					800
Tumkur	0.00%	**24**	0.42%	**239**			0.00%	**94**	0.00%	**35**	0.00%	**34**	0.00%	**76**			0.00%	**5**	0.00%	**7**	0.00%	**84**	0.50%	**200**			0.00%	**2**	800
Udupi	0.00%	**2**	0.00%	**253**			0.86%	**116**	0.00%	**77**	0.00%	**2**	0.00%	**147**			0.00%	**110**			0.00%	**83**	11.11%	**9**			0.00%	**1**	800
Uttara Kannada	0.00%	**29**	0.00%	**186**			0.00%	**171**	0.00%	**35**	4.17%	**24**	0.00%	**270**			0.00%	**12**	0.00%	**26**	0.00%	**42**	0.00%	**3**		**2**			800
Yadgir	0.47%	**213**	0.00%	**143**			0.00%	**151**	0.00%	**109**	0.00%	**13**	0.00%	**70**		**3**	0.00%	**12**	0.00%	**8**	0.00%	**54**	4.17%	**24**					800

Table 29: HIV Prevalence among ANC Clinic Attendees by Migration status of Spouse

State/District	Yes		No		Not Applicable		Total
	%	N	%	N	%	N	
Karnataka	0.79	506	0.21	23873	0	30	24800
Bagalkot	0.88	114	0.37	1083	0	1	1200
Bangalore	0	7	0.63	792			800
Bangalore Rural	0	14	0.25	786			800
Belgaum	0	16	0.51	784			800
Bellary	0	8	0	1188	0	4	1200
Bidar			0.13	799	0	1	800
Bijapur	6.25	16	0.38	784			800
Chamarajanagar			0.25	800			800
Chikballapur	0	16	0.13	784			800
Chikmagalur	0	3	0.13	795	0	2	800
Chitradurga	0	2	0.13	795	0	3	800
Dakshina Kannada	0	6	0.13	790	0	4	800
Davanagere	0	1	0.50	799			800
Dharwad	0	11	0.25	788	0	1	800
Gadag			0.13	799	0	1	800
Gulbarga	0	9	0.25	791			800
Hassan	0	12	0.13	784	0	3	800
Haveri	0	1	0.49	412	0	1	800
Kodagu	0	18	0	779	0	2	800
Kolar	0	9	0.13	791			800
Koppal			0.13	799	0	1	800
Mandya	0	4	0.13	794	0	2	800
Mysore	0	1	0.13	799			800
Raichur	1.11	90	0.28	709	0	1	800
Ramnagaram	0	3	0.13	797			800
Shimoga	0	14	0	786			800
Tumkur	0	2	0.25	796	0	2	800
Udupi	0	95	0.28	704	0	1	800
Uttara Kannada	3.57	28	0	772			800
Yadgir	0	6	0.25	794			800

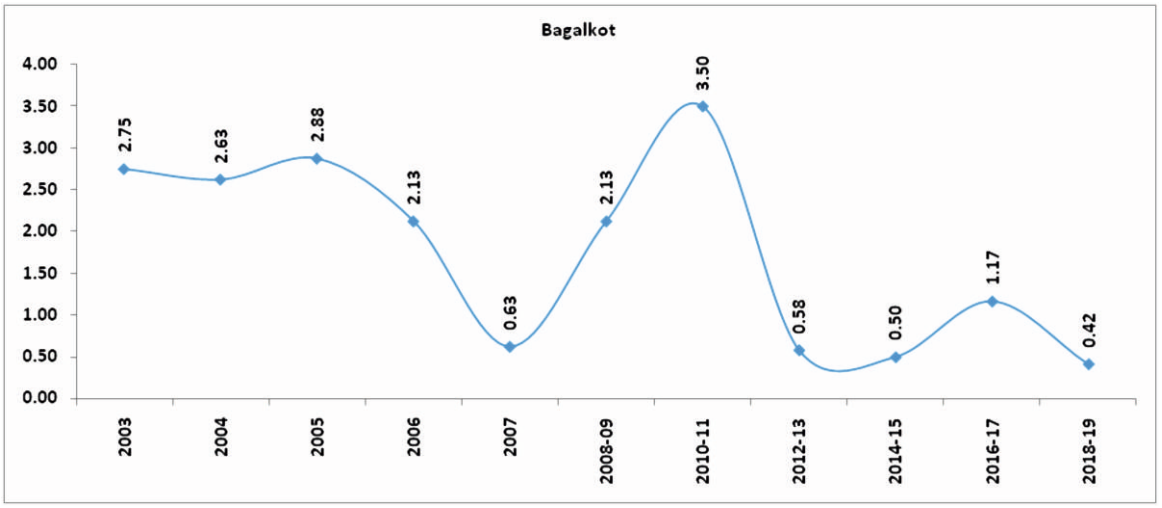
Table 30: HIV Prevalence among ANC Clinic Attendees based on HIV tested history

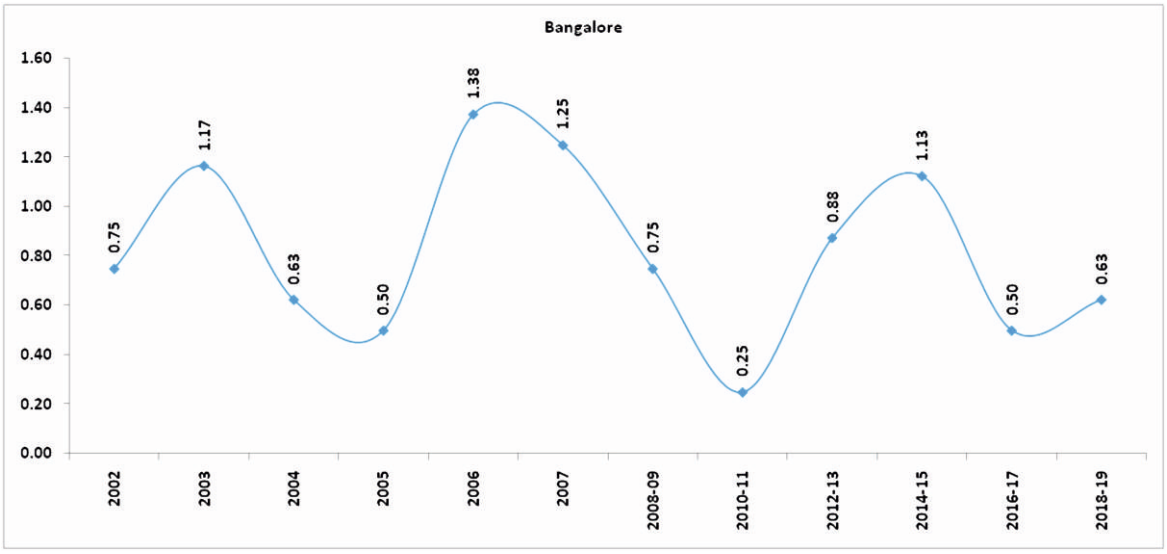
State/District	YES		NO		Total
	%	N	%	N	
Karnataka	0.24	16425	0.18	8374	24800
Bagalkot	0.36	835	0.55	365	1200
Bangalore	0.72	691	0	109	800
Bangalore Rural	0.22	457	0.29	343	800
Belgaum	1.09	276	0.19	524	800
Bellary	0	834	0	366	1200
Bidar	0	114	0.15	686	800
Bijapur	0.85	355	0.22	445	800
Chamarajanagar	0	615	1.08	185	800
Chikballapur	0.14	724	0	76	800
Chikmagalur	0	499	0.33	301	800
Chitradurga	0.21	487	0	313	800
Dakshina Kannada	0.14	730	0	70	800
Davanagere	0.52	573	0.44	227	800
Dharwad	0.26	757	0	43	800
Gadag	0.17	605	0	195	800
Gulbarga	0.36	281	0.19	519	800
Hassan	0.15	671	0	129	800
Haveri	0.55	361	0	439	800
Kodagu	0	490	0	309	800
Kolar	0.21	476	0	324	800
Koppal	0.63	160	0	640	800
Mandya	0.15	671	0	129	800
Mysore	0	683	0.85	117	800
Raichur	0.34	596	0.49	204	800
Ramnagaram	0.13	746	0	54	800
Shimoga	0	457	0	343	800
Tumkur	0.27	731	0	69	800
Udupi	0.32	634	0	166	800
Uttara Kannada	0.14	726	0	74	800
Yadgir	0	190	0.33	610	800

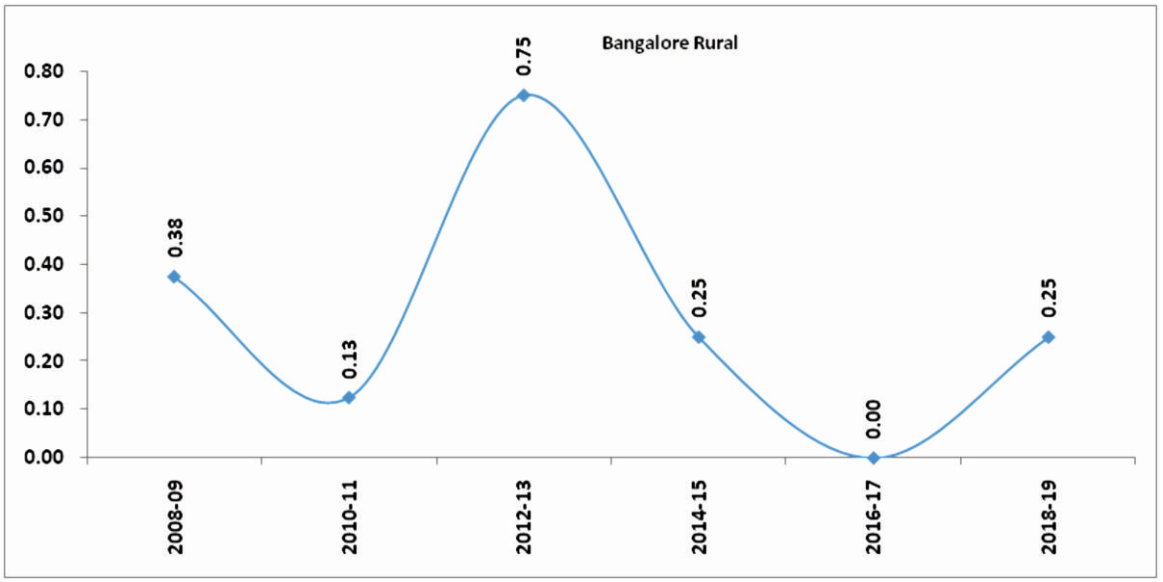
Table 31: District-wise HIV Prevalence trend 2002-2019

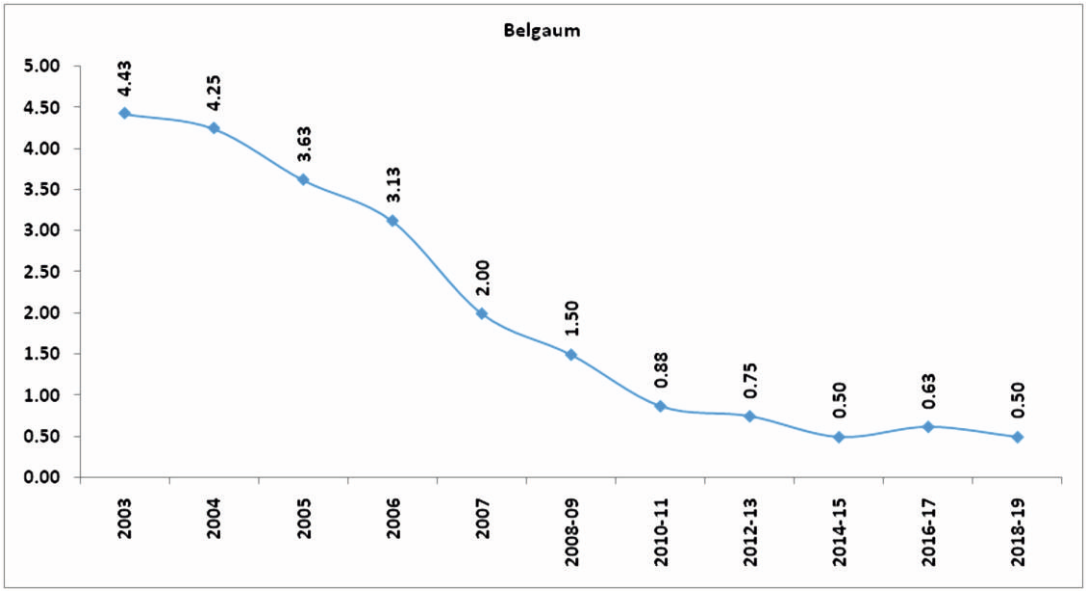
District	2002	2003	2004	2005	2006	2007	2009	2011	2013	2015	2017	2019
Bagalkot		2.75	2.63	2.88	2.13	0.63	2.13	3.50	0.58	0.50	1.17	0.42
Bangalore	0.75	1.17	0.63	0.50	1.38	1.25	0.75	0.25	0.88	1.13	0.50	0.63
Bangalore Rural							0.38	0.13	0.75	0.25	0.00	0.25
Belgaum		4.43	4.25	3.63	3.13	2.00	1.50	0.88	0.75	0.50	0.63	0.50
Bellary	3.02	1.63	1.13	0.88	1.38	0.38	1.13	1.25	0.50	0.25	0.25	0.00
Bidar	0.25	1.39	0.88	0.88	0.88	1.13	0.13	0.50	0.38	0.25	0.13	0.13
Bijapur	5.25	1.63	1.38	2.13	1.23	1.00	2.00	1.75	0.50	0.13	0.38	0.50
Chamrajnagar	0.50	0.51	1.00	1.63	1.38	1.00	0.50	0.88	1.25	0.63	0.25	0.25
Chikballapur		0.75	0.25	0.50	0.00	0.50	1.25	0.38	0.50	1.75	0.25	0.13
Chikmagalur		0.50	0.95	0.88	1.50	2.38	0.75	0.38	0.38	0.25	0.38	0.13
Chitradurga		0.38	0.75	0.63	0.25	0.25	0.50	1.25	0.88	1.00	1.13	0.13
Dakshina Kannada		0.88	1.38	0.38	0.75	0.13	0.75	0.25	0.50	0.13	0.13	0.13
Davangere	3.25	0.88	2.13	1.38	1.38	0.75	2.00	0.75	0.88	0.63	0.00	0.50
Dharwad	1.75	3.00	2.88	6.75	0.88	0.38	0.63	0.50	0.13	0.13	0.38	0.25
Gadag		0.88	1.13	1.13	0.88	0.50	0.50	1.13	0.38	0.25	0.38	0.13
Gulbarga		1.63	2.25	2.63	0.88	2.74	1.25	0.25	0.38	0.25	0.75	0.25
Hassan	0.75	0.75	1.00	1.38	2.38	1.25	0.88	0.75	0.63	0.63	0.13	0.13
Haveri		1.39	0.63	0.38	0.63	0.25	0.63	0.13	0.13	0.13	0.25	0.25
Kodagu		0.25	0.75	0.75	0.50	0.75	2.63	0.63	0.50	0.25	0.25	0.00
Kolar		1.25	1.25	1.00	1.50	0.25	0.50	0.25	0.25	0.13	0.00	0.13
Koppal		4.13	3.00	2.88	1.63	1.25	0.00	0.63	0.38	0.50	0.63	0.13
Mandya		1.13	1.13	1.00	0.25	1.25	0.13	0.50	1.13	0.54	0.13	0.13
Mysore		0.50	2.38	1.13	1.00	0.88	0.88	0.13	0.50	0.13	0.63	0.13
Raichur	2.75	1.63	1.13	1.63	1.38	0.50	0.50	0.25	0.50	0.25	0.88	0.38
Ramnagaram		1.88	2.50	0.88	0.50	0.13	0.63	0.50	0.75	0.00	0.25	0.13
Shimoga		0.75	0.50	0.88	0.50	0.38	1.00	0.00	0.25	0.38	0.13	0.00
Tumkur		1.88	1.50	1.00	0.75	1.13	1.13	1.50	0.50	0.25	0.25	0.25
Udupi	1.50	0.88	1.00	0.63	0.75	0.13	0.63	0.50	0.38	0.13	0.50	0.25
Uttara Kannada		1.00	1.38	0.75	1.35	0.50	0.13	0.38	0.25	0.25	0.25	0.13
Yadgir								0.63	0.38	0.00	0.13	0.25

5.2 HIV Prevalence trend at district level








Belgaum
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
4.43
4.25
3.63
3.13
2.00
1.50
0.88
0.75
0.50
0.63
0.50
2003
2004
2005
2006
2007
2008-09
2010-11
2012-13
2014-15
2016-17
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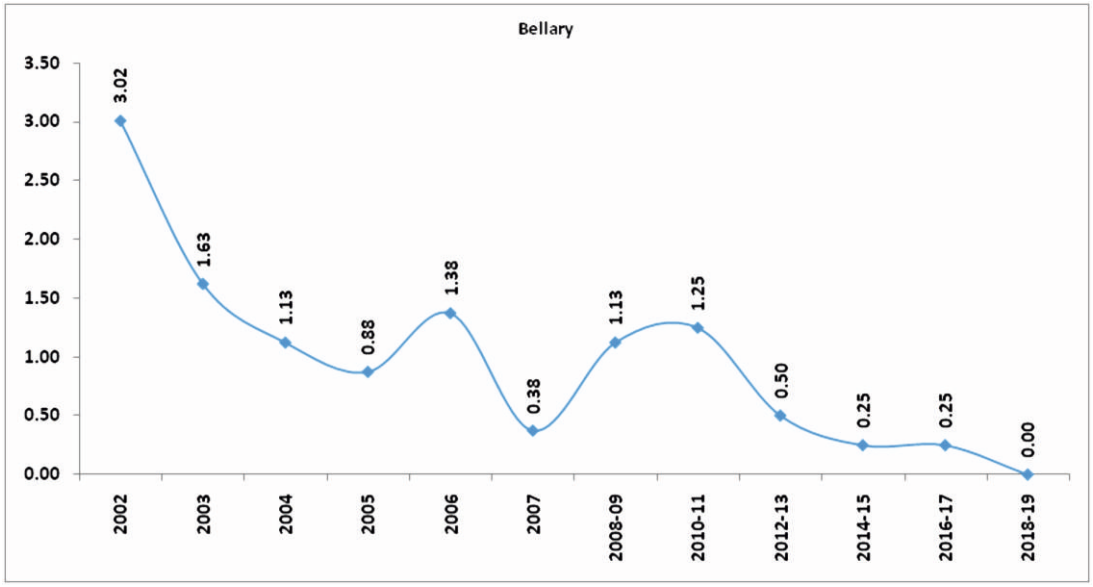
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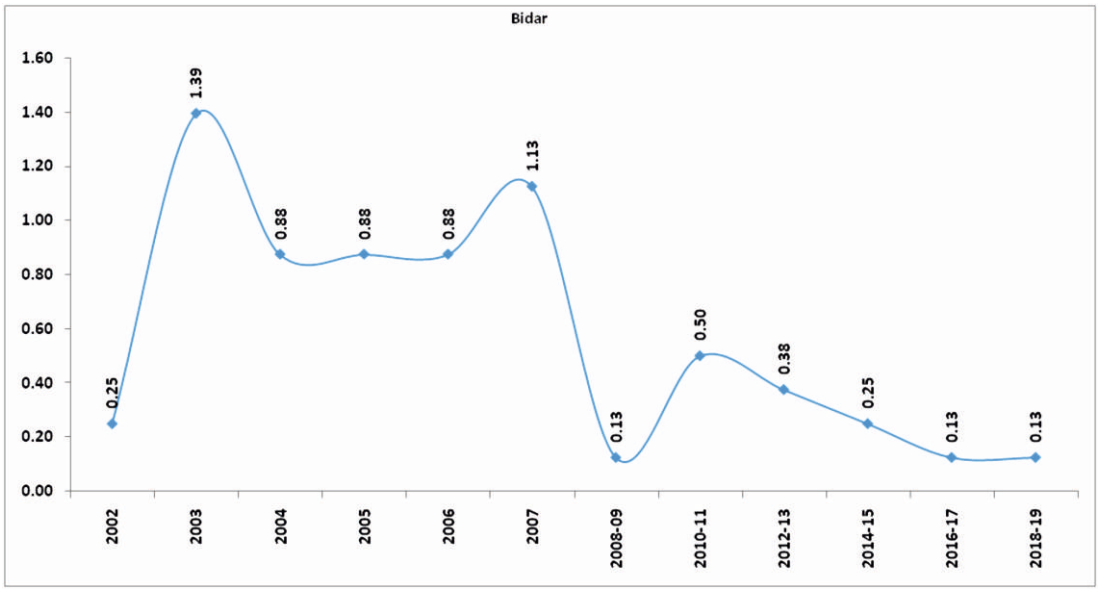
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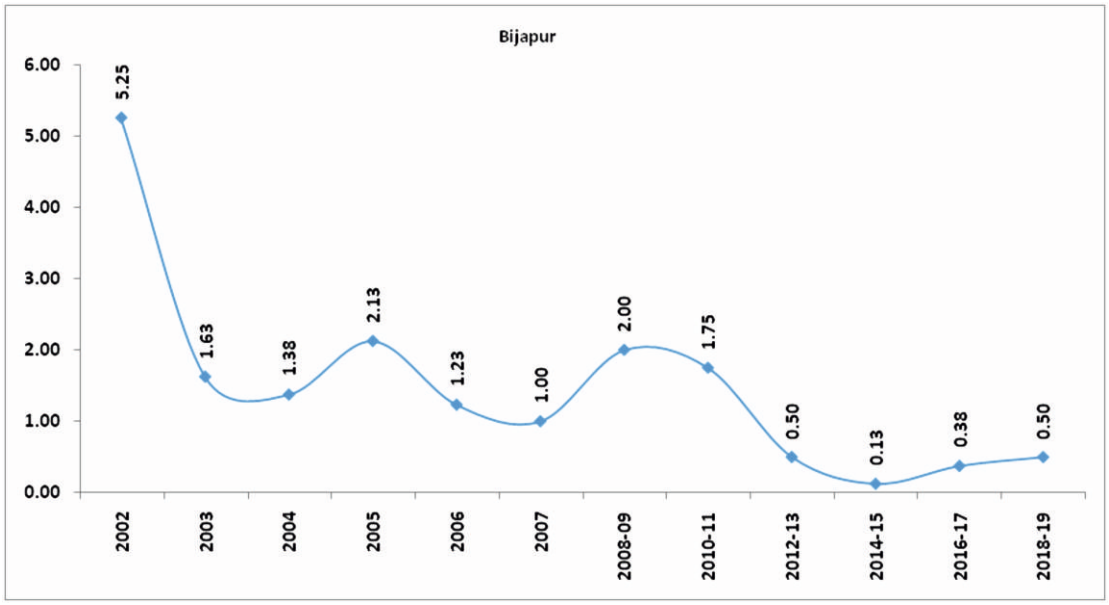
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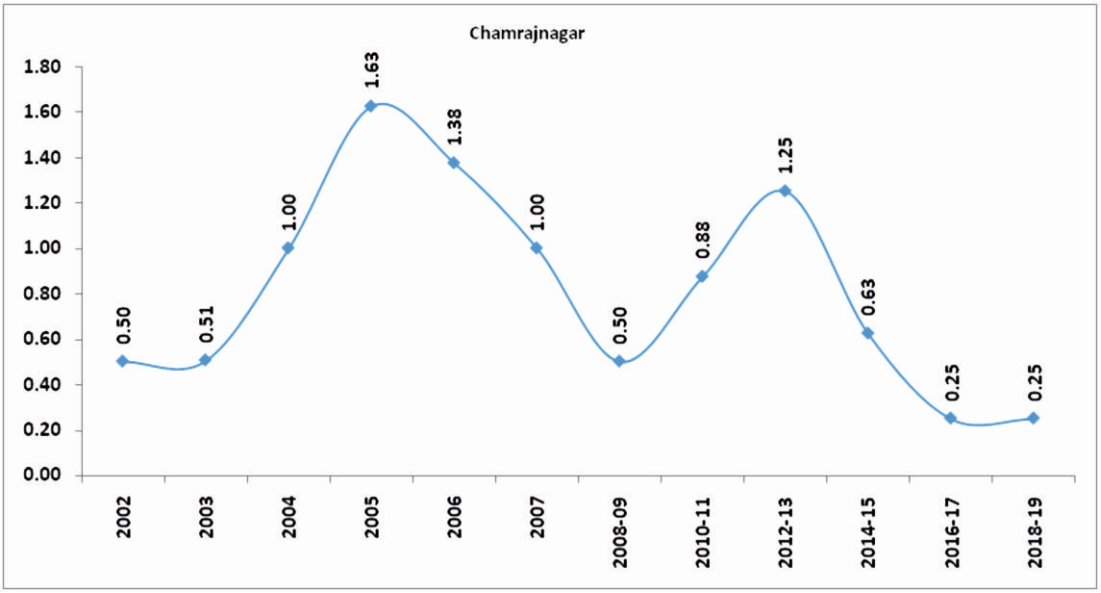
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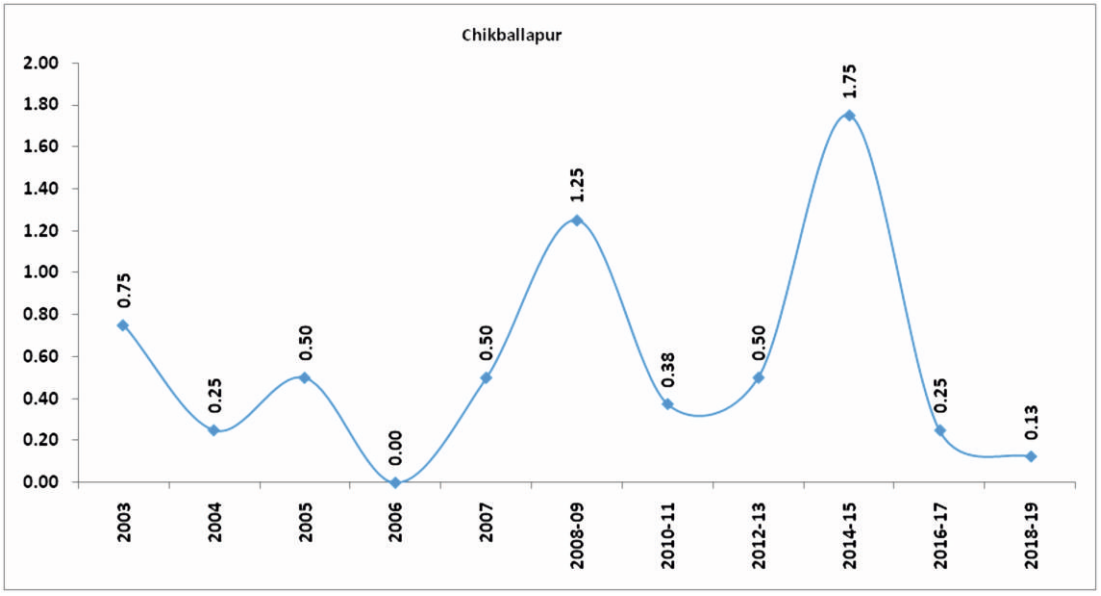
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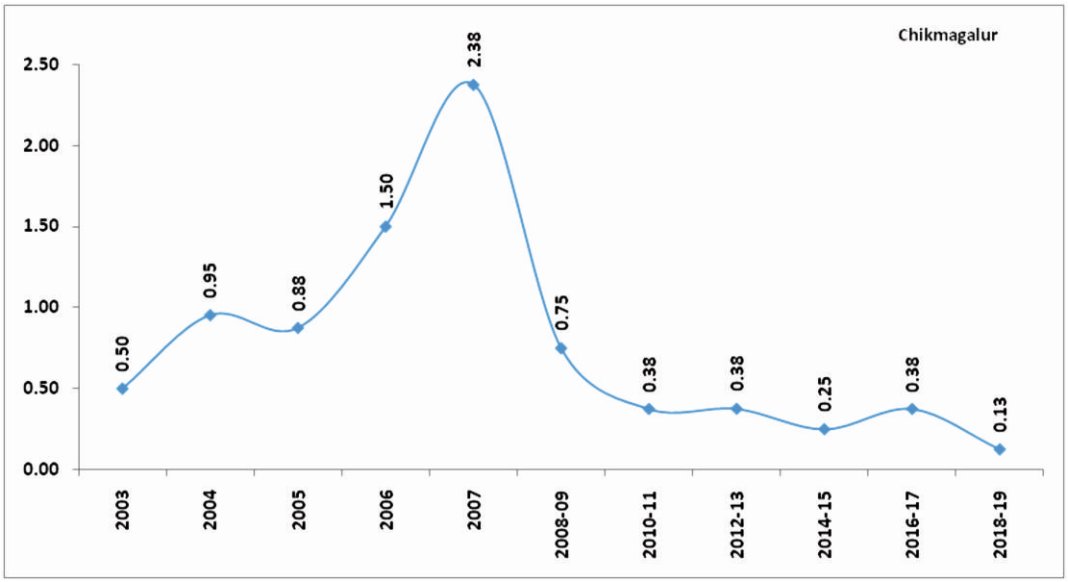
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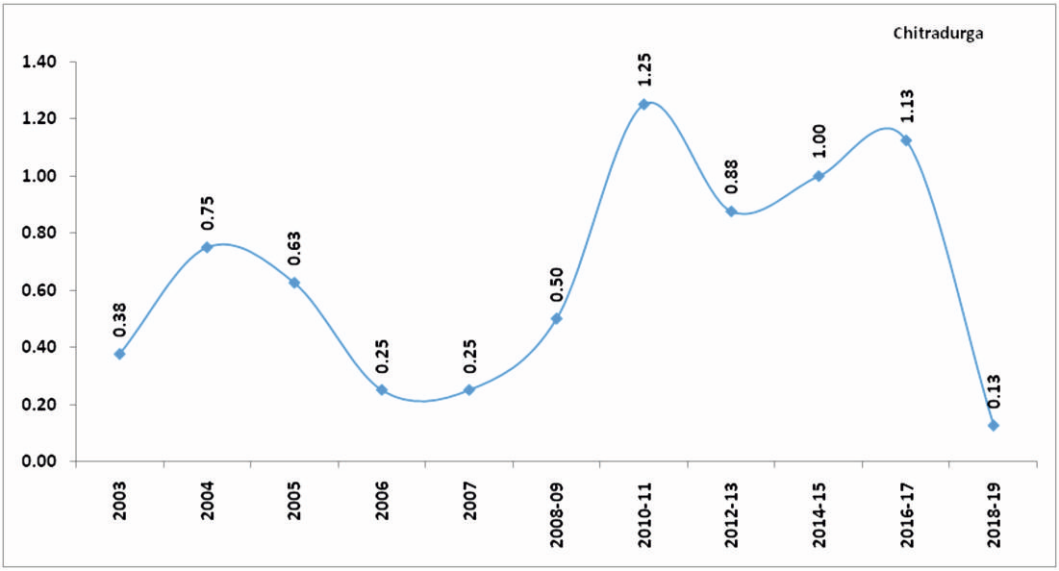
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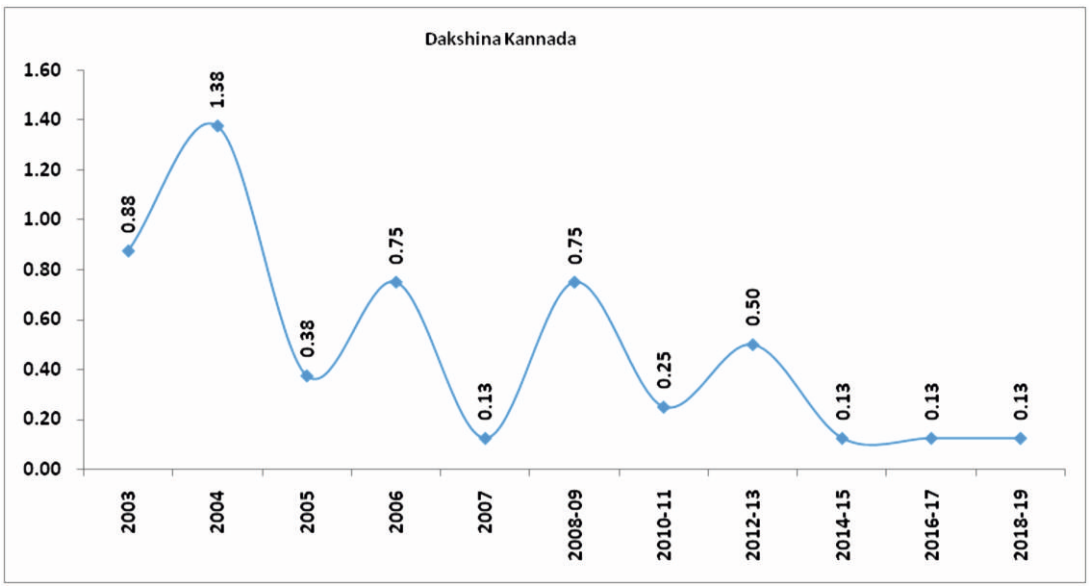
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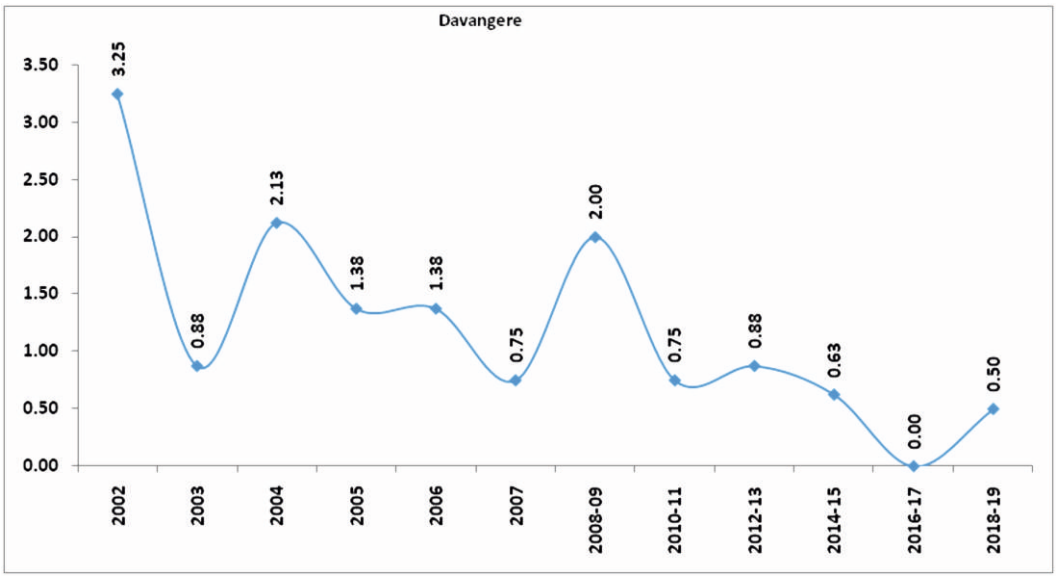
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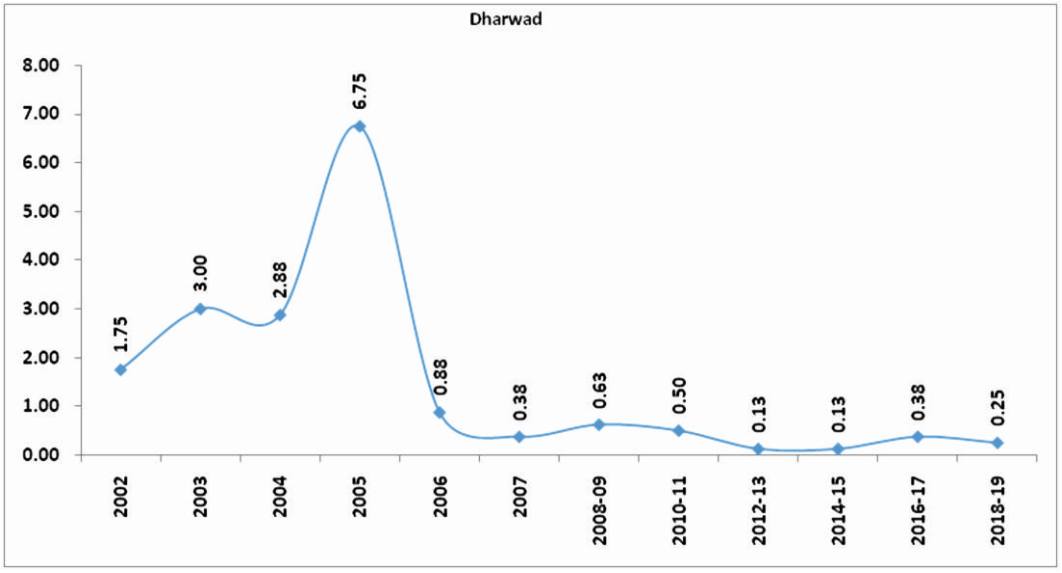
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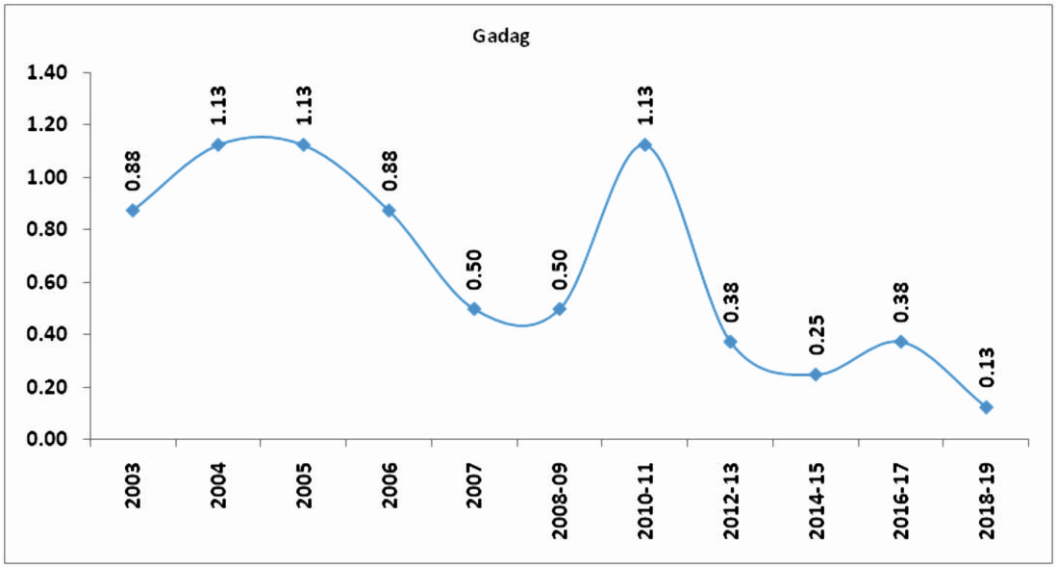
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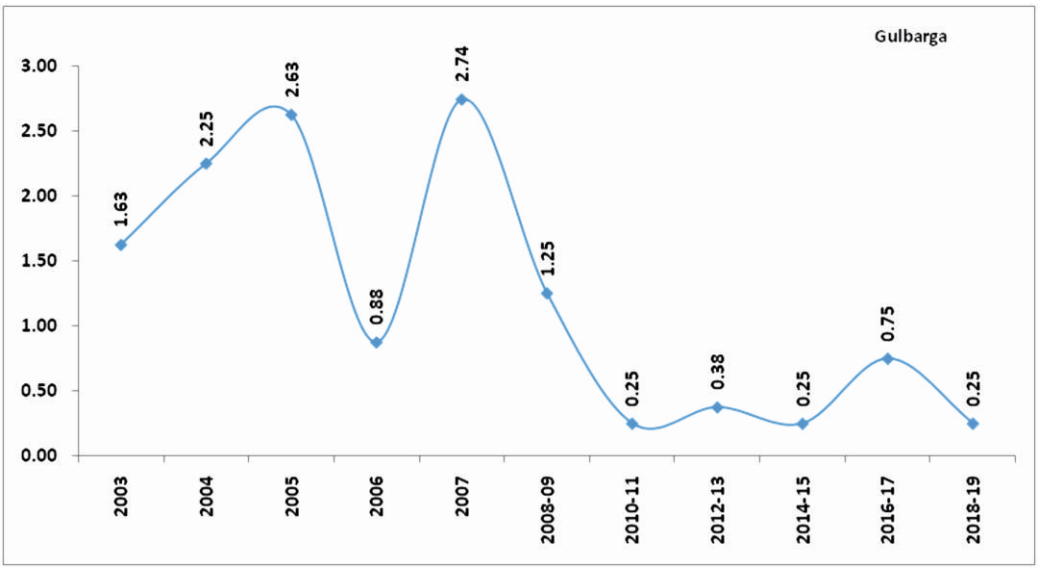
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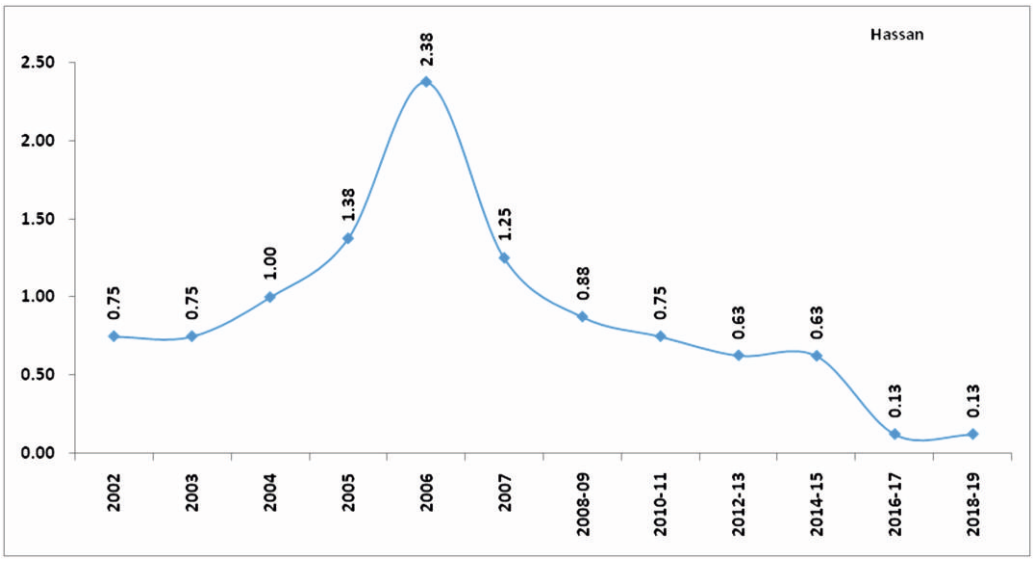
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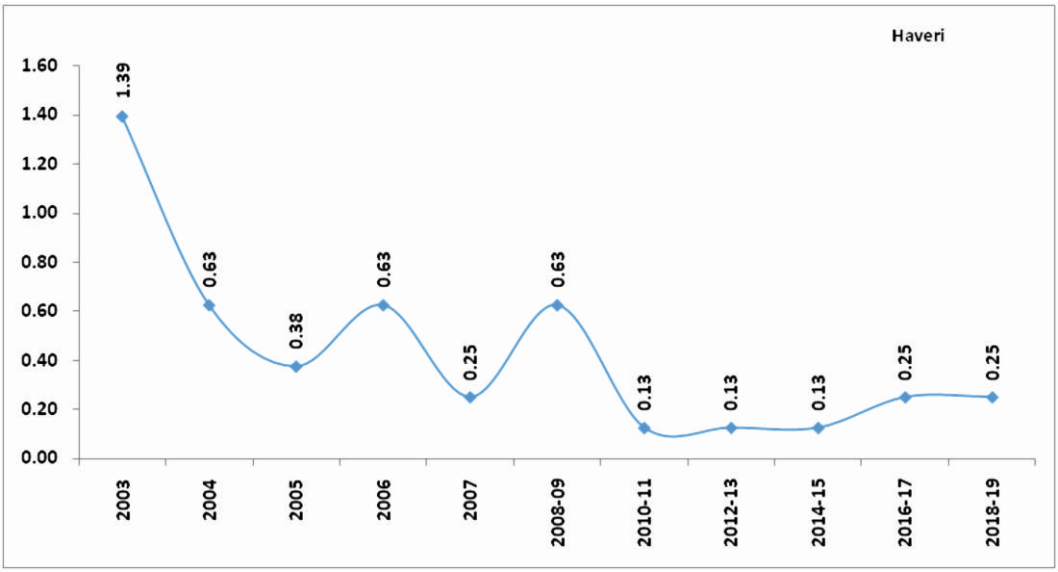
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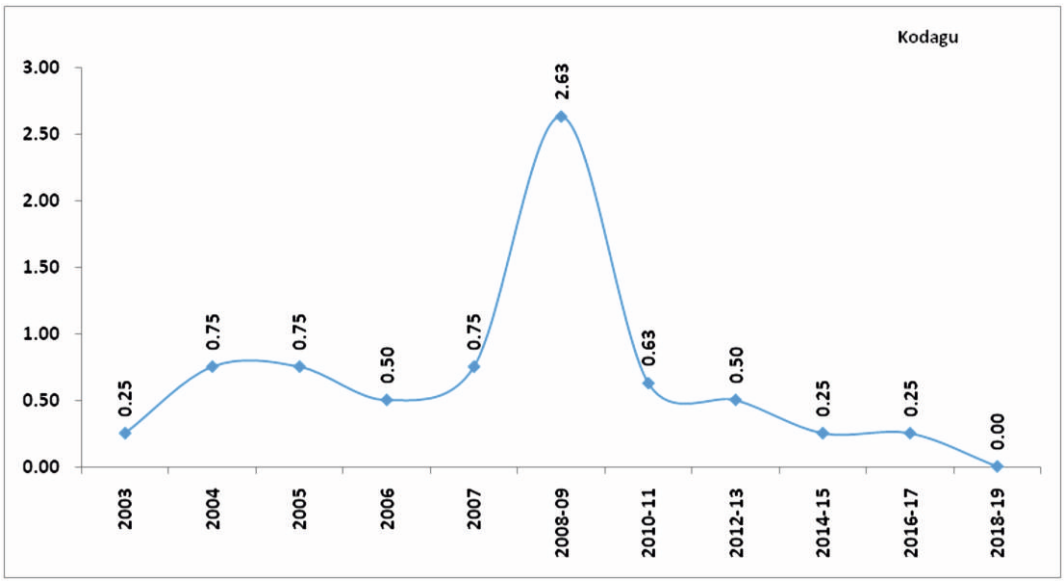
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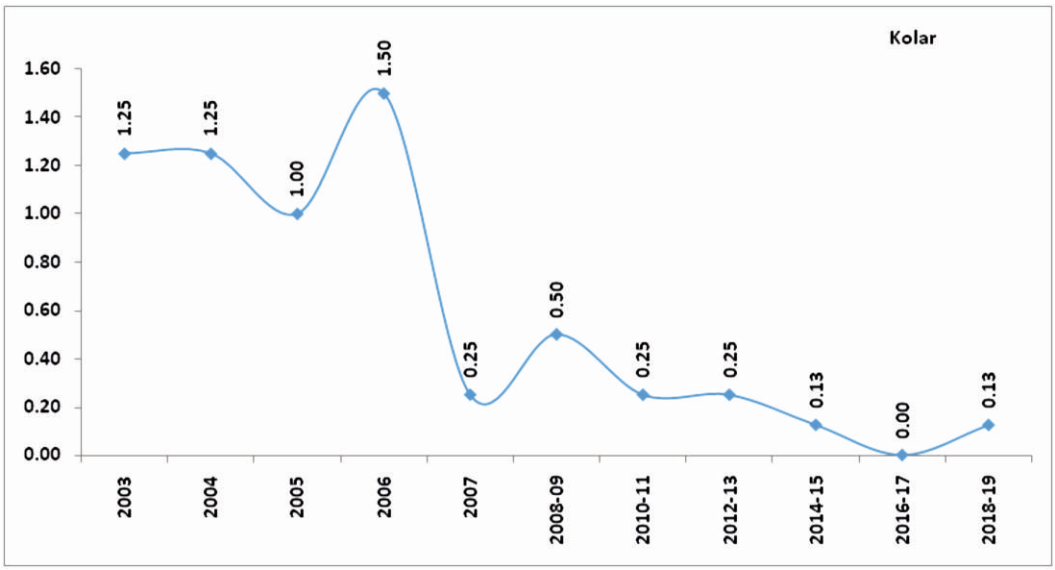
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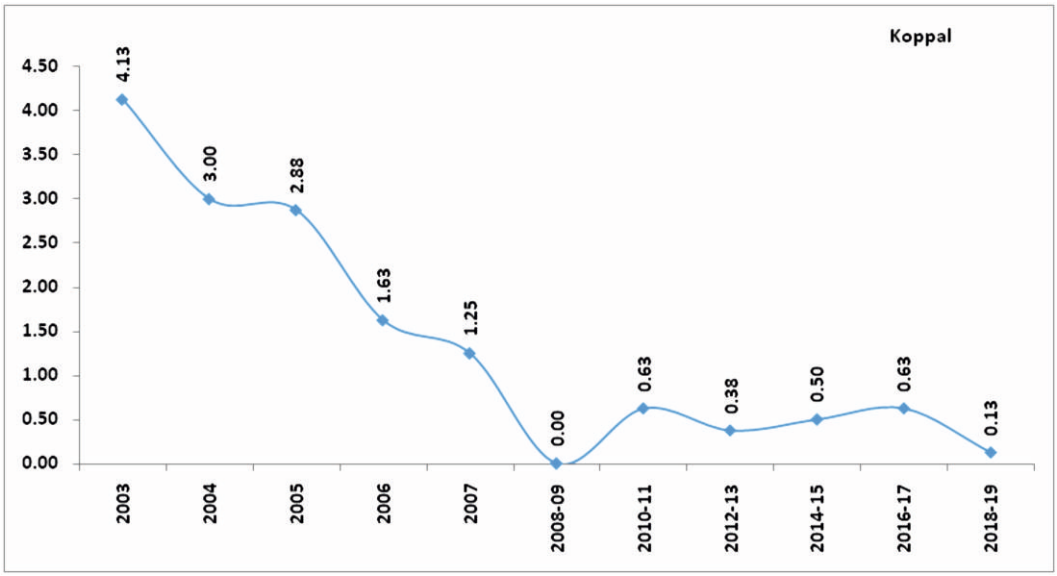
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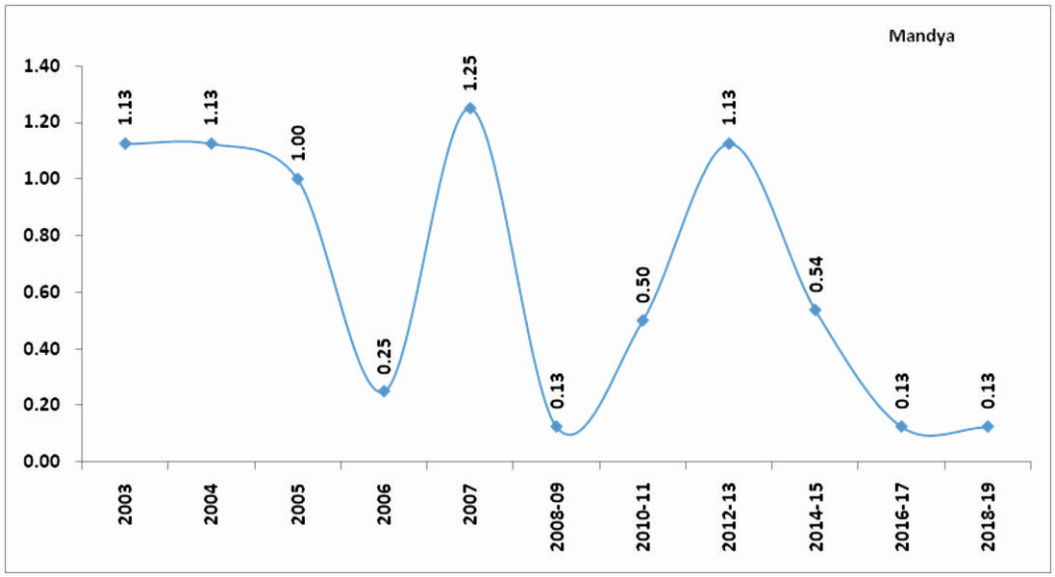
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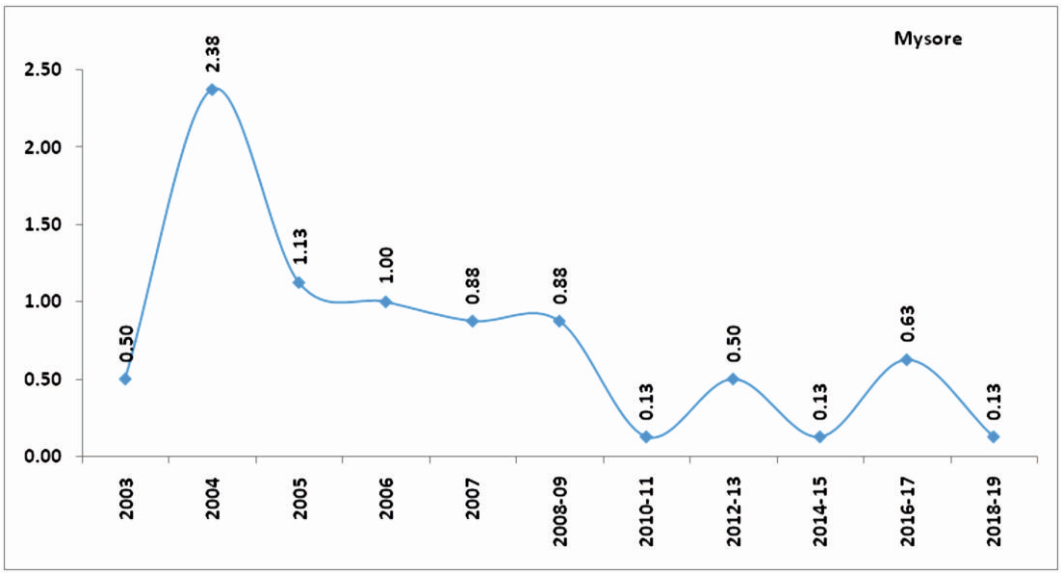
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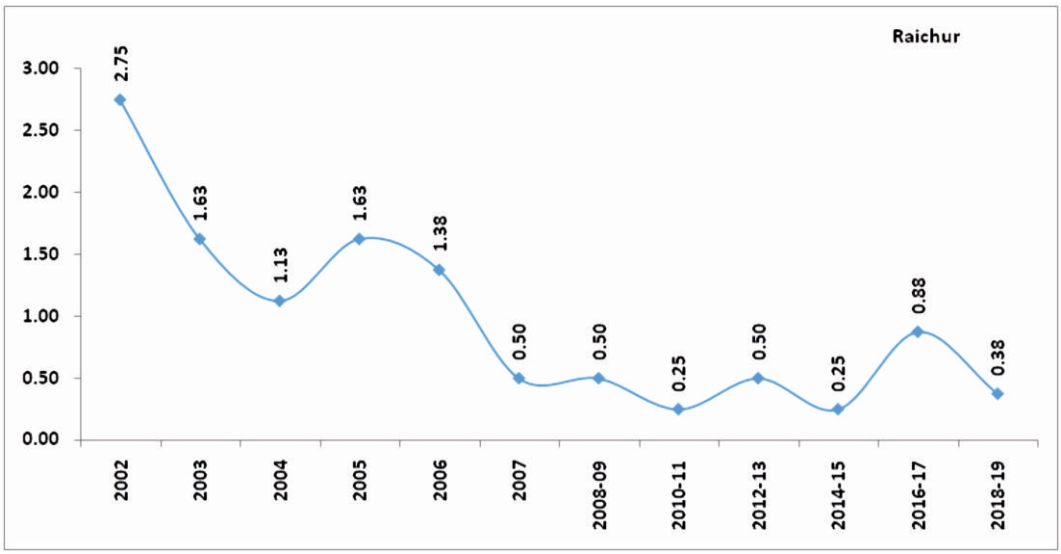
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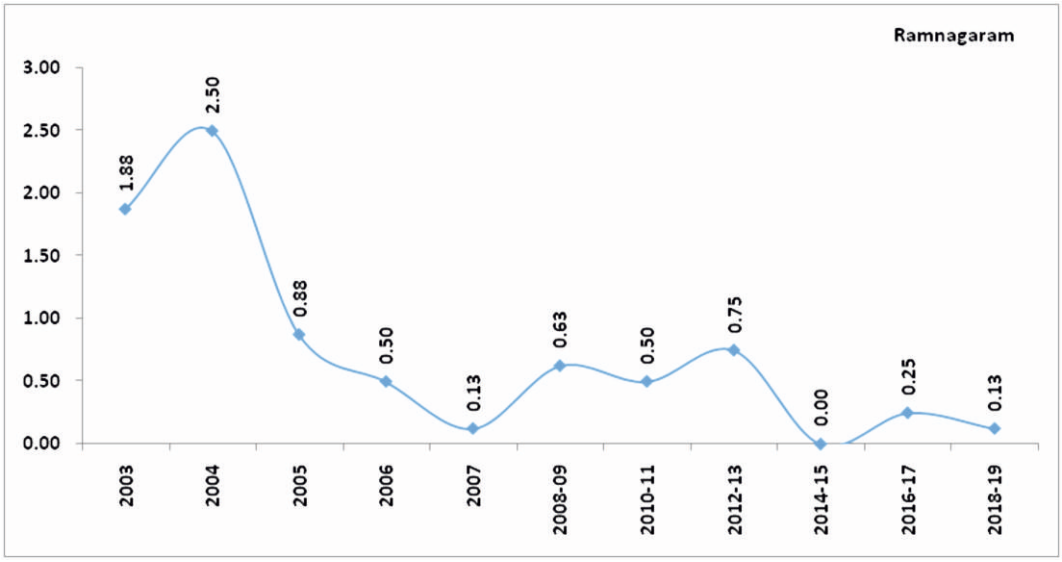
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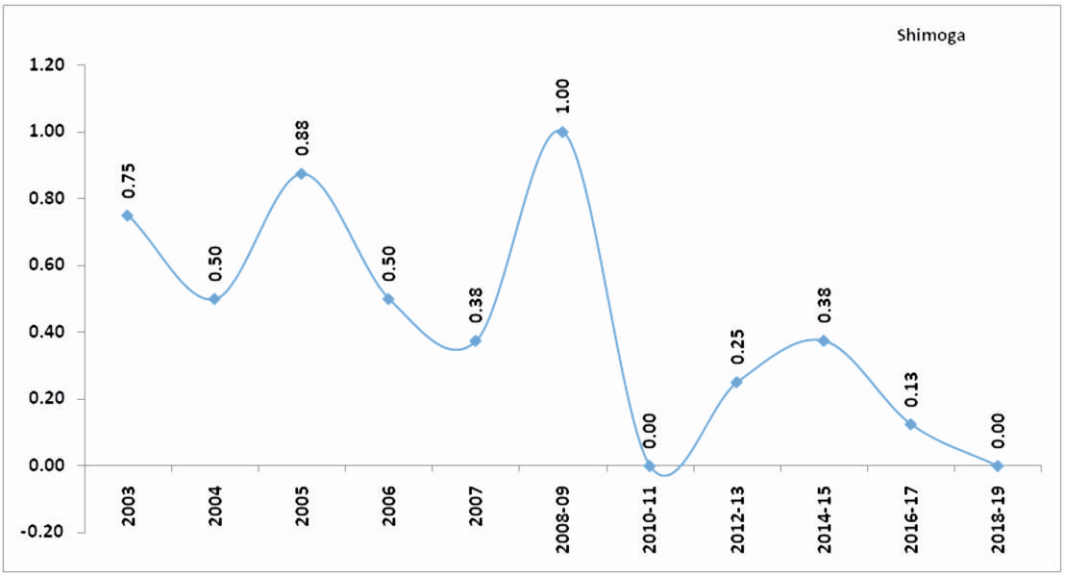
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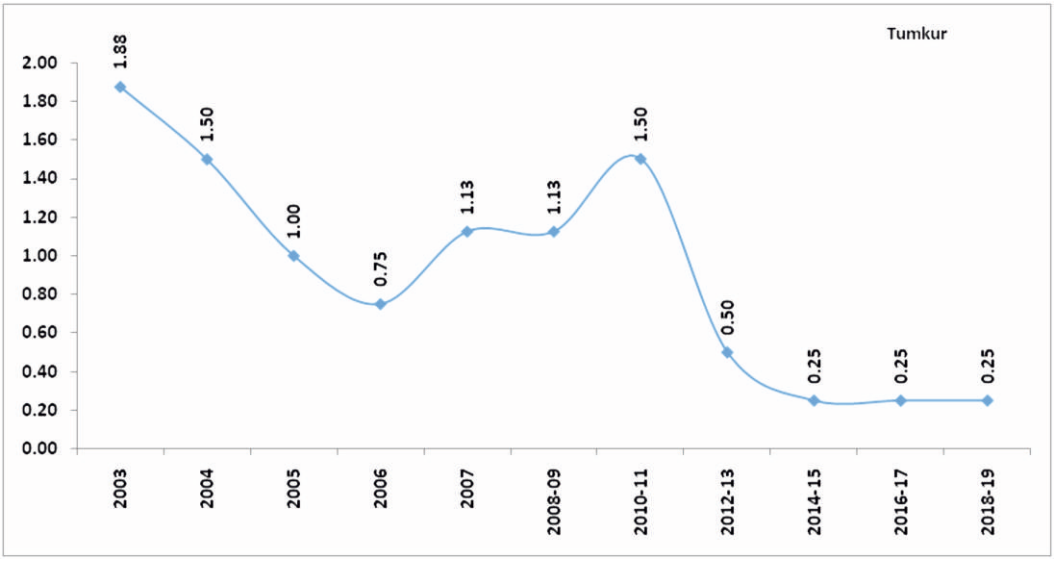
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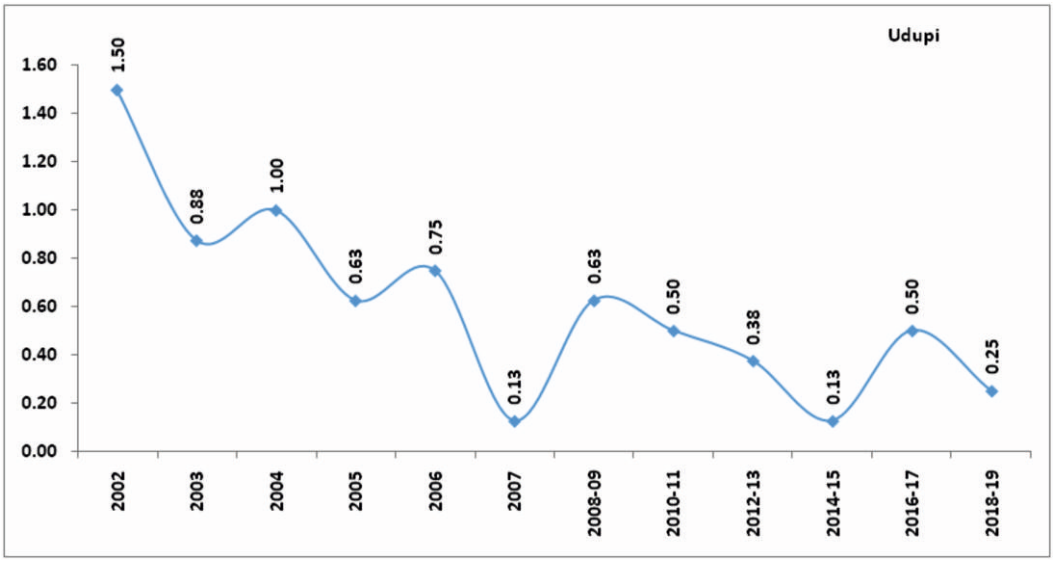
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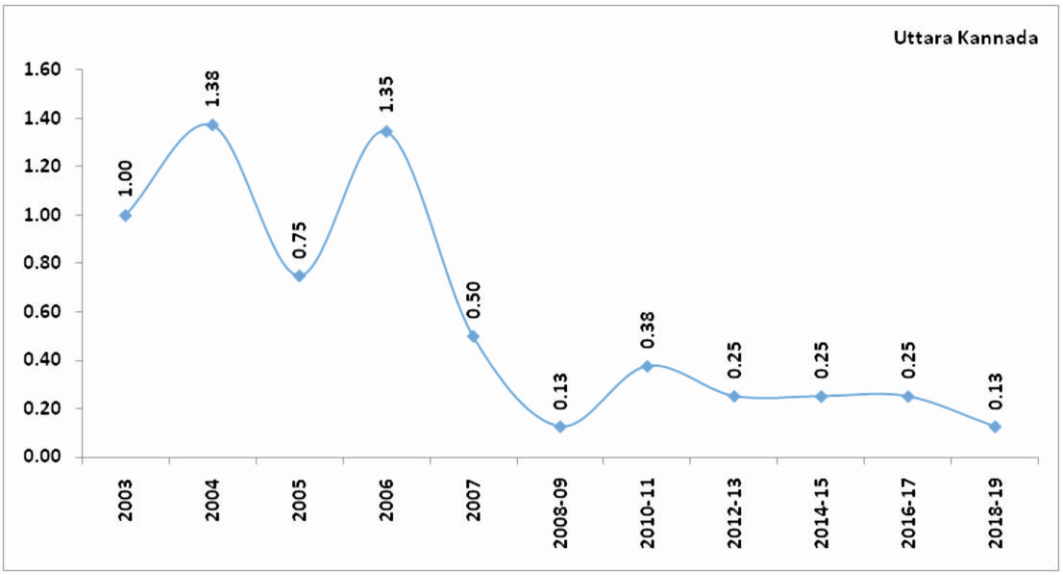
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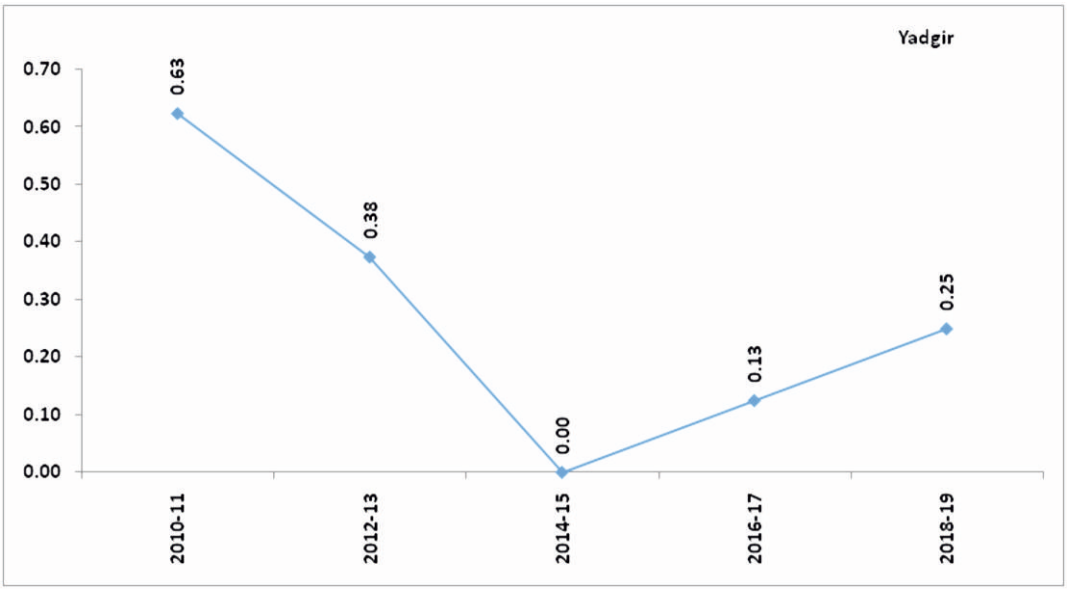
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CHAPTER 6

SUMMARY

HIV Sentinel Surveillance (HSS) plays a crucial role in monitoring the level and trend of HIV epidemic across different population groups and location in country. Currently, HIV Sentinel Surveillance (HSS) is implemented biennially to monitor the level and trend of HIV epidemic among eight groups comprising antenatal clinic attendees (pregnant women), migrants, truckers, female sex workers, men having sex with men, hijra/transgender people injecting drug users and prison population. Pregnant women were one of the groups covered under 2019 round of sentinel surveillance under National AIDS Control Programme.

The 16th round of HSS among pregnant women in 2019 was implemented at 62 sites across 30 districts in Karnataka collecting a total of 24800 complete data forms and biological specimens following consecutive sampling method and linked anonymous strategy as in previous round.

The median age of respondents were 23 years in the state and ranged between 15 and 45 years across the districts. The overall HIV prevalence among ANC clinic attendees in Karnataka in 2019 was low 0.22%. District-wise, Bangalore (0.63%), Davangare (0.50%), Bijapur (0.50%), Belgaum(0.50%) and Bagalkot (0.42%) were the top five districts with high HIV prevalence. Raichur (0.38%), Yadgir (0.25%), Udupi (0.25%), Tumkur (0.25%), Haveri (0.25%), Gulburga (0.25 %), Dharwad (0.25 %) Chamrajnagar (0.25 %) and Bangalore Rural (0.25%), were other major districts with HIV prevalence higher than the state average. While Shimoga, Kodagu and Bellary had zero prevalence the remaining districts recorded 0.13% prevalence among the ANC attendees.

HIV prevalence among ANC clinic attendees exhibits a declining trend at the state level as well as in most districts. A rising trend in recent past has been noted in Bangalore, Bangalore Rural, Bijapur, Davangare, Kolar and Yadgir.

Overall, HIV prevalence appears to be higher among older mothers of age group 35-44 yearsand those who are either illiterate or are only primary literate. HIV Prevalence was the highest among pregnant women who were non-agricultural labours. Pregnant women with migrant spouses or spouses working as agricultural cultivators and labourers also have higher prevalence.

Findings from 2019 round of ANC HSS corroborates with previous rounds showing a low and declining trend at the state level, with persistent geographical diversity at district level. Sustained declining trend among ANC clients nationally and at the stat-level, is positive indicator of the successful response of the National AIDS Control Programme (NACP). However, district-level fluctuating trends is a continuing challenge. The findings will be used as a compass by the policy makers and programme managers towards achieving 'End of AIDS' as a public health threat by 2030.

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