

**ORIGINAL ARTICLE**

# HIV SENTINEL SURVEILLANCE AMONG HIGH RISK GROUPS: SCENARIO IN GUJARAT

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**ABSTRACT**

**Background:** Surveillance is the ongoing systematic collection, collation, analysis and interpretation of data so that appropriate action can be taken within time.

**Aims and Objective:** The present annual HIV sentinel surveillance (HSS) was carried out for monitoring trends of HIV epidemic in high risk group populations in selected sites of Gujarat state..

**Methodology:** The HSS was carried out in representative populations from High Risk Group (HRG) like Female Sex Workers (FSW), Man having Sex with Man (MSM) and Single Male Migrant. Target sample size was 250 at each HRG site (Female Sex Worker, Male Sex Male & SMM). Consecutive sampling was done at designated sentinel site for selecting the survey participants.

**Results:** Overall 3726 samples (1494 FSWs, 1732 MSMs & 500 SMM) were tested in the High risk group of HSS 2008. The overall sero-positivity in samples from FSWs, MSMs sites was 4.5%. Sero-positivity was more or less high ( $\geq 5\%$ ) among FSWs as well as MSMs irrespective of age, place of residence, literacy level, occupation; and migration status.

**Conclusion:** The overall trend of sero-positivity in High risk groups shows decreasing trend of HIV in the state from 2004 to 2008.

**Keywords:** HIV, Sentinel Surveillance, High Risk Groups, Prevalence

**INTRODUCTION**

Surveillance is the *ongoing systematic* collection, collation, analysis and interpretation of data in order that Action may be taken. Deriving programmatic implications for further Action is the main purpose of Surveillance system. Surveillance is aimed to provide data within the limitations of time and extent. Feasibility and cost-effectiveness to conduct the study every year is an important aspect in planning the surveillance activities. For HIV sentinel surveillance, specific sites are selected across the country for different target populations where an annual exercise of collecting a stipulated number of samples for HIV testing is undertaken. Since data is collected from the

same selected sites every year, it provides information to understand the spread and trends of HIV epidemic in different geographical regions as well as in different population sub-groups. In the absence of any other information, the data is also used for the purpose of estimation of HIV infected persons in the country.<sup>1</sup>

Annual HIV sentinel surveillance (HSS) has remained the mainstay for monitoring trends of HIV epidemic in high and low risk populations and also for HIV disease burden estimation in India since its inception from 1998.<sup>2</sup> HRGs are very important for HIV epidemic in any locality, not only for spread of infection but also to curtail it. This study used a piece of data

collected during HIV sentinel surveillance in 2008 in Gujarat.

## METHODOLOGY

The HSS was carried out in representative populations from High Risk Group (HRG), Bridge population as well as Low Risk group. The HRG populations were represented by patients attending STDs clinics (10 sites), FSWs and MSMs at TI (15 sites). All individuals attending the designated sentinel site during the period of surveillance (June – August 2009 for HRG sites) were recruited during the HSS. Target sample size was 250 at HRG site (FSW, MSM & SMM). The target sample size was achieved by each of HRG sites.

Consecutive sampling was done at designated sentinel site for selecting the survey participants. The collections of participants at HRG site were based on strict inclusion criteria. All Female sex workers (FSW - a women aged 15-49 years who have sold sex in the past one month) & Men Having Sex with Men (MSM - an individual who have sex with men in the past six months) Single Male Migrants (SMM - Migrant who has stayed away from his spouse/family for more than 6 months in a year) were included in the sample.

Availability of line list at TI-NGO site provides an opportunity for random sampling. The serially numbered line list of HRGs was compiled by NGOs to use it as 'sampling frame'. This sampling frame was sent to Regional Institute for randomization. If randomly selected individual doesn't found eligible or refuses to give consent, reasons for the same were documented in the register at site. In place of random numbers of individuals who could not be recruited from the first list will be replaced with additional random numbers from the second list of 150 by respective SST member with weekly feedback and replacement.

As per HSS protocol, it's mandatory to ensure the confidentiality of the survey participants and hence the HIV testing is unlinked to any identifiers of the individual concerned. Each questionnaire was given a unique code number that linked it with the laboratory result.

The data collected from various sentinel sites were entered into web-based software at SACS level while second entry was done by Regional Institute. The double entry process improved

the data minimizing errors which took much time and delayed the receipt of final version of HSS data to GSACS.

## RESULTS:

Overall 3726 samples (1494 FSWs, 1732 MSMs & 500 SMM) were tested in the High risk group of HSS 2008. Table 1 presents the percentage distribution of survey participants by age group, residence and education status. At MSM, FSW as well as SMM site, majority of participants were from the age group of 20-44 yrs (91%, 94% and 96% respectively). Notably, of all MSMs participants, 5% were aged less than 20 yrs.

In case of FSW and MSM sites, participants were almost always from urban areas. Among SMM, equal participation from urban & rural area. The educational distribution of women participants at different sites illustrates that almost half (47%) of the FSWs participants were illiterate. Notably, almost half (60%) of the MSMs & SMM were educated till 12<sup>th</sup> standard. In case of MSMs, almost one third of participants were working as Industrial/Factory worker while 23% doing service in Govt. or private sector.

**Table 1:** Distribution of participants by age group, residence and education status, HSS 2008

Characteristics	MSM	FSW	SMM
<b>Participant (n)</b>	1732	1494	500
<b>Age Group (%)</b>			
Below 20	4.50	1.54	1.80
20-29	59.47	34.87	63.60
30-44	31.58	59.10	33.00
45 and Above	4.04	4.48	1.40
Missing	0.40	0.00	0.00
<b>Place of Residence</b>			
Urban	94.92	96.79	49.80
Rural	1.44	2.34	50.00
Missing	3.64	0.87	0.20
<b>Literacy</b>			
Illiterate	13.80	46.79	0.20
Literate and Till 5th	24.25	33.60	32.40
Till 12th	58.37	18.54	59.40
Till Graduation	1.62	0.67	7.00
Graduate and Above	1.62	0.40	1.00
Missing	0.35	0.00	0.00

The overall sero-positivity in samples from FSWs, MSMs sites was 4.5%. Sero-positivity was more or less high ( $\geq 5\%$ ) among FSWs as well as MSMs irrespective of age, place of residence,

literacy level, or migration status. The detailed analysis is given in Table 2 above. Typology Wise Street based FSWs & Kothi among MSM

showed more than 5% positivity. Among MSM, unprotected anal sex is the sexual behavior with the highest risk for HIV transmission.<sup>3-7</sup>

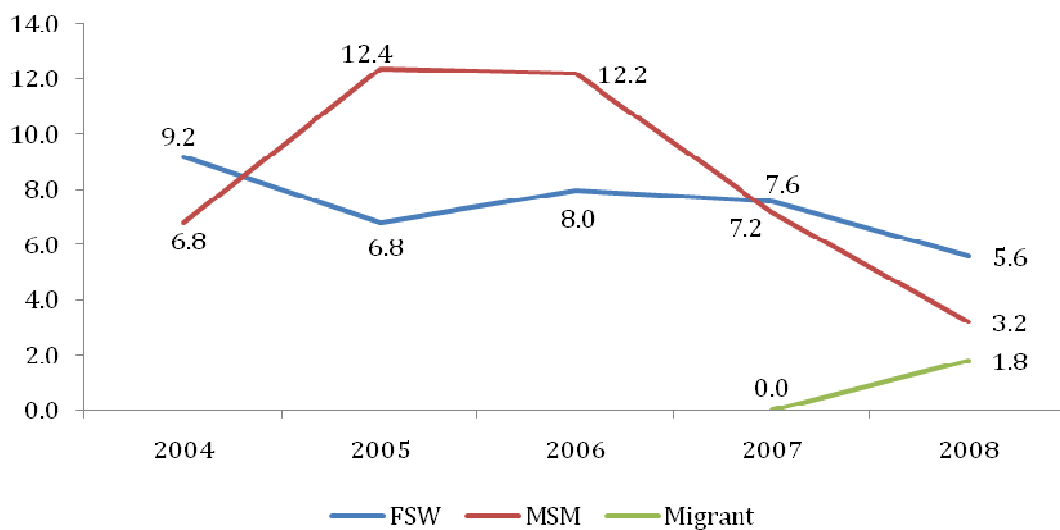
**Table 2:** Positivity at MSMs, FSWs and SSMs site

Characteristics	MSMs		FSWs		SMM	
	Tested	Positive (%)	Tested	Positive (%)	Tested	Positive (%)
<b>Age Group</b>						
Below 20	78	5 (6.41)	23	0 (0.00)	9	0 (0.00)
20-29	1030	46 (4.47)	521	31 (5.95)	319	7 (2.19)
30-44	547	35 (6.40)	883	21 (2.38)	165	2 (1.21)
45 and Above	70	6 (8.57)	67	4 (5.97)	7	0 (0.00)
Missing	7	1 (14.29)	0	0 (0.00)	0	0 (0.00)
<b>Place of Residence</b>						
Urban	1644	86 (5.23)	1446	52 (3.60)	249	6 (2.41)
Rural	25	3 (12.00)	35	4 (11.43)	250	3 (1.20)
Missing	63	4 (6.35)	13	0 (0.00)	1	0 (0.00)
<b>Literacy</b>						
Illiterate	239	11 (4.60)	699	31 (4.43)	1	0 (0.00)
Literate and Till 5 <sup>th</sup>	420	22 (5.24)	502	15 (2.99)	162	3 (1.85)
Till 12 <sup>th</sup>	1011	57 (5.64)	277	10 (3.61)	297	6 (2.02)
Till Graduate	28	2 (7.14)	10	0 (0.00)	35	0 (0.00)
Graduate and Above	28	1 (3.57)	6	0 (0.00)	5	0 (0.00)
Missing	6	0 (0.00)	0	0 (0.00)	0	0 (0.00)
Total	1732	93 (5.37)	1494	56 (3.75)	500	9 (1.8)
Median Prevalence*		5.60		3.22		

\*Median Prevalence is preferred for comparison with national and international data as well in analysis due to skewed distribution of HIV positivity in FSW & MSM sentinel sites.

Sexual transmission has been associated with nondisclosure of HIV infection with casual partners. Not discussing HIV status and not knowing a partner's HIV status were particularly common in the casual partnerships

of the men surveyed. Efforts to improve communication skills related to HIV status and condom use with sexual partners might reduce the sexual transmission of HIV among MSM.<sup>8,9</sup>



**Fig 1:** Median Prevalence of HIV at FSWs (6), MSMs (7) and Migrant (2) Sites, Gujarat HSS 2004-08

Site wise analysis revealed that HIV seropositivity was  $\geq 5\%$  at 2 FSW sites (Vadodara and Ahmedabad). In case of MSMs, the seropositivity was  $\geq 5\%$  at Bhavnagar, Jamnagar, Surat and Rajkot. The year wise trend in median HIV positivity indicates a decreasing trend at both FSWs and MSMs site. At FSW site, % positivity has shown increased at Vadodara, while it has increased at MSM site in district Surat & Vadodara. However the change in recruitment methodology for HRGs in 2008 necessitates interpreting the trend with caution with support from TI/STI data and triangulation.

## CONCLUSION

The overall trend of sero positivity in High risk groups shows decreasing trend of HIV in the state from 2004 to 2008. However the prevalence in HRGs are still high and needs continuous and accelerated efforts to achieve NACP III goal.

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