

National AIDS Control Organization



Facts & Figures

HIV Estimates - 2003

Globally, the HIV sentinel surveillance system has been recognised as an optimal mechanism to monitor trends of HIV infection in specific high-risk groups as well as low risk groups. In India, high-risk groups of population include patients attending STD clinics, MSM clinics and drug de-addiction centres while mothers attendingantenatal clinics are regarded as a proxy for the general population. The rationale of choosing sentinel sites in these clinics is that the samples from the respective risk groups, attending these clinic-based settings could be collected at regular intervals. The whole procedure is "Unlinked Anonymous". The frequency of collection of samples is once every year, during August to October.

Since 1998, this set of data from the HIV surveillance is also used to estimate the number of HIV infections in the country, by taking into account certain assumptions. These assumptions were evolved after a series of consultations with national and international experts. During 2003-04, these assumptions were validated through deliberations. As there is always under-reporting of infections in the public sector health delivery system, this estimate exercise has been of immense use for advocacy and evidence based planning.

The Annual Round of HIV Sentinel Surveillance, 2003, was conducted in 455 sentinel sites in all the States and UTs. These included:

- 271 sites at ante-natal clinics (as proxy for the general population)
- 166 sites in clinics for sexually transmitted diseases
- 13 sites among injecting drug users
- 3 sites for men having sex with men
- 2 sites for commercial sex workers.



Additionally, data was also collected from the 44 Targetted Intervention based sites.

For the analysis of the primary data from these sentinel sites, this year, the followingsteps were taken to ensure professional peer review and independent assessment.

(i) The Indian Council of Medical Research was requested to participate in this exercise.

(ii) A core group of experts was set up, including eminent epidemiologists and biostatisticians (national and international). WHO and UNAIDS were members. ICMR and NACO convened Expert Group Meetings to review the procedures and data used for estimation.

(iii) Two institutions, National Institute of Health and Family Welfare (NIHFW) and the Institute for Research in Medical Statistics (IRMS) were identified to independently analyse the Sentinel Surveillance data since 2002.

(iv) All these data set along-with the findings of community based study on STD prevalence, were used to validate the assumptions used in estimation since 1998.

These estimates are based on the prevalence rates in the age group 15-49 years as derived from annual round of HIV Sentinel Surveillance, 2003. Results of all 455 sentinel surveillance sites have been taken into consideration while making estimates.

The modifications made in various assumptions in estimates of HIV infections in 2003 are as follows:

S. No.	Assumptions	Assumption 1998	Assumption 2003	Tools used in validations of assumptions
1	STD prevalence in urban and rural areas by epidemic zones	Urban : High :10% Moderate: 7% Low : 5% Rural: High : 5% Moderate: 5% Low : 5%	Urban : High : 6% Moderate-:6% Low : 6% Rural: High : 6.3% Moderate: 5% Low : 5%	Results of community based study on STD prevalence in rural and urban areas in the country and its concurrence with the results of BSS 2001.
2	Urban-rural differential in HIV prevalence among STD patients	3:1	1:1	HIV Sentinel Surveillance data round 2003 from STD sites.
3	Urban-rural differential in HIV prevalence among ANC patients	8:1	2.4:1	HIV Sentinel Surveillance data from ANC sites with separate subsets in urban and rural populations
4	Replacement for HIV prevalence at the State level if reported Zero	STD – 1.60 ANC – 0.50	STD – 1.61 ANC – 0.32	Replacement of zero by the average value at the site observed during last three years. If the average value is still zero, than average prevalence rate of STD/ANC sites in low prevalence states as observed during round 2003
5	Female-Male differential in STD patients (remains unchanged)	High : 1.2:1 Moderate : 2:1 Low : 3:1	High : 1.2:1 Moderate : 2:1 Low : 3:1	HIV Sentinel Surveillance data for year 2002 and 2003 have shown same male-female ratio as assumed.
6	HIV prevalence rate (remains unchanged)	Median value of observations obtained from various sites as the State level average	Median value of observations obtained from various sites as the State level average	Expert Group endorsed the use of median as the average at the State level

Based on the recommendations of the experts and using the assumptions as above, the total estimated number of HIV infections in the country as of October, 2003 was 5.1 million HIV infections includes adult population in the age group of 15-49 years, children living with HIV and high risk groups like Injecting Drug Users etc.. The distribution of estimated HIV infections is as below:

1. HIV distribution among STD patients

Among STD affected population, the sex-wise HIV distribution is as follows:

(Figures in Lakhs)			
STD			
Males	9.30		
Females	6.20		
Total	15.50		

2. HIV among sex workers

On reviewing the available literature, it was found that enough hard data is not available, which can provide credible information on size estimation of female sex workers in the country, except the number arrived from the mapping of high-risk groups conducted by SACS. The mapping exercise indicates that there are 1.68 lakh sex workers in 22 States where mapping is completed. Owing to incomplete information and probable underestimate of size of sex workers, this information may not be useful for this exercise.

One African study had indicated that 0.5% to 2% of women in adult women population are "Women in prostitution". However, it would not be appropriate to use African data to estimate sex workers in India, because for socio-cultural differential.

The only Indian reference, which is available, is a draft study by World Bank, prepared for cost implications and effectiveness of ART therapy. This report suggests that 1.1% of women in adult population could be sex workers in India, thus providing a size estimation of 2.9 million women as total estimated sex workers in the country (reference not quoted). Assuming that not more than 50% FSWs access STD services in public sector, they (1.45 million) are not captured in the female STD group under surveillance. Thus, they are accounted for calculating number of HIV infections, by applying the HIV prevalence rate reported among sex workers. In states where data on prevalence among FSW is not available, the HIV prevalenceamong STD has been applied. Thus the estimated number of HIV infections in the country have been worked out to be 70,794 infections.

3. HIV among children:

Based on the census (2001) information of male-female distribution and tabulation of data of HIV estimates in 2003, there will be 17.8 lakhs women with HIV infections. Out of these, only 5696 pregnant women who are HIV positive have availed PPTCT services during the year 2003 in identified institutions. Considering the GFR (General Fertility Rate) among women as 103.2 per thousand, there will be 1.84 lakh pregnant women in HIV infected pool. If the transmission rate of HIV infection from infected mothers to children is taken as 30% in worst case scenario, there will be55,145 HIV infected children in the country.

4. HIV among injecting drug users:

Based on the observed HIV prevalence among Injecting Drug Users in the State and their size estimation of in different States, the estimated number of HIV infections among these sub-populations has been worked out to be 10, 344 infections.

5. Total HIV infections in 2003 in high-risk & general population:

The distribution of HIV infections in various sub-populations is as follows:

Group	(Number in Lakhs)		
STD patients	14.93		
General Population	34.77		
FSWs	0.103		
IDUs	0.71		
Children	0.55		
TOTAL	51.06		

The total number of infections among males and females in urban and rural areas are as follows:

	Male	Female	Total
Rural	19.22	11.38	30.60 (59.9%)
Urban	12.97	7.49	20.46 (40.1%)
Total	32.20	18.87	51.06

The distribution of these infections among various groups of States is as follows:

The age distribution of HIV estimates is as follows:

Among ch Among ac (15-49 yea	nildren lult popula ars)	tion	(Figur	(Figures in Lakhs) 00.55 50.51				
Total				50.51				
Year (estimates in millions) 1998 - 2003								
1998 3.5 m	1999 3.7 m	2000 3.86 m	2001 3.97 m	2002 4.58 m	2003 5.1 m			



In comparison to 4.58 million HIV infections, in year 2002, in year 2003 there has been an increase of about 5.12 lakh infections as compared to increase of 6.1 lakhs infections last year (4.58 million – 3.97 million). This shows that while the epidemic is still spreading in the country, there is no significant upsurge in the number of new infections. This is evident from the fact that during 2003 round of HIV sentinel surveillance, none of the States has moved from the category of low prevalence State to either medium or high prevalence categories.

Thus, India continues to be a low prevalence country with overall prevalence of less than 1 % among adult population. During year 2004, we have already planned the annual round in 670 sites, to be started from 1st July 2004. The main features of this round are:

Annual data collection for rural sub-set in 124 ANC sites located in high-prevalence States, to closely track the spread of HIV in rural areas.

84 sentinel sites will be located in the on-going targeted intervention projects in order to have high-risk data representative of all States.

Relocation of 18 STD sites in Private sector hospitals in order to ensure participation of private sector STD clinics.

Establishment of sentinel sites in TB hospitals in High-prevalence States to monitor HIV trends in TB patients across these States.