# District Level Epidemiological Profiling of HIV/AIDS Using Data Triangulation

## Rajasthan

**Draft Report**

**Submitted to**

## National AIDS Control Organisation

**By**

**State Institute of Health & Family Welfare (Rajasthan), Jaipur**

## Abbreviations

| | |
|---|---|
| AIDS | Acquired Immunodeficiency Syndrome |
| ANC | Antenatal Clinic |
| ART | Anti Retroviral Therapy |
| BCC | Behavioural Change Communication |
| BSS | Behavioural Surveillance Survey |
| CBO | Community Based Organisation |
| CCC | Community Care Center |
| CSO | Civil Society Organisations |
| DAPCU | District AIDS Prevention and Control Unit |
| DOT | Directly Observed Treatment |
| FSW | Female Sex Workers |
| GPS | General Population Survey |
| HIV | Human Immunodeficiency Virus |
| HRGs | High Risk Groups |
| HSS | HIV Sentinel Surveillance |
| IBBA | Integrated Biological and Behavioural Assessment |
| ICTC | Integrated Counseling and Testing Centres |
| IDU | Injecting Drug Users |
| LW | Link Workers |
| MSM | Men having sex with Men |
| NACO | National AIDS Control Organisation |
| NACP | National AIDS Control Programme |
| NFHS | National Family and Health Survey |
| NA | Information not available |
| NGO | Non-Governmental Organisation |
| NRHM | National Rural Health Mission |
| OVC | Orphan and Vulnerable Children |
| PLHIV / PLHA | People Living with HIV/AIDS |
| PPTCT | Prevention of Parent to Child Transmission of HIV |
| RCH | Reproductive and Child Health |
| RHS | Rapid Household Survey |
| SACS | State AIDS Control Society |
| STI | Sexually Transmitted Infection |
| TI | Targeted Intervention |
| VCTC | Voluntary Counseling and Testing Centre |
| VHSC | Village Health and Sanitation Committee |

## Preamble

The focus of National AIDS Control Program (NACP) in its third phase is to reduce the number of new infections, provide quality care and support to people living with HIV/AIDS (PLHIV), strengthening the infrastructure, systems and human resources in prevention and treatment programs at the district level and to establish nationwide strategic planning, programme management, monitoring and evaluation system. Each of the tasks in the set objective requires evidence based information on where the new infections are occurring and its source of transmission, identifying PLHIVs and the locality of maximum concentration. As an initial step of district level planning, district AIDS prevention control units (DAPCUs) were established in selected districts. Until 2005, the planning stage of NACP III program, the only source of information on HIV prevalence was the HIV sentinel surveillance (HSS) data but it had its limitations. In order to allocate the resources for care and support of PLHIVs, the districts were classified into four categories A, B, C, D based on HSS data as detailed below:

- A – More than 1% among ANC attendees
- B – Less than 1% among ANC attendees, but more than 5% among HRGs
- C – Less than 5% among HRGs
- D – Poor Data or No Data

However, by the end of the year 2006, the country had been enriched with several data sources that were well planned and focused on specific issues and domains. Some of them can be listed: National Behavioral Surveillance Survey (BSS 1 & 2), NFHS – 3, Integrated Behavioral and Biological Assessment Survey (IBBA-2 rounds), Avahan intervention reports etc. Apart from these survey data, NACO also initiated compiling information from care and support programs such as ICTC, PPTCT, STI Clinic, Blood Bank, ART centres etc. Further more focused information from intervention programs at various NGOs was also available.

Now, at the midpoint of the phase III of NACP, is the appropriate time to integrate all available information and prepare the epidemic profile of the districts to strengthen care and support and establish strategic planning, programme management, monitoring and evaluation system. Data triangulation is one approach to integrate information from different sources to a unique conclusion. This will also enable to reclassify the districts based on the epidemiological dynamism and allocate the resources in the second half of NACP III for more effective control, care and support program implementation.

In context of increased availability of data and decentralized planning at the district level, NACO has recently undertaken a project titled "Epidemiological Profiling of HIV/AIDS Situation at District and Sub-district Level using Data Triangulation" in seven states (182 districts) with the objective of developing district HIV/AIDS epidemic profiles based on which strategies, programme focus and prioritisation can be made more effective. This project also aims at building the capacity of the state and district program managers and M & E persons in data analyses, triangulation and use for program review and planning.

This will also contribute to refine district prioritization as well as revising the Annual Action Plans of NACO and SACS.

The exercise has been very successful and the experience has given some important lessons in terms of technicalities and operational issues. Consolidating the lessons learnt from the recent exercise, NACO is undertaking Phase-II of this project in 20 other important states. These states are Assam, Nagaland, Meghalaya, Manipur, Mizoram, Delhi, Himachal Pradesh (selected districts), Haryana, Punjab, Chandigarh, Rajasthan, Uttar Pradesh (rest of the districts), Uttarakhand, Bihar, Jharkhand, Chhattisgarh ( selected districts), Madhya Pradesh (selected Districts), Orissa, Goa and Kerala.

**Epidemiological profiling of the district – the process**

A study of the general profile of the state is essential to understand the epidemic pattern and its dynamics. Therefore, the general profile of the state is described in Chapter 1 including geographical situation, population characteristics, Health facilities and HIV/AIDS scenario in the state. The process related to data triangulation is covered in Chapter 2 onwards. It involves several steps for integrating and triangulating data from several sources through a standardized method to ensure that the evidence derived is credible and comparable across regions.

The steps of triangulation process are-

- Specify the question
- Identify data sources, organize the data and identify data gaps
- Conduct data quality and validation checks
- Decide on data outlier and/or missing data
- Refine/revisit the questions chosen for data triangulation
- Analyze data from different sources for each question
- Data triangulation
- Summarize findings and draw conclusions
- Outline next steps based on findings

Major three questions to be answered through triangulation for each district are:

1. What are the levels, differentials and trends in HIV/STI in general population, high-risk groups, and the bridge population?
2. What are the drivers of the epidemic?
3. What are the gaps in HIV/AIDS response at district level?

Chapter 2 is devoted to list out the components of major questions that could be answered as per availability of information in the state and specify the data sources used for the purpose. Quality checks were carried out for each set of data and possible corrections such as removing outliers, correcting

invalid entries by checking with state data etc. Chapter 3 dealing with question number 1 concludes the validated level of HIV/STI prevalence in the State, differentials of prevalence among different population groups – urban/rural, male/female, different types of high risk groups etc. Chapter 4, dealing with drivers of the epidemic explains where, who and how the epidemic is progressing in the state. This chapter also discloses the number and demographic status of People living with HIV/AIDS. A reasonable analysis of the response to the epidemic is carried out in Chapter 5. The response and data gaps are specified in the light of the levels, trend and drivers determined in previous two chapters.

### Triangulation and determination of program priority

Chapter 6 is the conclusive chapter triangulating the three components, levels-trend-differential v/s drivers v/s response that determines the epidemiological profile of the district. Thus the six chapters described above forms the State report. A draft model report for Rajasthan State in is presented in this document.

### Acknowledgement

Director- SIHFW, Rajasthan (an ISO 9001:2008 certified Institution) is joined by his team of Dr. Richa Chaturvedy, Mr. Sarvesh Awasthi and Ms. Priyanka Bhatt in expressing our gratitude to NACO for reposing its faith in us for this exercise. We shall like to place on record our sincere thanks to all those who have contributed and coordinated this accomplishment of the feat, in particular all the officers at SACS, Rajasthan, District Officers at DAPCU, Dy. CM&HOs, District ASHA Coordinators, DNOs and others without the help of whom it would not have been possible to conclude.

Our special thanks are due to Dr. Venkatesh, DDG-NACO, Dr. Yujwal, Programme Officer & Dr. Mariamma Thomas, whose inspiration and constant support had been a great motivator.

**Chapter 1**

## The State Profile – General Characteristics

### Introduction:

Rajasthan is located in the northwestern part of the subcontinent. It is bounded on the west and northwest by Pakistan, on the north and northeast by the states of Punjab, Haryana, and Uttar Pradesh, on the east and southeast by the states of Uttar Pradesh and Madhya Pradesh, and on the southwest by the state of Gujarat. The Tropic of Cancer passes through its southern tip in the Banswara district. The state has an area of 132,140 square miles (342,239 square kilometres). The capital city is Jaipur.


In the west, Rajasthan is relatively dry and infertile; this area includes some of the Thar Desert, also known as the Great Indian Desert. In the southwestern part of the state, the land is wetter, hilly, and more fertile.

The climate varies throughout Rajasthan. On average winter temperatures range from 8° to 28° C (46° to 82° F) and summer temperatures range from 25° to 46° C (77° to 115° F). Average rainfall also varies; the western deserts accumulate about 100 mm (about 4 in) annually, while the southeastern part of the state receives 650 mm (26 in) annually, most of which falls from July through September during the monsoon season.

Rajasthan has a single-chamber legislative assembly with 200 seats. The state sends 35 members to the Indian national parliament: 10 to the Rajya Sabha (Upper House) and 25 to the Lok Sabha (Lower House). Local government is based on 33 administrative districts.

## Demographic Profile:

| Item | Year | Unit | Particulars |
|---|---|---|---|
| Area | Census 2001 | Sq.Km. | 342239 |
| Population | Census 2001 | No. | 56507188 |
| (i) Urban | " | " | 13214375 |
| (ii) Rural | " | " | 43292813 |
| (iii) Sex Ratio (No. of Female per 1000 of Males) | " | No per'000 | 921 |
| (iv) Density (Per sq. Km.) | " | | 165 |
| Cities & Towns | Census 2001 | No. | 222 |
| Villages | Census 2001 | " | 41353 |
| Total Energy available | 2007-08 (P) | MU | 36716.712 |
| Roads | 2007-08 | Kms. | 182460 |
| Educational Institutions | 2008-09 | No. | 119790 |
| Village Panchayats | 2004 | No. | 9168 |
| Panchayat Samities | 2004 | " | 249 |
| Eleventh Five Year Plan Outlay (2007-12) Budgeted 2007-12 | 2007-12 | Cr Rs. | 71731.98 |

## Health Facilities

| Health Facilities | Particulars |
|---|---|
| (i) Modern Medicines | |
| Hospitals | 127 |
| CHC | 367 |
| Dispensaries | 199 |
| Aid Post | 13 |
| MCW Centres | 118 |
| Primary Health Centres | |
| Rural PHC | 1503 |
| Urban PHC | 37 |
| Family Welfare Centres | 293 |
| Sub-Centres | 10951 |
| (ii) Ayurvedic/Unani/Homeopathic and Prakritik Institution | |
| Hospitals | 114 |
| Dispensaries | 3841 |
| Mobile Units | 14 |

## HIV/AIDS related Health Facilities

| HIV/AIDS/STI services | No. |
|---|---|
| ICTCs | 252 |
| STI clinics | 90 |
| Blood Banks | 81 |
| TB Units | 12 |
| CCCs | 8 |
| ART Centers | 6 |
| Link ART centers | 21 |
| CD-4 Machines | 5 |
| TIs (FSWs) | 28 |
| TIs (MSM) | 3 |
| TIs (IDUs) | 3 |
| TIs (Migrants) | 9 |
| TIs (Truckers) | 2 |
| TI (Core composite Intervention) | 7 |
| PLHIV Networks | 33 |
| Red Ribbon Clubs | 220 |

## HIV /AIDS Scenario

### (i) DLHS-III

| Particulars | Total | Rural | Urban |
|---|---|---|---|
| Awareness of RTI/STI and HIV/AIDS | | | |
| Women who have heard of RTI/STI(%) | 47.3 | 44.1 | 60.5 |
| Women who have heard of HIV/AIDS (%) | 52.3 | 46.4 | 76.8 |
| Women who have any symptoms of RTI/STI (%) | 16.2 | 17.1 | 12.6 |
| Women who know the place to go for testing of HIV/AIDS (%) | 64.9 | 62.4 | 71.4 |
| Women underwent test for detecting HIV/AIDS (%) | 0.8 | 0.5 | 1.6 |
| Unmarried women who have heard of RTI/STI (%) | 41.6 | 35 | 57.1 |
| Unmarried women who have heard of HIV/AIDS (%) | 72.9 | 65.7 | 90.1 |
| Unmarried women who know the place for testing of HIV/AIDS (%) | 68.3 | 64.2 | 75.4 |
| Unmarried women underwent test for detecting HIV/AIDS (%) | 0.2 | 0.2 | 0.3 |

**(ii) NFHS-III**

| Knowledge of HIV/AIDS | NFHS-III (Rajasthan) |
|---|---|
| | Ever Married adults(age 15-24) |
| Women heard of HIV/AIDS (%) | 33.8 |
| Men who have heard of AIDS (%) | 74.2 |
| Women who know that consistent condom use can reduce the chances of getting HIV/AIDS (%) | 27.3 |
| Men who know that consistent condom use can reduce the chances of getting HIV/AIDS (%) | 63.2 |
| Use of Condom (%) of currently married (age 15-49) | 5.8 |

**Chapter 2**

## Questions for Triangulation and data source

1. What are the levels, differentials and trends in HIV/STI in general population, high-risk groups, and the bridge population?
    1. What is the current level of HIV prevalence among pregnant women by urban and rural, by age?
    2. What is the HIV prevalence among FSW?
    3. What is the HIV prevalence among MSM?
    4. What is the HIV prevalence among clients of FSW?
    5. What is the Syphilis prevalence among pregnant women?
    6. What is the Syphilis prevalence among general population male/female?
    7. What is the Syphilis and other STI prevalence among FSW?
    8. What is the Syphilis and other STI prevalence among clients of FSW?
2. What are the drivers of the epidemic?
    1. What is the size estimates of major population groups that driving the epidemic in the district?
    2. What is the behavior pattern of each driver population that explains the HIV transmission dynamics?
    3. What is the mobility and behavior pattern that explains the special spread of infection?
3. What are the Program gaps?
4. What are the data gaps?

Data sources available to assess the levels, differentials and trends in HIV/STI among various subpopulations.

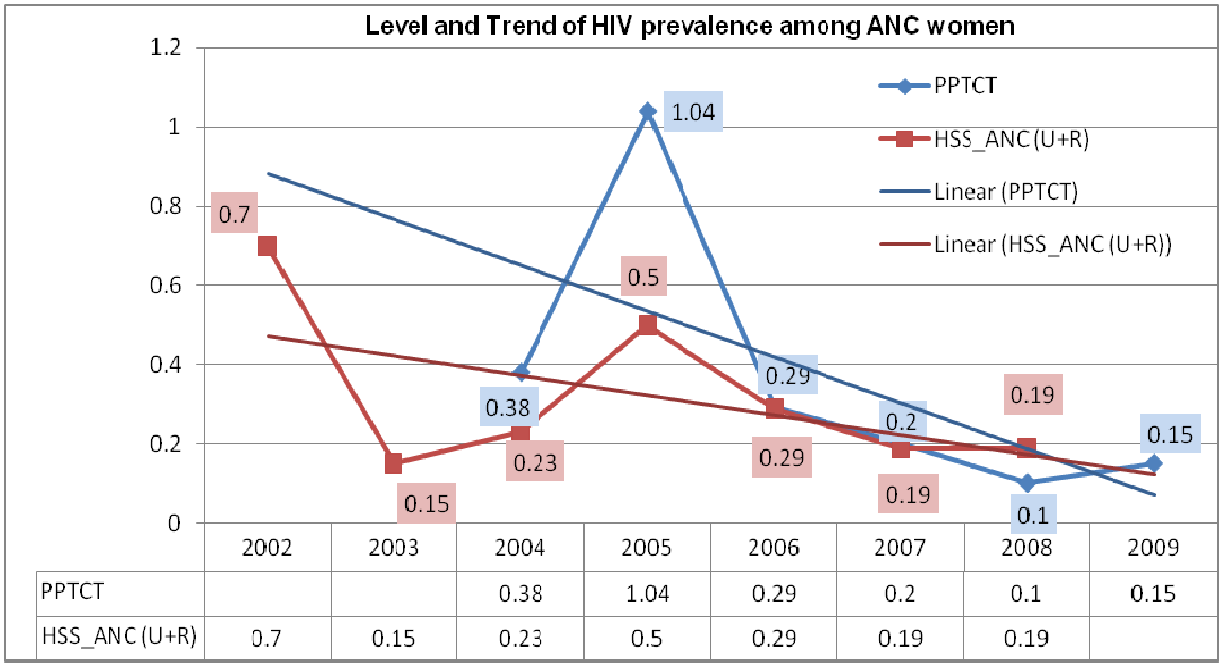
| Subpopulation | Data source |
|---|---|
| HIV Prevalence | |
| Pregnant Women | HSS ANC, PPTCT |
| FSW | HSS |
| MSM | HSS |
| General Population | Blood Bank Data |
| High Risk Population (Male and Female) | VCTC data |
| VDRL +ve /other STI prevalence | |
| Pregnant Women | HSS ANC |
| General population Males and Females | HSS STD |
| General Population Males and Females | CMIS STD data |
| High Risk Behaviour Groups | |
| FSW | Raman Mapping Report (2009) |
| MSM | Raman Mapping Report (2009) |
| IDU | Raman Mapping Report (2009) |
| Truckers | Mapping Report by TCI Foundation-Technical Support Group |
| Size/ Burden of HIV/ Epidemic | |
| People living with HIV/AIDS | ART data |
| People living with HIV/AIDS | DLN data- RNP Plus |

**Chapter 3**

## Levels, Trends and Differentials of HIV/STI Prevalence

### 3.1 Level and trend of HIV prevalence – General population

Primary data available for assessing levels and trend in general population is the HIV prevalence among ANC women. Two sources of data providing the required information are sentinel surveillance data for ANC women and PPTCT data. The chart below depicts the level and trend of HIV infection among pregnant women compared between the two sets of data after cleaning and validation.




| | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|
| PPTCT | | | 0.38 | 1.04 | 0.29 | 0.2 | 0.1 | 0.15 |
| HSS_ANC(U+R) | 0.7 | 0.15 | 0.23 | 0.5 | 0.29 | 0.19 | 0.19 | |

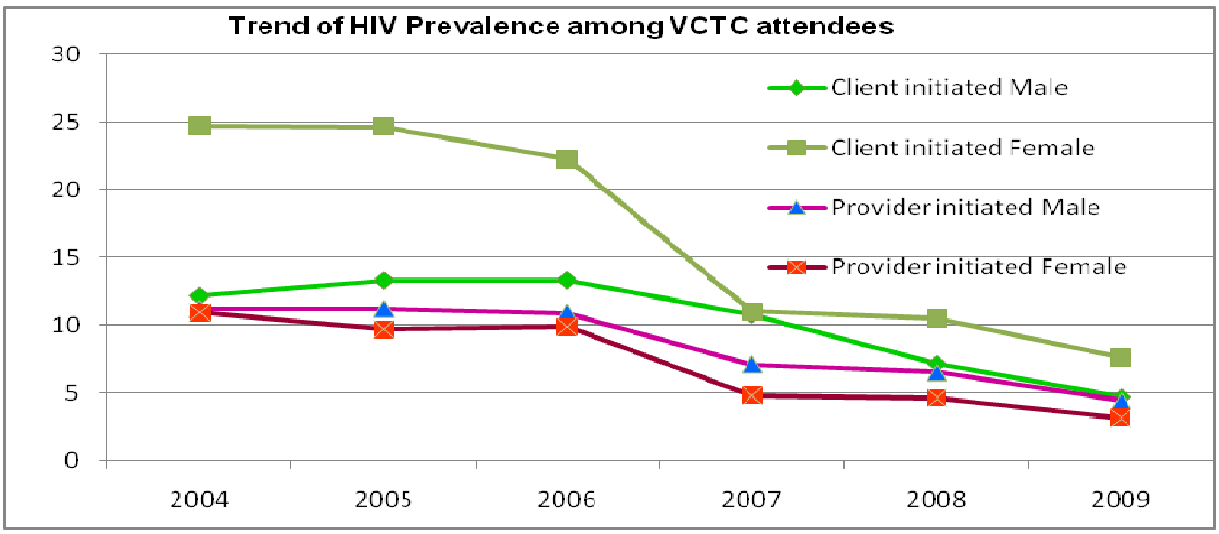
The HSS data for ANC women from two sites, one urban and another rural, were combined to assess the level and trend of HIV infection among pregnant women in the state over time. Only six districts in Rajasthan were running PPTCT centers in 2005, while in 2006 around 23 PPTCT centers were reporting data regarding HIV test of pregnant women. As number tested was relatively less in 2005 with pregnant women tested in 2006.Therefore, PPTCT data of 2005 shows high positivity of HIV. The declining trend seen in the graph seems to be due to the scale up of PPTCT registrations. The level of HIV prevalence among pregnant women tested in PPTCT is close to that derived from HSS ANC data in 2008. Therefore we conclude based on the available data that the current level of HIV prevalence among pregnant women in Rajasthan is around 0.1% and the trend over time is stable.

DLHS-III states that more than 65 percent of ever married women know the place where HIV/AIDS can be tested. There are only seven districts where less than 50 percent of woman know the place for testing while in remaining districts 50-81 percent of women are aware of the same, only in Ajmer about 80.5 percent of women are aware of the same. About two-third women (64.6 percent) reported HIV/AIDS test can be done in a government hospital/dispensary followed by 12.6 percent

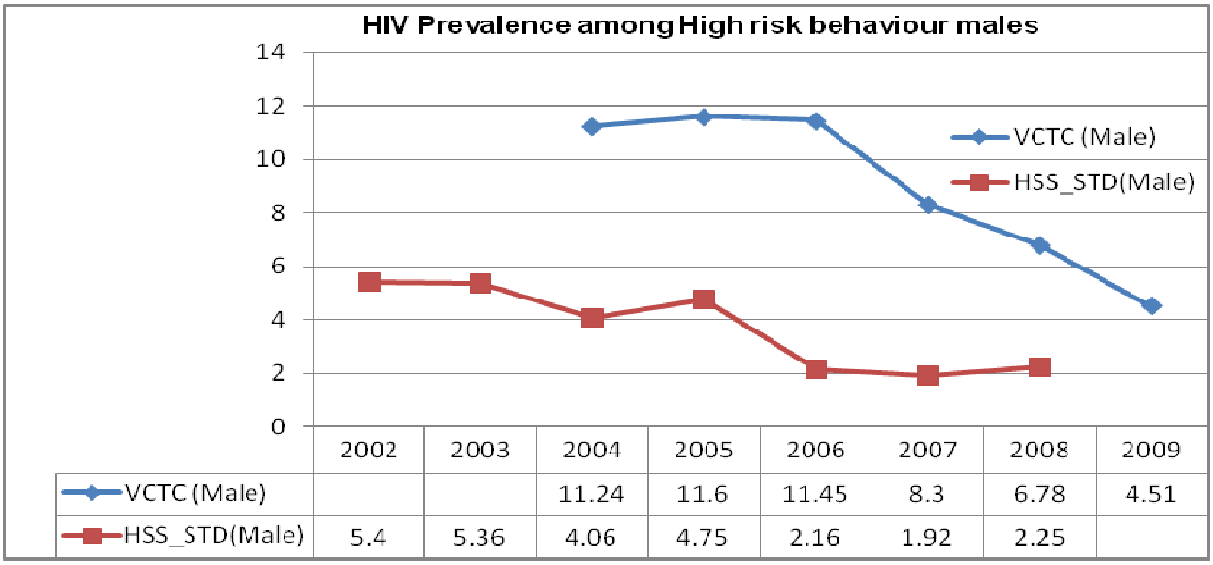
reporting private hospital/clinic as the place for testing HIV/AIDS. Just about 0.8 percent of ever married have undergone HIV/AIDS test, among them 60.1 percent have done it more than a year ago and 39.9 percent in the last one year period.

### Level and trend of HIV prevalence – High risk population

Men and women attending VCTC for HIV test (excluding pregnant women) are expected to be of high risk behaviour as perceived by themselves or as identified by a qualified person or a service providing agency. Therefore, the HIV prevalence among men and women getting tested for HIV in VCTC can be compared with HIV prevalence observed among various risk groups by HSS or other surveys. Initially, the prevalence among two groups of attendees, voluntary (client initiated, CI) and referred (provider initiated, PI) were compared as depicted in the chart below. The overall HIV prevalence in both the groups has declined.



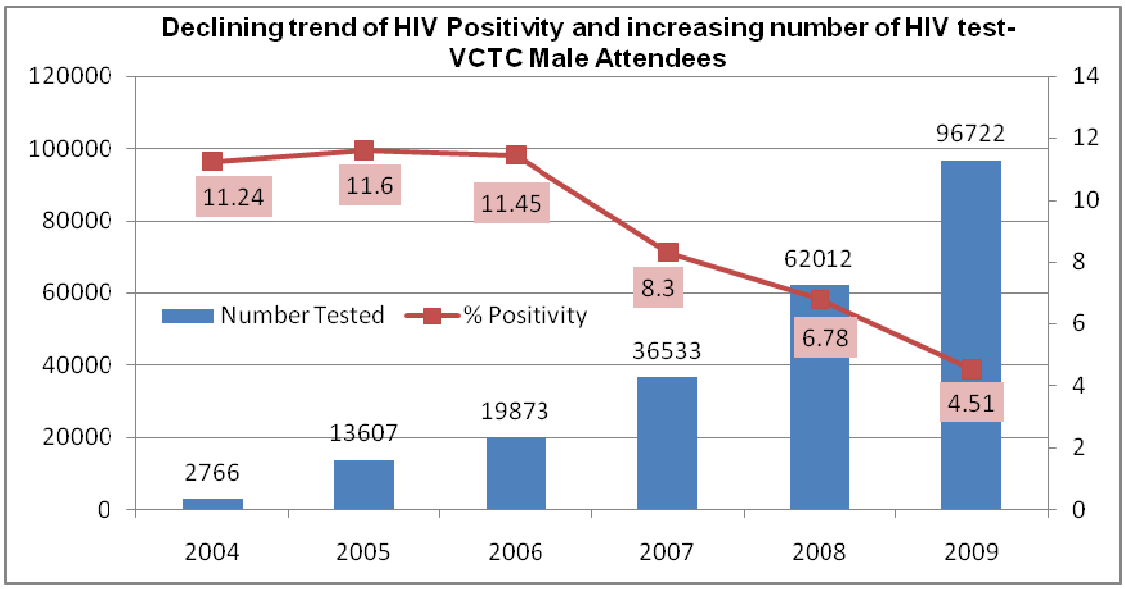

Since both the groups (CIs and PIs) of VCTC attendees are biased in respect of risk behaviour representation, the HIV prevalence among all attendees could be taken as an average measure of level and trend among HRG population in the state. Therefore, HIV prevalence among total male attendees of



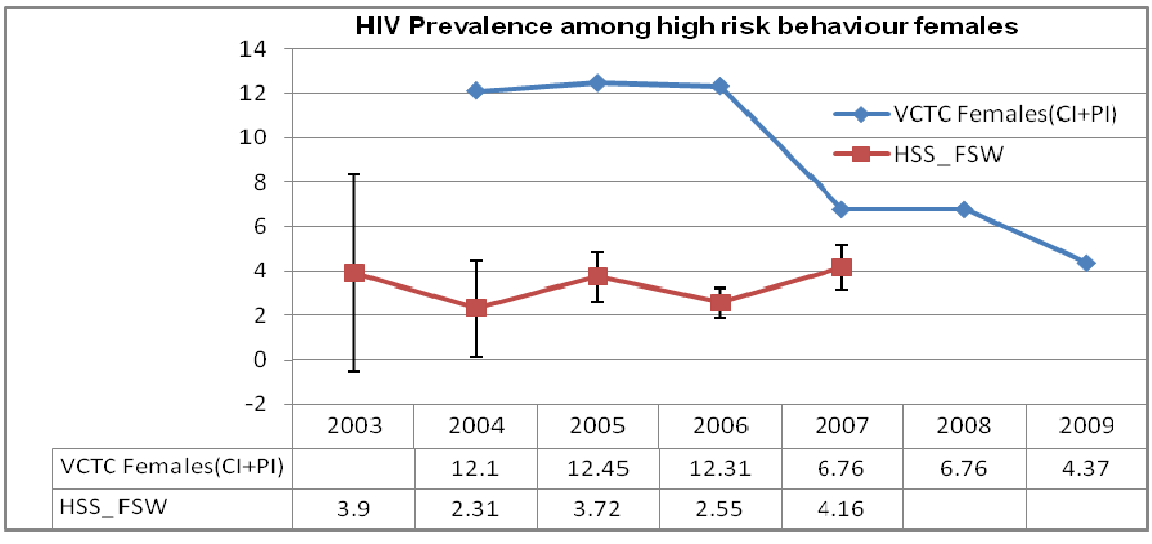

| | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|
| VCTC (Male) | | | 11.24 | 11.6 | 11.45 | 8.3 | 6.78 | 4.51 |
| HSS_STD(Male) | 5.4 | 5.36 | 4.06 | 4.75 | 2.16 | 1.92 | 2.25 | |

VCTCs were compared with that among male STD patients attending HSS-STD sites.

The STD sites of HSS are located in referral hospitals and generally referred patients with chronic/advanced stage of infection are attending these clinics. Hence the moderate HIV prevalence observed among them is not representative of any specific risk group. The male attendees of VCTC clinic include clients of FSWs, MSMs, male IDUs and spouses of infected women. Though the prevalence among them may be slightly diluted for many reasons, it could be considered as a good measure of HIV prevalence among high risk behaviour men. Therefore one can only conclude that the overall HIV prevalence among high risk behaviour men is around 4.51%. The declining trend seen in the graph seems to be due to the scale up of VCTC registrations. Declining trend of positivity and increasing number of HIV test over time is depicted in the Chart below. Therefore, trend of HIV positivity among high risk behaviour men is considered stable.




Similarly, the HIV prevalence among total female attendees of VCTCs was compared with that among

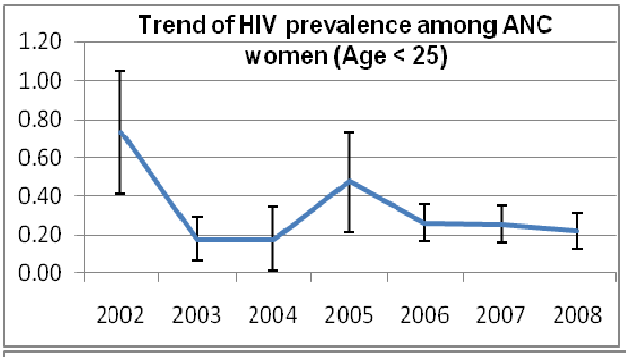


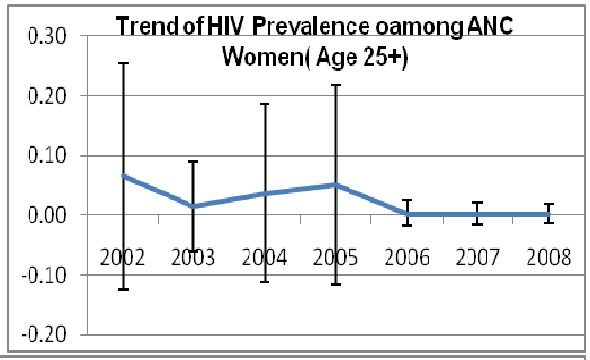

| | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|
| VCTC Females(CI+PI) | | 12.1 | 12.45 | 12.31 | 6.76 | 6.76 | 4.37 |
| HSS_FSW | 3.9 | 2.31 | 3.72 | 2.55 | 4.16 | | |

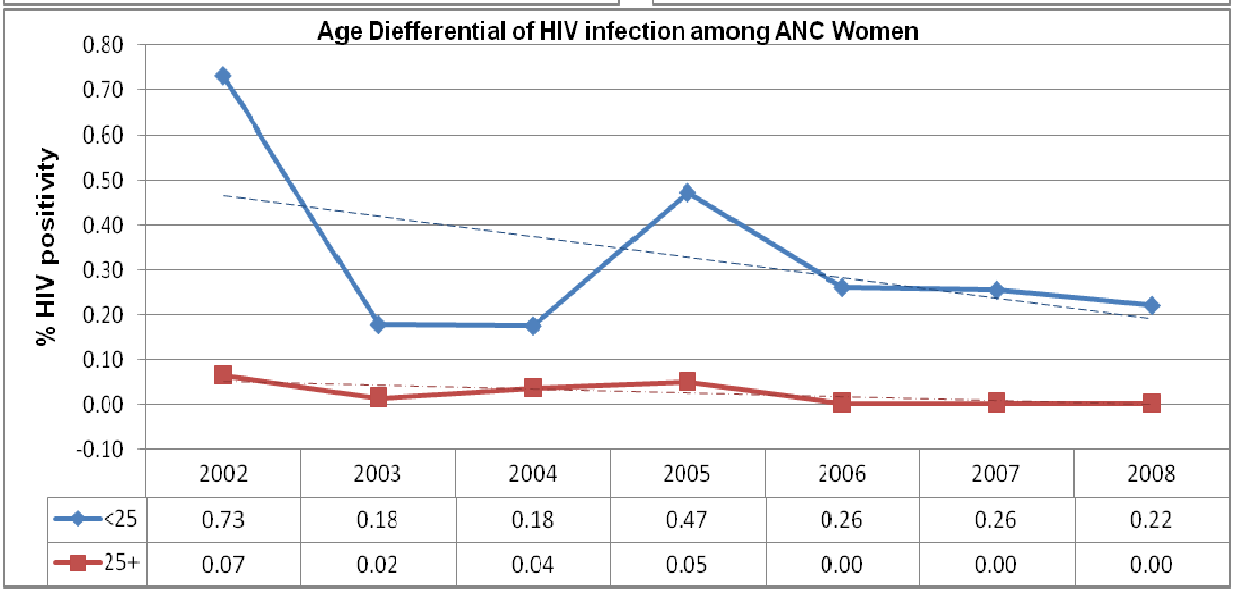
FSWs from HSS. It may be noted from the Chart below that the trend of HIV prevalence among FSWs observed from HSS is similar to that of women attending VCTC. HSS result of FSW in 2007 and the prevalence among women attending VCTC in 2009 are at same level. Declining trend of positivity among VCTC female is due to increasing number of HIV test over time. The probable hypothesis emerging from the above analysis is that overall HIV prevalence among high risk behaviour women is around 4.37% in 2009 and the trend is remaining stable.

### 3.2 Differentials of HIV prevalence

(i) Pregnant Women – age differential



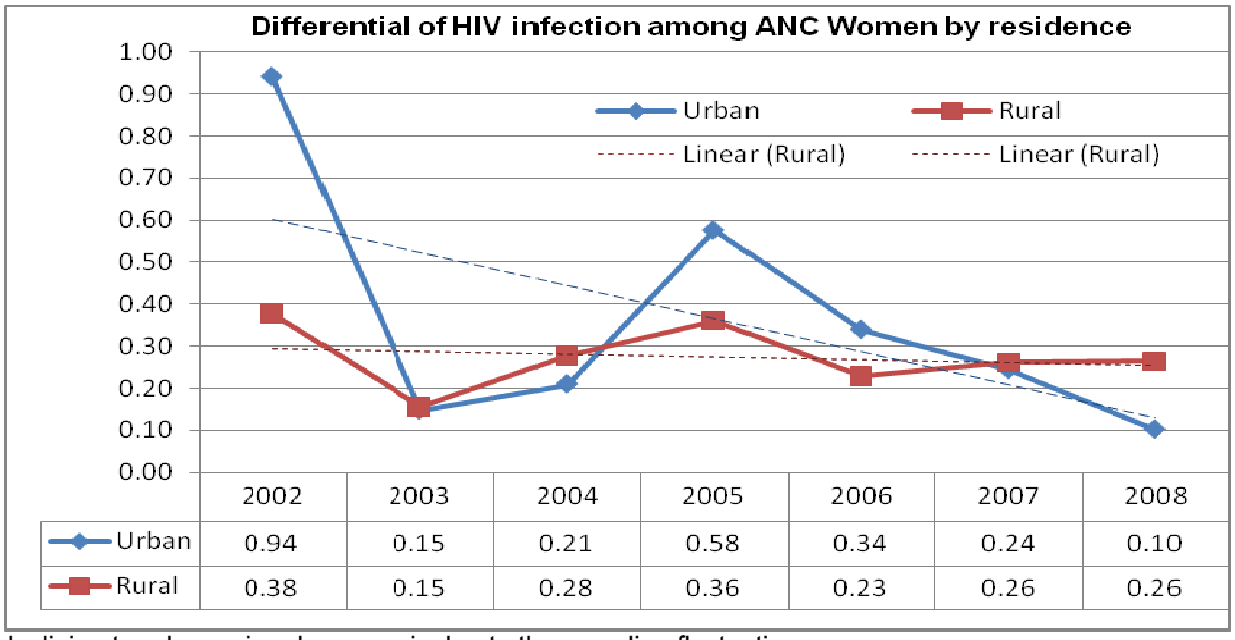




| | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|---|---|
| <25 | 0.73 | 0.18 | 0.18 | 0.47 | 0.26 | 0.26 | 0.22 |
| 25+ | 0.07 | 0.02 | 0.04 | 0.05 | 0.00 | 0.00 | 0.00 |

HSS ANC data combined for both urban and rural sites were also examined to assess the differentials of HIV infection by age, education and locality. Two vertically parallel charts above depict the trend of HIV prevalence among ANC women of two age groups ≤ 25 years and more than 25 years. Examining the confidence intervals, it is seen that there is no significant change of HIV prevalence over time in both the age group. Current level of HIV infection in the lower age group is 0.22% for the reference year 2008 and it is 0.00% in higher age group consequently from 2006-2008. The comparative chart below depicts the rate of change of HIV prevalence over time in both the age groups. While declining trend is observed among the lower age group it is remaining stable in the higher.

(ii) Pregnant Women – differentials by place of residence

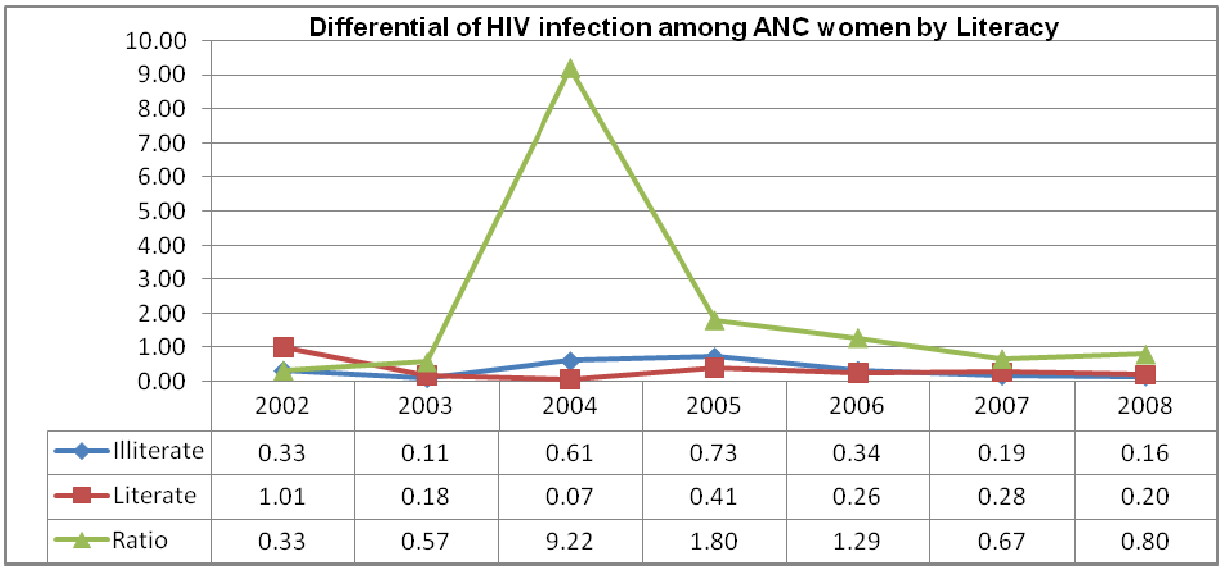
The HIV prevalence among ANC women by place of residence as reported by them is presented in the Chart below. The trend of infection in both urban and rural areas is remaining stable. Apparently




| | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|---|---|
| Urban | 0.94 | 0.15 | 0.21 | 0.58 | 0.34 | 0.24 | 0.10 |
| Rural | 0.38 | 0.15 | 0.28 | 0.36 | 0.23 | 0.26 | 0.26 |

declining trend seen in urban area is due to the sampling fluctuation.

(iii) Pregnant Women – differentials by literacy status



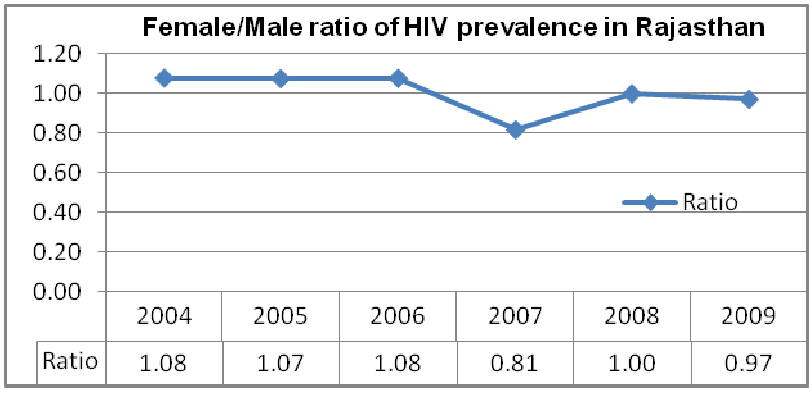

| | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|---|---|
| Illiterate | 0.33 | 0.11 | 0.61 | 0.73 | 0.34 | 0.19 | 0.16 |
| Literate | 1.01 | 0.18 | 0.07 | 0.41 | 0.26 | 0.28 | 0.20 |
| Ratio | 0.33 | 0.57 | 9.22 | 1.80 | 1.29 | 0.67 | 0.80 |

The level of HIV prevalence among illiterates and literates remained approximately same from 2006 onwards and the trend in both the groups is remaining stable. The ratio of HIV prevalence among illiterates to literates is decreasing from 9.22% in 2004 to 0.80% in 2008.

(iv) Pregnant Women – differentials by occupation

Around 90% of ANC women from HSS were Housewives and out of remaining 10% constitutes the ANC women with no information regarding occupation and involved in other occupation.

(v) High risk behaviour group – sex differential



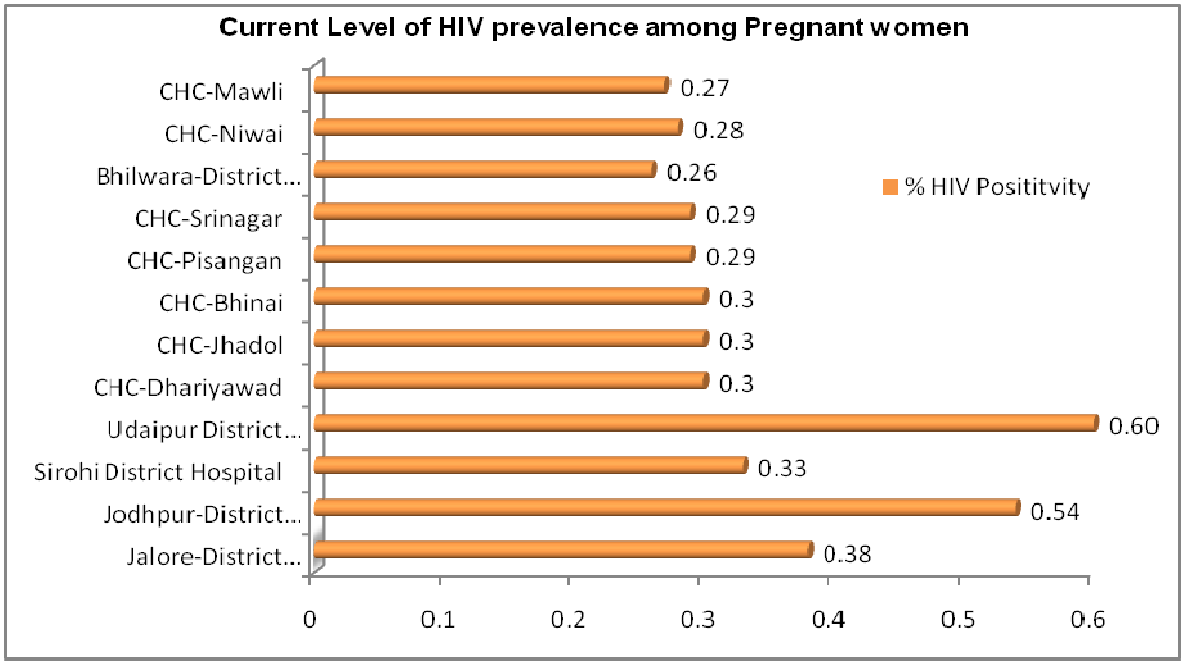

| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|
| Ratio | 1.08 | 1.07 | 1.08 | 0.81 | 1.00 | 0.97 |

VCTC data is the only source to assess the sex differential of HIV infection among high risk behaviour men and women. Declining trend of HIV prevalence among Men and Women was seen in previous section. Impact of this phenomenon between male and female is seen on the female/male ratio of HIV infection presented in the Chart above. While number of infected women per infected male is approximately 1:1 in all the years.

### 3.3 Identification of vulnerable locations of HIV prevalence

An attempt was made to identify the locations with high HIV prevalence among different risk populations using PPTCT and VCTC data. Locations with large number of people living with HIV (PLHIV) were also identified using ART registration data.

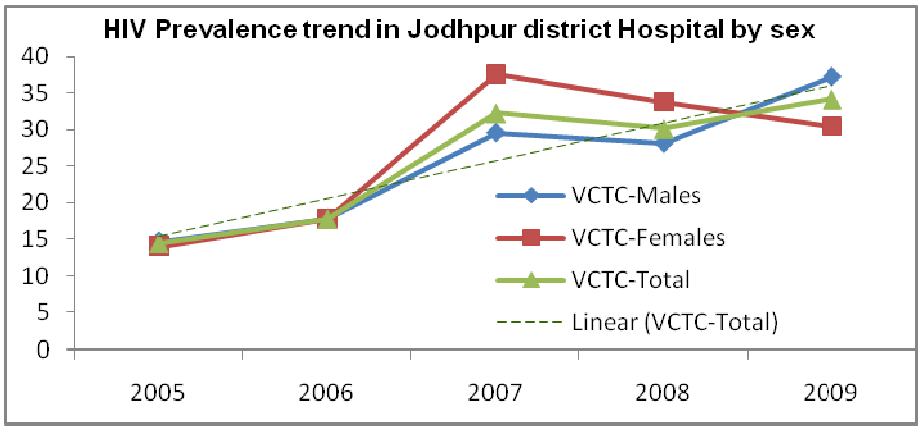
(i) High prevalent locations – pregnant women



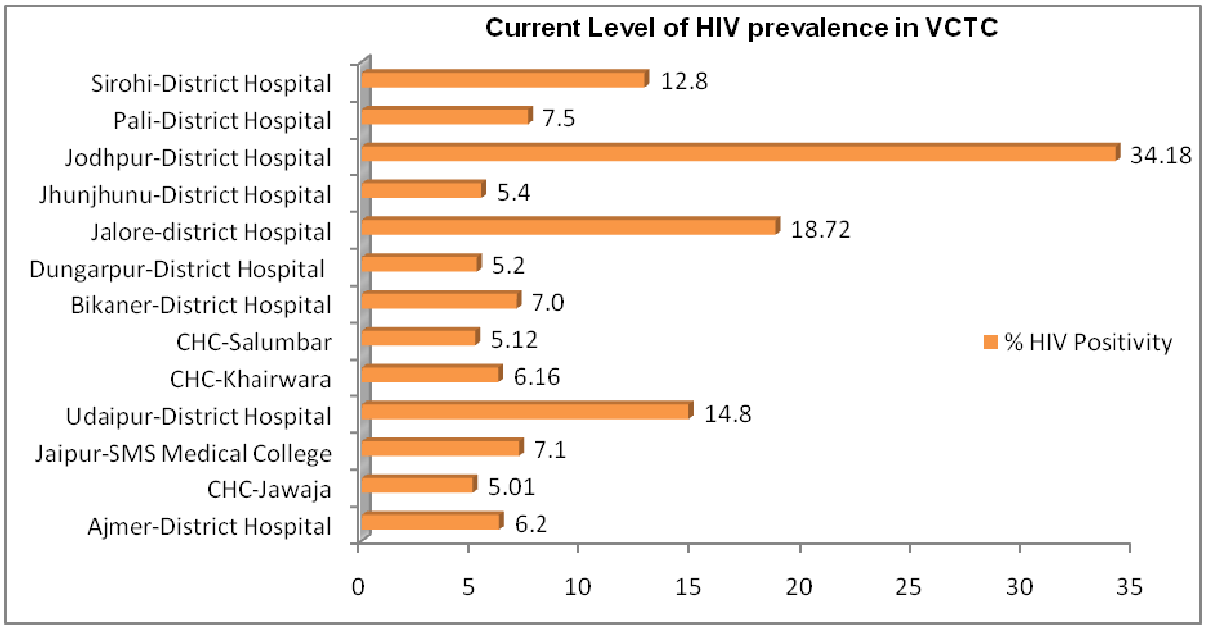

HIV positivity rate was more than 0.5% in two of the PPTCT centers. The Udaipur-district hospital and

Jodhpur-district hospital shows moderate level of HIV prevalence among pregnant women. Specifically Jodhpur district need more centers for HIV testing, while PPTCT coverage of the district is just 8.27%. PPTCT coverage of Udaipur district is also around 16.17%, which comes under low coverage. The positivity rate in 12 centers is presented in Chart above

(i) High prevalent locations – VCTC Attendees




It was noticed on close examination of the data that the prevalence is remaining at high level only in few units. Site wise analysis showed the highest level and trend of HIV prevalence in Jodhpur- District Hospital, Jodhpur. The trend of HIV prevalence among VCTC attendees by sex excluding pregnant women in Jodhpur- District Hospital is presented in Chart above. Total number of persons tested in Jodhpur- District Hospital for HIV was 3999 (2209 males and 1790 females) in 2009. Unit wise prevalence in 2009 is presented in the chart below.

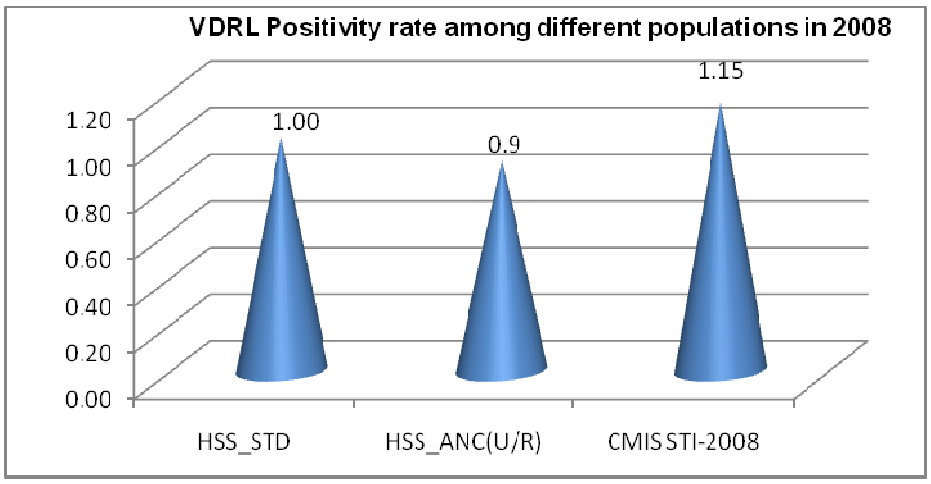



VCTC centers mentioned in the chart above shows high level of HIV prevalence among VCTC Clients in 2009. Various factors may be responsible for this high positivity of HIV. Maximum of these centers are situated at District hospitals. Sirohi, Pali, Jodhpur, Jhunjhunu, Jalore, Dungarpur, Bikaner, Udaipur, Jaipur and Ajmer ICTC centers at District Hospitals may have more and more HIV testing of the clients

involved in high risk behavior. Among above mentioned districts only Udaipur, Jaipur and Ajmer districts have ICTC center at CHC level other than district hospitals.

## 3.5 Level and trend of STI infections in sub populations

### 3.5.1 Level of STI prevalence in Rajasthan




HSS data for different sub populations and CMIS data from the STI clinics are the sources available for assessing the level and trend of sexually transmitted infections. STI positivity rate among different subpopulations as observed from various data sources during 2008 is presented in Chart above

The VDRL positivity rate among the patients of CMIS-STI clinics and HSS STD sites is not comparable as the former represents the general clinic where all cases of STIs attend and the latter is the referral hospitals where attendees are referred patients with advanced STIs. On the other hand, the VDRL positivity rate among CMIS-STI clinic attendees and the same among ANC women is around 1% which may be considered the current level of STI infection among general population.

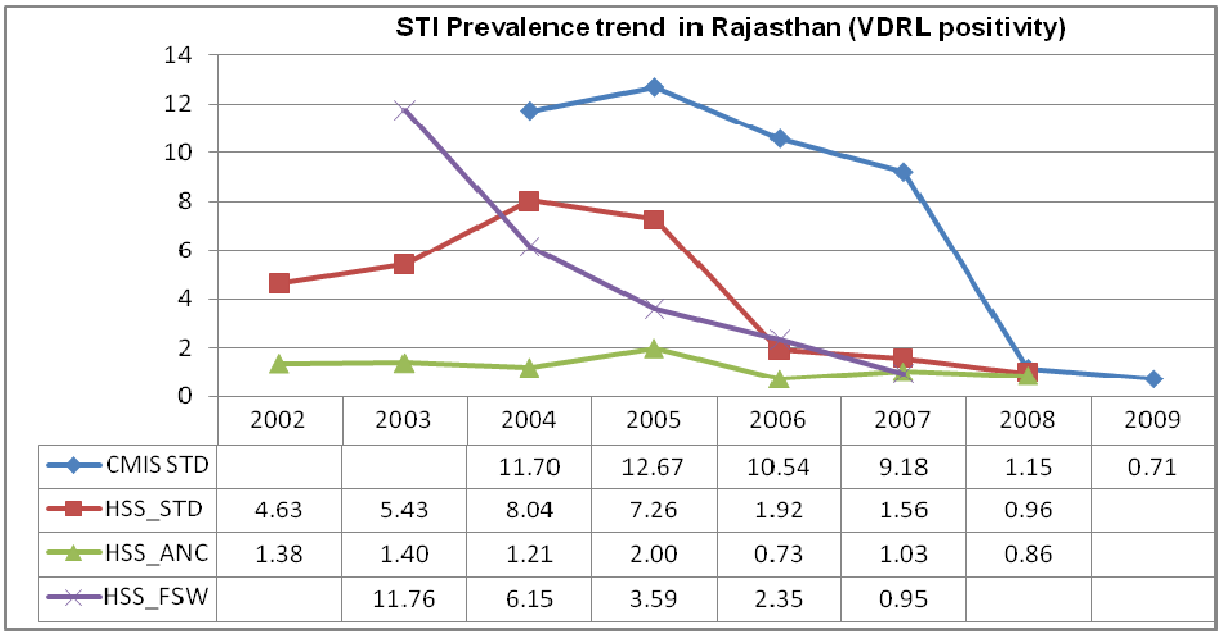
VDRL positivity rate among FSWs of HSS sites in 2007 is 0.95%. Gonorrhoea positivity rate among general population is 0.70%.

**Conclusion on current level of STI prevalence in Rajasthan**

The research hypothesis that can be set from the above comparative analysis is that

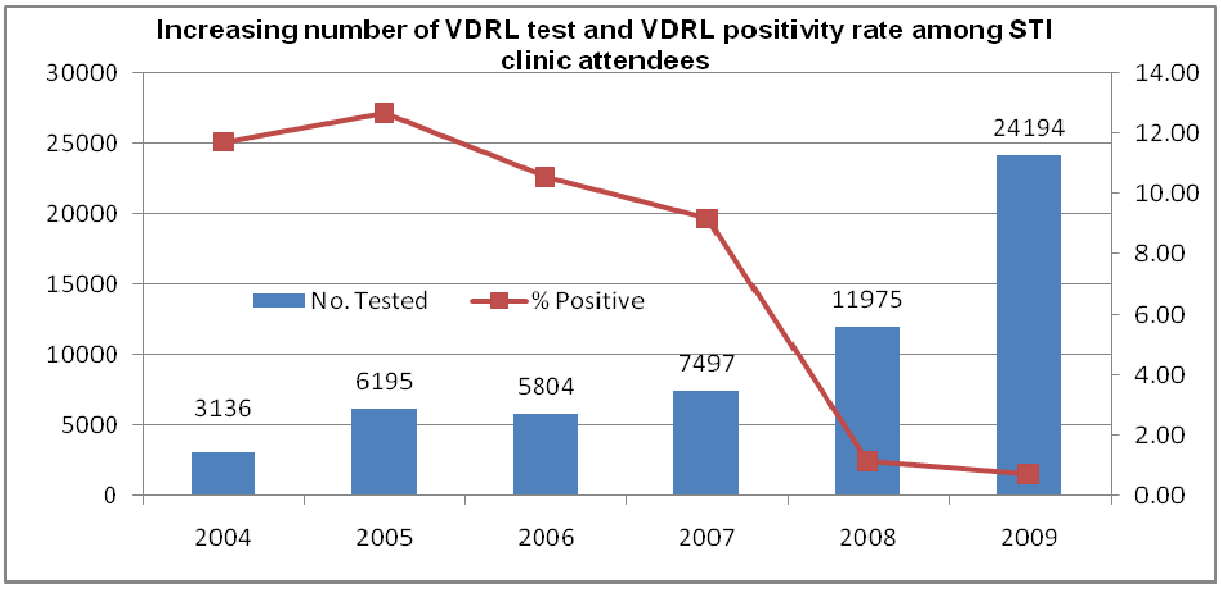
| | |
|---|---|
| VDRL positivity rate among | |
| General population | 1.15% |
| FSW | 0.95% |
| Gonorrhoea positivity rate among | |
| General Population | 0.70% |

### 3.5.2 Trend of STI prevalence in Rajasthan




| | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|
| CMIS STD | | | 11.70 | 12.67 | 10.54 | 9.18 | 1.15 | 0.71 |
| HSS_STD | 4.63 | 5.43 | 8.04 | 7.26 | 1.92 | 1.56 | 0.96 | |
| HSS_ANC | 1.38 | 1.40 | 1.21 | 2.00 | 0.73 | 1.03 | 0.86 | |
| HSS_FSW | | 11.76 | 6.15 | 3.59 | 2.35 | 0.95 | | |

The above chart presents the trend of VDRL positivity among different subpopulations as observed during 2002-09 in HSS sites and general STI clinics – CMIS data. The declining trend of Syphilis positivity was seen in HSS_ANC and HSS_ STD data, while it is almost stable in HSS_FSW data.




The declining trend of VDRL positivity was seen among patients attending general STI clinics is probably due to the increasing number of patient attendance. A comparison of number tested and positivity rate is presented in Chart above.

### 3.5.3 STI awareness and prevalence according to DLHS-III

Bharatpur and Dungarpur are the two extreme districts as far as ever married women who have heard about RTIs/STIs are concerned, with 11.4 and 70.7 percent having heard of it. There are seven districts in Rajasthan where more than 60 percent of ever married women have heard about RTIs/STIs. The districts are Dungarpur, Kota, Udaipur, Bhilwara, Chittaurgarh, Rajsamand and Banswara. Women who have reported having abnormal vaginal discharge and any symptom of RTIs/STIs in Rajsamand are 5.7 and 9.3 Percent respectively and in Dausa are 37.2 and 28.6 percent respectively. In seven districts, namely Bhilwara, Rajsamand, Udaipur, Dungarpur, Banswara Chittaurgarh and Kota more than 70 percent of women with symptoms of RTIs/STIs have sought treatment and it is more than 90 percent in Rajsamand district while in remaining districts 20-40 percent women sought treatment for any symptoms of RTIs/STIs.

**Chapter 4**

## Drivers of the HIV epidemic in Rajasthan

Preliminary analysis of level and trend of HIV infection among various sub populations in Rajasthan indicates that the major driving forces of the epidemic in the state are FSWs, clients of FSW and MSMs. Size of each risk group active in different areas, HIV prevalence among them and their net work of risk behaviour will explain the dynamics of the transmission force. An attempt to understand these dynamics has been carried out by analyzing the available information through Mapping report/TI coverage reports and HIV positivity in different groups attended VCTC.

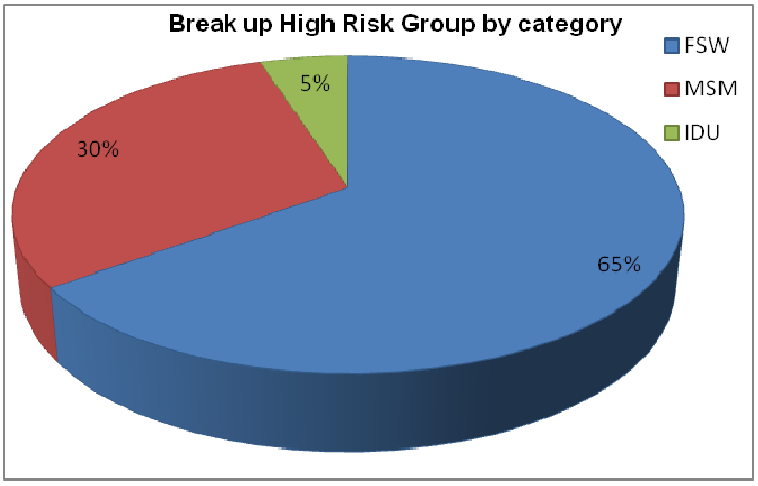
### 4.1 Known size of driver populations

Since size estimates of different risk groups operating in Rajasthan is available through Raman Mapping Report-2009.The actual volume of high risk groups active in the districts may be much larger. FSW, MSM and IDU population covered by Raman Mapping-2009 in various districts is presented in Table below. Table: Coverage of HRGs by Raman Mapping-2009

| S.No. | District | FSW | MSM | IDU | Total |
|---|---|---|---|---|---|
| 1 | Ajmer | 997 | 473 | 589 | 2059 |
| 2 | Alwar | 241 | 299 | 40 | 580 |
| 3 | Banswara | 1443 | 385 | 0 | 1828 |
| 4 | Baran | 250 | 0 | 0 | 250 |
| 5 | Barmer | 711 | 0 | 45 | 756 |
| 6 | Bharatpur | 403 | 340 | 148 | 891 |
| 7 | Bhilwara | 495 | 350 | 28 | 873 |
| 8 | Bikaner | 1327 | 105 | 287 | 1719 |
| 9 | Bundi | 267 | 0 | 0 | 267 |
| 10 | Chittaurgarh | 309 | 201 | 50 | 560 |
| 11 | Churu | 2284 | 300 | 0 | 2584 |
| 12 | Dausa | 189 | 23 | 0 | 212 |
| 13 | Dhaulpur | 178 | 0 | 0 | 178 |
| 14 | Dungarpur | 843 | 689 | 0 | 1532 |
| 15 | Hanumangarh | 1448 | 128 | 44 | 1620 |
| 16 | Jaipur | 790 | 2265 | 15 | 3070 |
| 17 | Jaisalmer | 962 | 2514 | 0 | 3476 |
| 18 | Jalor | 140 | 0 | 0 | 140 |
| 19 | Jhalawar | 86 | 0 | 65 | 151 |
| 20 | Jhunjhunun | 2589 | 554 | 0 | 3143 |
| 21 | Jodhpur | 3380 | 1186 | 137 | 4703 |
| 22 | Karauli | 340 | 0 | 0 | 340 |
| 23 | Kota | 612 | 537 | 366 | 1515 |
| 24 | Nagaur | 730 | 0 | 0 | 730 |
| 25 | Pali | 608 | 0 | 0 | 608 |
| 26 | Pratapgarh | 48 | 107 | 0 | 155 |

| | | | | | |
|---|---|---|---|---|---|
| 27 | Rajsamand | 469 | 0 | 0 | 469 |
| 28 | Sawai Madhopur | 500 | 162 | 0 | 662 |
| 29 | Sikar | 301 | 173 | 0 | 474 |
| 30 | Sirohi | 752 | 92 | 0 | 844 |
| 31 | Shri Ganganagar | 2567 | 127 | 217 | 2911 |
| 32 | Tonk | 244 | 306 | 0 | 550 |
| 33 | Udaipur | 1030 | 1144 | 30 | 2204 |
| | Total | 27533 | 12460 | 2061 | 42054 |

A total of 42054 high risk behaviour individuals have been registered and mapped for intervention services. FSWs and MSMs are the larger groups covering 27533 and 12460 individuals respectively in each. Among total mapped HRGs, there is 65% FSWs, 35% MSMs and 5% are IDUs. Clients of FSWs are not covered by any agencies. However, they are the indirect driving force as evident from presence of HIV positive VCTC male clients. Traditional caste based sex work is practiced in some areas of States. Sex work is accepted as the profession by some castes. Kanjar, Nat, Sansi and Bedia are known for sex work in the state. Villages of Sawaimadhopur, Tonk, Ajmer, Bundi and Alwar districts are known for such sex work.




| Category | No. of HRGs |
|---|---|
| FSW | 27533 |
| MSM | 12460 |
| IDU | 2061 |

In tribal districts like Sirohi, Rajsamand, Banswada, Udaipur and Dungarpur – Sex work is need and poverty driven. Sexual exploitation of the tribal females is common. Lack of education, extreme poverty, lack of employment opportunities and alcoholism; make females most vulnerable. Sex worker among tribes belongs to specific caste like Bhil, Garasia, Damor and others.

Total 136 villages of 25 districts were identified and 5510 sex workers were estimated additionally.

Out of total FSW mapped, 41% (11161) were home based, 28 %( 7780) street based, 10 %( 2634) brothel based while lodge based, dhaba based and High based together are 21%.

Out of total MSM population mapped, 43 %( 5292) were Kothis, 30% (3724) double deckers, Male Sex Workers were 20% (2514) and 7%(930) were Hijras.

Total 2061 injecting drug users were mapped out of which 61% (1252) share needles and syringes

### 4.2 HIV prevalence among drivers of the epidemic

Though the HIV prevalence among FSW in 2007 observed in HSS site was higher (4.16%) compared to previous years (2.55%). In 2008 there was not any HSS site for FSWs in Rajasthan. Therefore, HIV prevalence among FSWs is considered remaining stable and the current level is 4.16%. Valid information on HIV prevalence among MSMs is not available.

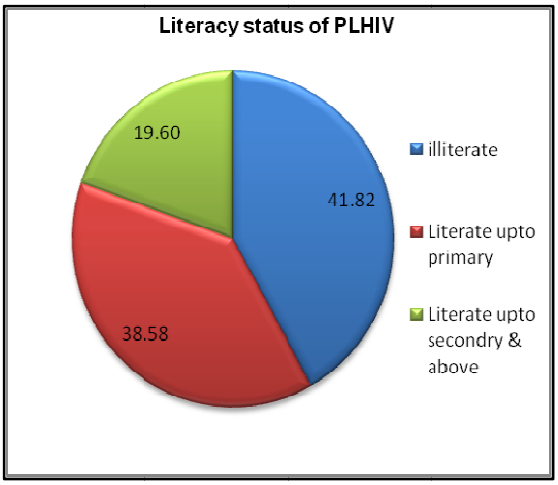
### 4.3 ART data of PLHIV

According to ART data there are total 8075 People in the district living with HIV/ AIDS. This data constitutes 5227 male and 2848 female in the state. Udaipur, Pali, Nagaur and Jaipur are the districts where PLHIV are greater than 500. Some more districts like Ajmer, Bikaner, Bhilwara, Dungarpur, Chittaurgarh, Jalore, Jodhpur and Sikar are carrying PLHIV greater than 300 and less than 500.

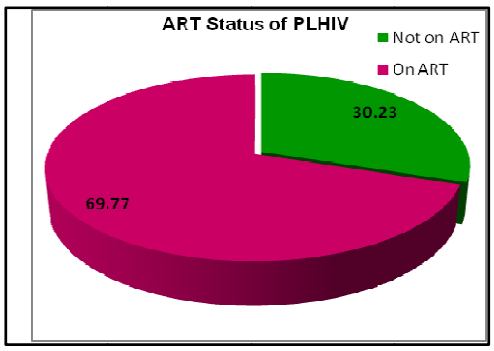
| S.No. | District | Male | Female | Total |
|---|---|---|---|---|
| 1 | Ajmer | 221 | 93 | 314 |
| 2 | Alwar | 177 | 64 | 241 |
| 3 | Banswara | 115 | 89 | 204 |
| 4 | Baran | 10 | 10 | 20 |
| 5 | Barmer | 199 | 88 | 287 |
| 6 | Bharatpur | 110 | 37 | 147 |
| 7 | Bhilwara | 288 | 125 | 413 |
| 8 | Bikaner | 199 | 103 | 302 |
| 9 | Bundi | 38 | 15 | 53 |
| 10 | Chittaurgar | 195 | 103 | 298 |
| 11 | Churu | 182 | 105 | 287 |
| 12 | Dausa | 37 | 21 | 58 |
| 13 | Dhaulpur | 66 | 48 | 114 |
| 14 | Dungarpur | 186 | 162 | 348 |
| 15 | Hanumang | 64 | 43 | 107 |
| 16 | Jaipur | 439 | 170 | 609 |
| 17 | Jaisalmer | 39 | 6 | 45 |
| 18 | Jalor | 220 | 115 | 335 |
| 19 | Jhalawar | 38 | 14 | 52 |
| 20 | Jhunjhunur | 192 | 99 | 291 |
| 21 | Jodhpur | 323 | 128 | 451 |
| 22 | Karauli | 38 | 14 | 52 |
| 23 | Kota | 95 | 52 | 147 |
| 24 | Nagaur | 387 | 167 | 554 |
| 25 | Pali | 315 | 242 | 557 |
| 26 | Pratapgarh | 27 | 13 | 40 |
| 27 | Rajsamand | 146 | 116 | 262 |
| 28 | Sawai Mad | 27 | 17 | 44 |
| 29 | Sikar | 236 | 144 | 380 |
| 30 | Sirohi | 101 | 76 | 177 |
| 31 | Shri Ganga | 77 | 55 | 132 |
| 32 | Tonk | 49 | 32 | 81 |
| 33 | Udaipur | 391 | 282 | 673 |
| | Total | 5227 | 2848 | 8075 |

Out of the total maximum of PLHIV i.e. 47.09% are in the age group 30-39 and approx. 24.07% are in the age group 40-49.

There is no information available regarding marital status of 17.53% of the total PLHIV. Out of the remaining approx. 82% of PLHIV are widowed / divorced.




As far as literacy is concerned, information is not available about 17.34% of the total PLHIV. Out of the remaining, it was found that 42% of People living with HIV are illiterate and approx. 39% of them are literate till primary.

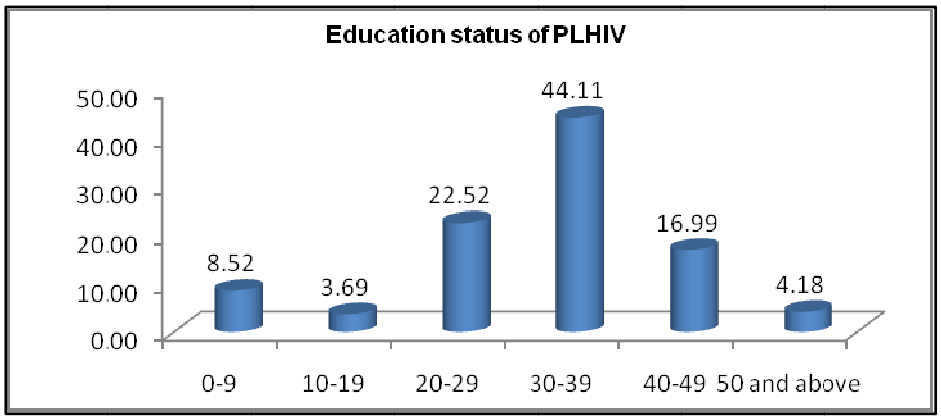



Among 8075 PLHIV only 70% are receiving anti retro viral therapy, while remaining i.e. about 30% are not on ART, which needs to be encouraged to get the therapy in the state.

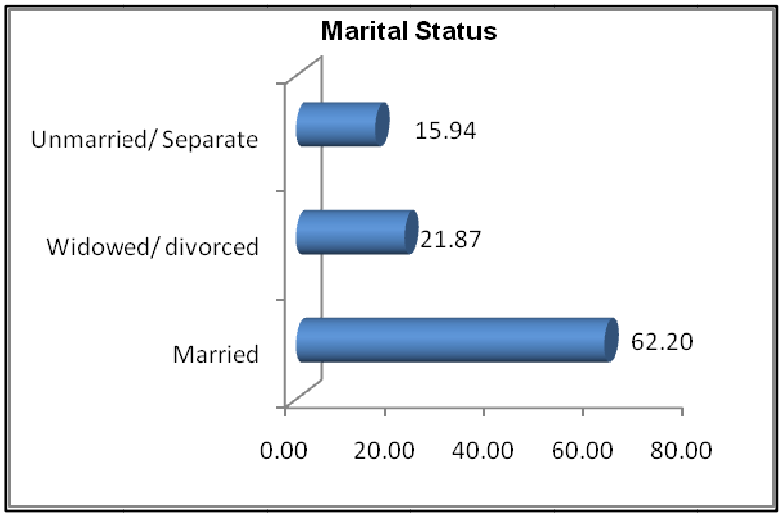
Blockwise distribution of PLHIV is also available in the ART data. This has been elaborated in the district reports.

### 4.4 District Level Network for PLHIV

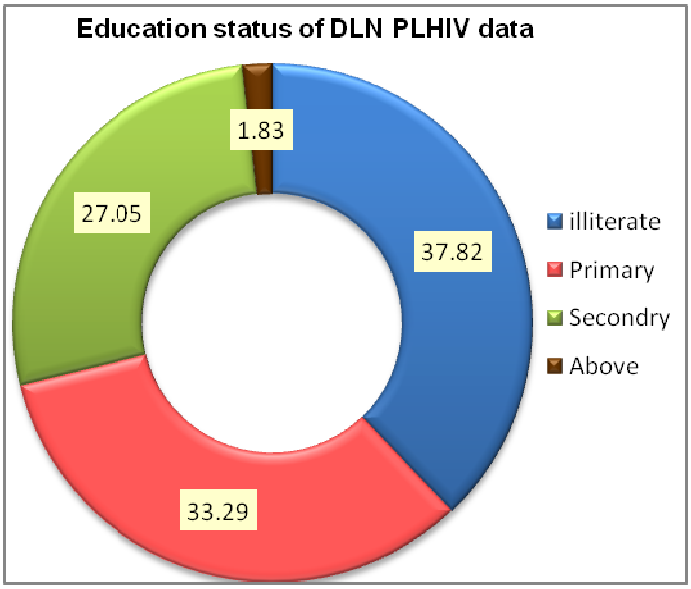
This network data gives information about 6293 PLHIV. Out of which 53.12% are male and 46.87% are female PLHIV under district level network.



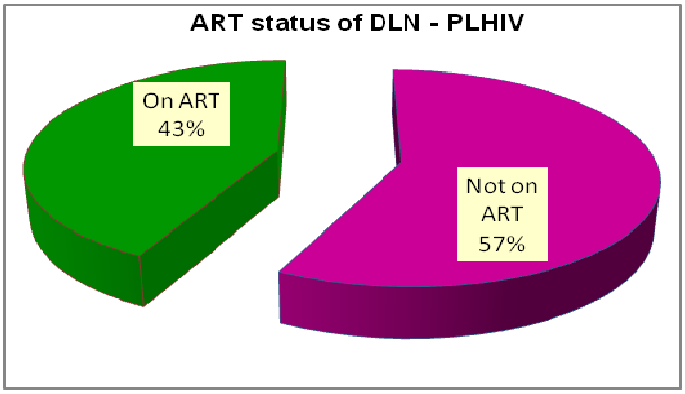

Data belonging to DLN of PLHIV also gives the maximum presence of PLHIV in the age group 30-39. Both the data sets for people living with HIV/AIDS give less or more the same information about age group. Out of the total PLHIV under DLN data, 22.52% are in the age group 20-29 and 16.99% are in the age group 40-49.




Absolutely opposed to the ART data, marital status of maximum of PLHIV is married evolved in DLN data. Married PLHIV contributes 62.20% People living with HIV/AIDS according to DLN data provided by RNP Plus.




As the chart depicts maximum of PLHIV are illiterate (i.e. 37.8%), which is more than PLHIV literate up to primary (i.e. 33.2%). This data reveals that with the growth of literacy status positivity of HIV decreases. People living with HIV literate up to secondary are also in good figure i.e. 27.05% of the total.




ART data reveals that 70% of PLHIV are receiving Anti Retro Viral therapy at ART center, while the same therapy is being received by 43% of PLHIV according to DLN data. Reason of receiving ART less under District Level Network may be due to registration of people with HIV positivity at both the places i.e. at ART center and at DLN. PLHIV registered at both the places might be having therapy at one place. One of the reasons could be difference in service quality between both the organizations.

Block wise categorization of PLHIV is being presented in the Data tables (Sheet: DLN PLHA).

**Chapter 5**

## Programme Response

### ICTC Centers

- Voluntary counseling and testing services were initiated in the year 1999. At present all Medical colleges and 33 districts hospitals have ICTC
- 102 CHC out of total of 368 CHC's of Rajasthan have ICTCs.
- In financial year 2009-10 till December 1, 51,170 general clients were counseled, 1, 35,322 tested & 5677 HIV positive persons were detected.
- Overall sero-positivity rate of 4.2%.
- Current testing utilization is 11 clients per day.
- In 2009, testing percentage among registered pregnant cases was 76% while only 59% testing was observed among direct in labor cases.
- Overall coverage of HIV +ve pregnant women and their babies with NVP is 54.7% in the state.
- Medical Units, which are running ICTC centers in Rajasthan are as following:

| | Medical Colleges | District Hospital | CHC/Sub District Hospital | 24x7 | PPP |
|---|---|---|---|---|---|
| Total No of ICTCs | 13 | 50 | 119 | 46 | 24 |

### ART Centers

- There are 19258 PLHA registered at ART centers of Rajasthan. The total 6 ART centers are functioning in the state which provides ARV doing to 6641 PLHAs (As per report of Feb 10). These ART centers are:

    - S.M.S Medical College, Jaipur in 2005
    - Dr. S.N Medical College, Jodhpur in 2006
    - R.N.T Medical College, Udaipur in 2007
    - P.B.M Medical College, Bikaner in 2007
    - M.B.S. Medical College Kota in 2009.
    - J.L.N. Medical College, Ajmer in 2010

- Services available at these ART centers (free of cost) are as :-

    1. Counseling
    2. Investigation
    3. CD-4 Test
    4. 4 ARV Drugs
    5. O.I Drugs
    6. Knowledge of Social beneficial Scheme

7. Condoms
8. IEC Material
9. Knowledge about network people
10. Referral to CCC

- Link ART Centers in districts.

| S.No. | Name of LAC |
|---|---|
| 1 | General Hospital, Alwar |
| 2 | S.K. Hospital, Sikar |
| 3 | Sadar Hospital, Dholpur |
| 4 | General Hospital, Karauli |
| 5 | General Hospital, Swaimadhopur |
| 6 | Govt. Hospital, Ganganagar |
| 7 | M.G. Hospital, Banswara |
| 8 | M.G. Hospital, Bhilwara |
| 9 | Govt. Hospital, Chittorgarh |
| 10 | R.B.M. Hospital, Bharatpur |
| 11 | D,B, Hospital, Churu |
| 12 | General Hospital, Sirohi |
| 13 | B.D.K. Hospital, Jhunjhunu |
| 14 | Sadat Hospital, Tonk |
| 15 | General Hospital, Barmer |
| 16 | General Hospital, Jalore |
| 17 | Govt. Hospital, Nagaur |
| 18 | Bangar Hospital, Pali |
| 19 | Jhalawar Medical College & Hospital Society, Jhalawar |
| 20 | District Hospital, Rajsamand |
| 21 | General Hospital, Dungarpur |

**NGO's (Targeted Intervention)**

- Currently there are 34 TIs working with core groups. Three TI are working with MSM & 3 with IDUs, 28 are working with FSW population and 7 are core composite intervention. 9 TIs are working with migrant population. Similarly, two TIs are working with truckers. Thus total numbers of TIs are 52.
- Targeted Interventions emphasize and focus on the following elements that are the core activities of a TI:

    - Information gathering
    - Behaviour change communication
    - Access to STI services to be provided by the NGO itself or by arrangement with a public / private facility,
    - Monitoring access and utilization of condoms
    - Ownership building, and
    - An enabling environment

**STD Clinics**

- In Rajasthan minimum STI and RTI services are available in all PHCs, CHCs; first referral units (FRUs).The specialization of STI/RTI clinics is available in all Medical Colleges and most of the district hospitals. All TIs have established exclusive STI and RTI services and linkages with existing qualified service providers. NACO is supporting the 47 STI clinics in the states and one time budgetary support has been received by RSACS for strengthening infrastructure for these STI clinics.

**Community Care Centers**

- To support the social and psychological need of patients living with HIV and AIDS, presently eight Community Care Centers running in Rajasthan. Patients from all over Rajasthan visit these centers
- Types of Services being provided at CCC.
    - Counseling Services
    - Nutritional Counseling and support for inpatients
    - Treatment and Patient Management

- Referral and Outreach services
- Other Support Services

**Multi Partner Peer Counselor Initiative**

- With locally funding for UNICEF, Clinton foundation, CRS Technical support four state level positive networks & world vision. A peer counselor initiative was started in Rajasthan where a ppositive person was appointed in every district with ICTCs
- These peer counselor do field visits and provides link bet services like PPTCT, ART, OI & PLHA.
- Four network were formed & registered by these peer counselor Excellent work has been done by these in following list to follow up zones from ART centre. Many PHLA were put on ART again.

**Mainstreaming of HIV/AIDS Programme in Rajasthan**

- 1760 Government employees trained on Mainstreaming of HIV from focus govt. departments i.e. Rural Development, Urban Development, Tribal Department, Panchyati Raj, Railways, and Tourism Department, till 31 March 2009.
- 224 Non HIV NGO's trained on Mainstreaming of HIV from six high prevalent districts of Rajasthan specifically from Jaipur, Jodhpur, Udaipur, Barmer, Ajmer, Alwar, till March 2009.
- 1272 White and Blue color employees of Private Sectors was trained on Mainstreaming of HIV from 38 companies till 31 March 2009.
- Approximately 5000 AWW, ANM, ASHA, Media Persons etc. trained on the concept of Mainstreaming of HIV till 31 March 2009

**Information Education and Communication**

- Some of the initiatives taken in IEC regard includes TV spots, Long format TV programmes, Satellite & Cable TV, Audio Spots, Long format Radio programs, News paper and book let advertisements, Media campaign, IEC material production, replication and newsletter, Outdoor and mid media ,Events , documentation, ,Intervention with out of school youth, RRC in colleges and universities, mainstreaming, trainings etc.
- Some of the major events that are being organized are International Women Day, International Youth Day, National Blood Donor Day, National Voluntary Blood Donation Day, and World AIDS Day to mark the days.

- Technical Resource Group has also been formed with the purpose of facilitating and reviewing communication strategies, media plans and the annual communication action plan, approves new IEC approaches and material. Regular meetings of TRG are being held to seek the approval and recommendations of the members of the group on the IEC material and activities.
- Over 220 Red Ribbon Clubs have been formed in educational institutions to create and provide opportunity to the zeal of volunteerism among youth to contribute in controlling and preventing the further spread of HIV/AIDS. It is noteworthy to mention that Red Ribbon Club is a voluntary on campus intervention.
- **Mainstreaming -** Mainstreaming programme is being implemented in the thirteen priority districts of the state, of which six districts have been covered through UNDP funded State Mainstreaming Unit with the objective of "Support to National Efforts for Mainstreaming of HIV" while the remaining seven districts of the state have been covered through RSASCS fund this year.
- **Major accomplishments of state mainstreaming programme are** Orientation of different government departments on including PRI, Education, Health, Transport, tourism, Labour, Women and Child Development, Railway, Social Justice and Empowerment, tribal welfare etc to integrate HIV/AIDS as an issues in their regular programme and activities.
- Involvement of industries, employer organization with specific HIV/AIDS policy and workplace programme. Number of industries have initiated HIV/AIDS programme like Jindal, SAB Miller, Escort Fortis etc.
- Involvement of Civil Society Organization in HIV/AIDS programme at the district level.
- Training Completed
    - 3154 Govt. Employees trained on HIV/AIDS
    - 1500 Private sector employees trained and 95 industries made policy declaration on HIV/AIDS.
    - Civil Society Organization formed in all six of the priority district.
    - 22,400 frontline workers (ANMs, ASHAs, and AWWs) trained on HIV/AIDS

**Schemes to benefit**

- The State Government has taken several measures to ensure the welfare of the infected and affected persons and benefit them under several departmental schemes which are as follows:-
    - In compliance to the order of the State Cabinet, decision has been taken to provide the

facility of free medical examination, medicines and treatment to the HIV patients under the **Mukhya Mantri BPL Jeevan Raksha Kosh** with immediate effect

- On the issuance of medical certificate to the persons affected by HIV/AIDS by the team, formed by the Medical Department, concession of 75 percent in the bus fare and 50 percent concession shall be provided in the fare of railways to the AIDS patient for the journey from their residence to the hospital for the purpose treatment.
- In compliance of the decision taken by the Union Food & Civic Supplies Department, New Delhi, the Food & Civic Supplies Department, GoR has included the HIV/AIDS affected persons in the **Antyodaya Ann Yojana.**
- The Social Justice & Empowerment department, GoR, under the **Widow Pension Scheme,** is providing a pension of Rs 400 per month to all the HIV/AIDS affected women of any age.

- "A widow of any age who is HIV/AIDS positive and registered with the RSACS shall be included in the definition of the destitute for the purpose of these rules."

- Rajasthan State AIDS Control Society has directed all the government and non government blood banks to make available, free of cost, blood to the HIV/AIDS affected persons, when required, without donor.

**Chapter 6**

## Triangulation Summary

### Level and trend of HIV infection

| Sub population | Level | Trend |
|---|---|---|
| Pregnant women | 0.10% | stable |
| High risk behaviour men | 4.51% | stable |
| High risk behaviour women | 4.37% | stable |

### Age differential ≤ 25 years / 25+ years

| Differentials | HIV positivity HSS_ANC 2008 |
|---|---|
| Age | ≤25 age group only |
| Residence | Urban : Rural is 0.10 : 0.26 |
| Literacy | Illiterate: litterate is 0.16 : 0.20 |
| Occupation | Approx. 90% are Housewives |

### Sex ratio female/male

High risk behaviour population 4.37**:** 4.51

### Level and trend of sexually transmitted infections

The research hypothesis that can be set from the above comparative analysis is that

VDRL positivity rate among

| | |
|---|---|
| General population | 1.15% |
| FSW | 0.95% |

Gonorrhoea positivity rate among

| | |
|---|---|
| General Population | 0.70% |

Trend of VDRL positivity among all groups is stable

### Drivers of the epidemic

FSWs, MSMs and clients of sex workers are the main drivers of epidemic.

ART data gives the presence of 8075 PLHIV, while DLN data reveals 6293 PLHIV spread among all the districts of Rajsthan.