

CHAPTER II

HIV-A SNAPSHOT

2.1 INTRODUCTION

HIV/AIDS poses a significant challenge to the development of low income countries. Particularly, the devastating impact of HIV pandemic is clearly visible in Sub-Saharan African Region, which accounts for nearly sixty-seven percent of all the population of people living with HIV. There were 33.3 million people living with HIV worldwide in 2009, out of which, 15.9 million were female and 2.0 million were children under the age of 15 (Global Report, UNAIDS; 2010). Out of these 33.3 million people 22.50 million were living in Sub-Saharan African Region, the region worst hit by HIV pandemic.

Table 2.1: Global Estimates of People Living With HIV For 2009

Characteristics	Adults	Women	Children Under 15 Years	Total
Total number living with HIV in 2009	31.30	15.90	2.00	33.30
Newly infected	2.20	--	0.40	2.60
HIV related illness deaths	--	--	--	1.80

(In millions)

Source: Global Report, UNAIDS 2010, www.unaids.org

HIV has become the fourth most common found cause of death across the world and the leading cause of death in Sub-Saharan African Region. In 2009, 1.8 million people died due to HIV related illness. It was estimated that every minute one in every five youth (15-24 years) is infected with HIV (UNICEF, 2000).

At the world scenario, cases of HIV infection are quite visible in each and every region. Most of the people living with HIV are concentrated in the Sub-Saharan African Region (SSAR), a region which is described as a poor region of under privileged and malnourished people. South East Asian Region (SEAR) comes next to SSAR. A comparative picture of progression of HIV infection in different regions of world is given in the table 2.2.

Table 2.2: Comparative Picture of Pandemic in Different Regions of World (2001-09)
(In millions)

Region	2001	2002	2003	2004	2005	2006	2007	2008	2009
Sub Saharan African Region	20.90	29.40	24.90	23.60	25.80	24.70	22.50	22.40	22.50
Middle East and North Africa	0.30	0.55	0.50	0.40	0.51	0.46	0.38	0.31	0.46
South and South-East Asia	3.50	6.00	6.50	7.20	7.40	7.80	4.00	3.80	4.10
East Asia	0.42	1.20	0.69	0.62	0.87	0.75	0.80	0.85	0.77
Oceania Region	0.03	0.02	0.06	0.07	0.07	0.08	0.08	0.06	0.06
Latin America	1.30	1.50	1.60	1.50	1.80	1.70	1.60	2.00	1.40
Caribbean	0.19	0.44	0.30	0.24	0.30	0.25	0.23	0.24	0.24
East Europe and Central Asia	0.63	1.20	1.20	1.40	1.60	1.70	1.60	1.50	1.40
Western and Central Europe	0.62	0.57	0.70	0.70	0.72	0.74	0.76	0.85	0.82
North America	1.10	0.98	1.10	1.20	1.20	1.40	1.30	1.40	1.50
Total	29.00	42.00	37.50	36.90	40.30	39.50	33.20	33.40	33.30

Source: AIDS epidemic updates UNAIDS and WHO, www.unaids.org, global report UNAIDS 2010

From Table 2.2, it is clearly observed that, HIV pandemic, after killing people at mass level, is stabilizing in SSAR. In the developed countries of North American and Western and Central Europe, it is already at a plateau level. In the recent past, the gravity of concentration of new HIV infections is shifting to SEAR, where in 2006; 7.8 million people were living with HIV. However, after adopting some new methodologies for estimation of incidence of HIV by countries like India in the recent past, has drastically led to a decline in the number of people living with HIV in the region to 4 million.

Since 2001, nearly, 19 million people had lost their lives to HIV related illness across the world. Likewise, the number SSAR tops among the list of regions, where 14 million people lost their lives due to HIV related illness since 2001, taking it as a recent past benchmark. Table 2.3 shows the number of deaths due to HIV related illness in different regions of world.

As we know HIV infection has a long incubation period and hence a person who is carrying HIV can live for more than ten years. Sometimes, the symptoms are not visible for a long time. Thus those who are infected with HIV today, would cumulate to the lobby of all those who may die in near future at an uncertain period.

Table 2.3: HIV Related Illness Deaths 2001-2009

(In millions)

Region	2001	2002	2003	2004	2005	2006	2007	2008	2009
Sub Saharan African Region	1.40	2.40	2.20	1.90	2.40	2.10	1.60	1.400	1.300
Middle East and North Africa	0.02	...	0.04	0.03	0.06	0.04	0.03	0.020	0.024
South and South-East Asia	0.17	...	0.33	0.51	0.48	0.59	0.27	0.270	0.260
East Asia	0.01	...	0.03	0.03	0.04	0.04	0.03	0.059	0.036
Oceania Region	<500	...	<100	0.00	0.00	0.00	0.00	0.002	.0014
Latin America	0.05	...	0.05	0.05	0.07	0.07	0.06	0.077	0.058
Caribbean	0.01	...	0.03	0.02	0.02	0.02	0.01	0.012	0.012
East Europe and Central Asia	0.01	...	0.02	0.05	0.06	0.08	0.06	0.087	0.076
Western and Central Europe	0.01	...	0.00	0.01	0.01	0.01	0.01	0.013	0.0085
North America	0.02	...	0.01	0.02	0.02	0.02	0.02	0.025	0.026
Total	1.70	3.10	3.00	2.70	3.10	2.90	2.10	2.000	1.400

... Data were not available

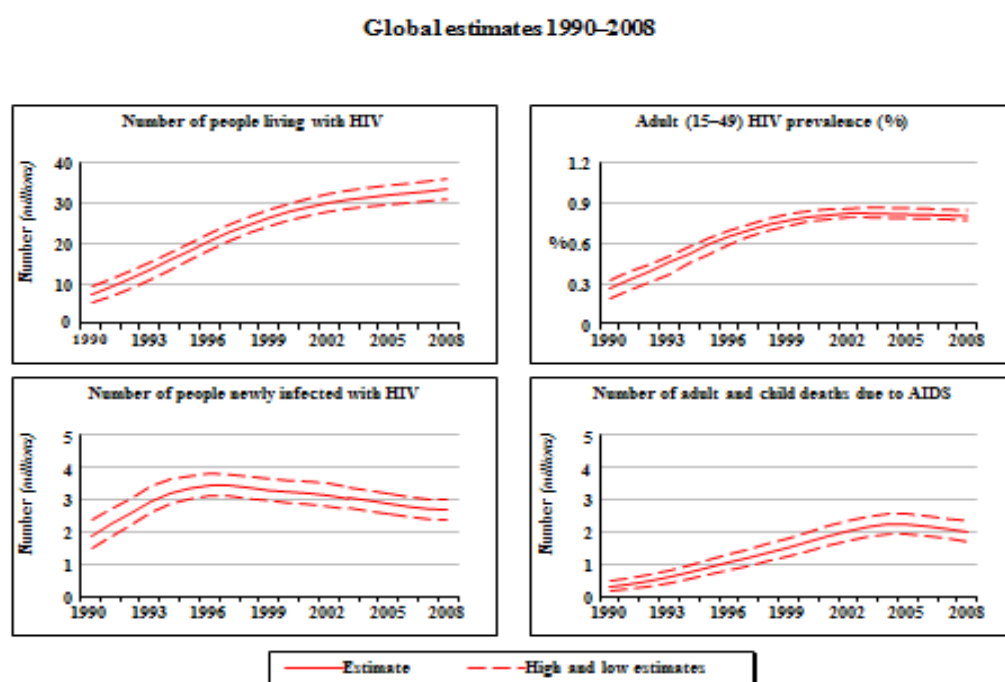
(Source: AIDS epidemic Updates UNAIDS, WHO), www.unaids.org, Global Report UNAIDS 2010

In 2002 and 2005 highest number of people (3.10 million) lost their lives to HIV across the world. In 2009 nearly, 1.4 million people died due to HIV related illness. The decline in number of deaths due to HIV related illness in the recent past is because of world response to HIV and managed accessibility of Antiretroviral Drugs (ART).

2.2 TRENDS IN HIV PANDEMIC

In the recent years, it has been observed that overall growth of global AIDS epidemic has stabilized (UNAIDS). The annual number of new HIV infections has been steadily declining since the late 1990s and there are fewer aids-related deaths due to the significant scale up of antiretroviral therapy over the past few years. Although the number of new infections has been falling, levels of new infections overall, are still high. Figure 2.1 shows the trend in HIV pandemic since 1990. In 2009, there were an estimated 2.6 million [2.3 million–2.8 million] people who became newly infected with HIV. This is nearly one fifth (19%) fewer than the 3.1 million [2.9 million–3.4 million] people, newly infected in 1999. Adult (15-49) HIV prevalence; reaching to plateau in 2001-2002, is steadily declining in the recent years.

Figure 2.1: Trends in Global Estimates HIV pandemic 1990-2008



Source: UNAIDS/WHO

Source: global report 2010; UNAIDS, www.unaids.org

Similarly, a steady decline in the number of new infections has been observed in recent years, because of successful intervention and programme campaigns. Decline in the number of deaths due to HIV related illness has also been observed because of effective intervention strategies and availability of affordable ART treatment to masses.

2.3 HIV IN ASIA

In SEAR, HIV poses a serious threat. Although overall adult HIV prevalence in South and South-East Asia is still relatively low at 0.3%, the HIV epidemic affects a large number of people - an estimated 4.1 million were living with HIV in this sub region in 2009 (UNAIDS).

The epidemics in Cambodia, Myanmar and Thailand show decline in HIV prevalence, with national HIV prevalence in Cambodia falling from 2% in 1998 to an estimated 0.5% in 2009. However, epidemics in Indonesia (especially in its Papua province), Pakistan and Viet Nam are growing rapidly. Currently in Asia, only China, India and Thailand have more people living with HIV than Viet Nam. In Viet Nam, the estimated number of people living with HIV, more than doubled between 2000 and

2005. New HIV infections are also increasing steadily, although at a much slower pace, in Bangladesh.

Table2.4: Total Number of People (Adult and Children) Living With HIV in Different Countries of Asia, 2009

Country	Total Number of PLHIV	Numbers of Deaths Due to HIV Related Illness	Prevalence (%)
East Asia	770000	36000	0.1
China	740000	26000	0.1
Democratic People's Republic of Korea	...	...	...
Japan	8100	<100	<0.1
Mongolia	<500	<100	<0.1
Republic of Korea	9500	<500	<0.1
South And South-East Asia	4100000	260000	0.3
Bangladesh	6300	<200	<0.1
Bhutan	<1000	<100	0.2
Cambodia	63000	3100	0.5
India	2400000	170000	0.3
Indonesia	310000	8300	0.2
Lao People's Democratic Republic	8500	<200	0.2
Malaysia	100 000	5800	0.5
Maldives	<100	<100	<0.1
Myanmar	240000	18 000	0.6
Nepal	64000	4700	0.4
Pakistan	98000	5800	0.1
Philippines	8700	<200	<0.1
Singapore	3400	<100	0.1
Sri Lanka	2800	<200	<0.1
Thailand	530000	28000	1.3
Viet Nam	280000	14000	0.4
Total	4870000	296000	0.2

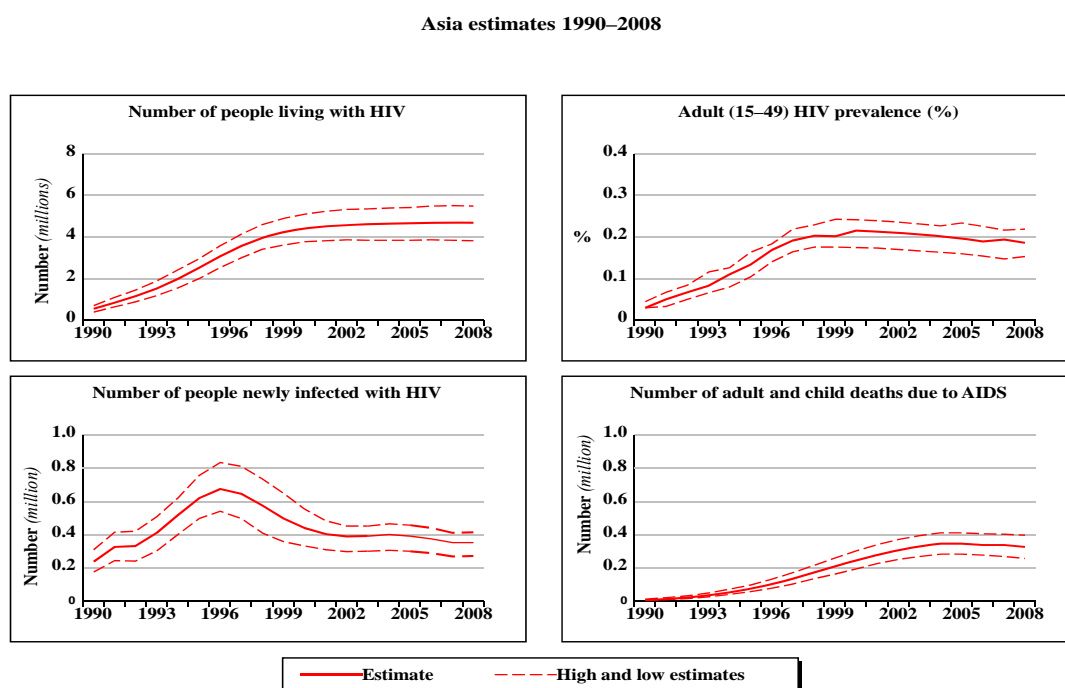
Source: global report 2010; UNAIDS: www.inaids.org

Although the magnitude and timing of the spread of HIV have varied, the epidemic seems to follow a similar pattern in most of the Asian countries. HIV first appeared to some sub group of population in these countries, described as marginalized groups of society, spread in these groups and to population at large through complex behavioural interaction. In the SEAR region, India at large accommodates 60 percent of people living with HIV in the region (16th International AIDS Conference, World Bank). This is a major concern for the policy makers to prevent the spread of HIV in the region.

2.4 TRENDS IN ASIA

In Asia, an estimated 4.9 million [4.5 million–5.5 million] people were living with HIV in 2009, about the same as five years earlier. Most national HIV epidemics appear to have stabilized. No country in the region has a generalized epidemic. Thailand is the only country in this region, in which the prevalence is higher and is close to 1%, and its epidemic appears to be stable overall. HIV prevalence is increasing in such low-prevalence countries as Bangladesh, Pakistan (where drug injecting is the main mode of HIV transmission), and the Philippines. New infection in the Asian region has a mixed response. There were 360 000 [300 000–430 000] people newly infected with HIV in 2009, 20% lower than the 450 000 [410 000–500 000] in 2001. Incidence fell by more than 25% in India, Nepal, and Thailand between 2001 and 2009. The epidemic remained stable in Malaysia and Sri Lanka during this time period. Incidence increased by 25% in Bangladesh and Philippines between 2001 and 2009, even as the countries continue to have relatively low epidemic levels. Figure 2.2 depicts the trends in HIV epidemic in the Asian region since 1990-2008.

Figure 2.2: Trends in Asian Estimates HIV epidemic 1990-2008



Source: UNAIDS/WHO

Source: global report 2010; UNAIDS, www.unaids.org

The overall trend in the Asian region hides important variation in the epidemics, both between and within countries. In most of them, the epidemics appear stable. In many

countries in the region, national epidemics are concentrated in a relatively small number of provinces. In China, five provinces account for just over half (53%) of the people living with HIV and HIV infection levels in Indonesia's Papua province are 15 times higher than the national average. Asia's epidemics remain concentrated largely among people who inject drugs, sex workers and their clients, and men who have sex with men. Incidence patterns can vary considerably in large countries such as India. About 90% of people newly infected with HIV in India are believed to have acquired it during unprotected sex, but the common use of contaminated injecting equipment by two or more people on the same occasion is the main mode of HIV transmission in the country's north-eastern states.

In India, HIV estimates were lowered in 2007 due to improved surveillance and methods of analysis, but the absolute numbers are still high and the epidemic varies greatly across different regions. In the four southern states (Andhra Pradesh, Karnataka, Maharashtra and Tamil Nadu) where the large majority of people living with HIV in India are believed to reside, HIV prevalence varies, and the epidemic tends to be concentrated in certain districts and associated with unprotected sex between sex workers and their clients.

2.5 EPIDEMIC IN INDIA

In India, the first case of HIV infection was reported in 1986, in Chennai in commercial sex workers (CSW). Simultaneously, AIDS cases were reported in Mumbai in the same year. Earlier, HIV infection was confined to Southern and north-eastern states of country, but sooner or later, HIV cases were visible in each and every state of the sub-continent. In the last two decades, HIV has emerged as a serious public health problem in India, because of its ever increasing population and less access to public health facilities and poor infrastructure. Nearly half of India's total population is in the sexually active age group. The spread of HIV in India has been diverse, as most of the states have experienced low prevalence rate and the epidemic is more concentrated in the southern half and far north-east of the country. It was estimated that the number of people living with HIV (PLHIV) in India increased from 0.2 million in 1990 to 5.206 million in 2005 (UNAIDS). However, there was a discontentment regarding the HIV estimates in India. National AIDS Control Organization (NACO) claimed that the actual figure was lower.

NACO releases HIV figures each year based on data gathered from HIV Sentinel Surveillance sites. In 2007 surveillance was conducted at 1134 sites and 358,797 samples were tested for HIV. The sites carry out tests among the high-risk groups and among antenatal clinic attendees. Data gathered from the antenatal clinics are then used as a proxy for the general population. The average HIV prevalence among women attending antenatal clinics in India is 0.48%. Much higher rates are found among people attending STD clinics (3.6%), female sex workers (5.1%), injecting drug users (7.2%) and men who have sex with men (7.4%). As the Table 2.5 shows, the rates among different groups vary widely between states.

Table 2.5: HIV Prevalence in India by States (2007)

(In Percent)

State/Union Territory	Antenatal clinic HIV prevalence 2007 (%)	STD clinic HIV prevalence 2007 (%)	IDU HIV prevalence 2007 (%)	MSM HIV prevalence 2007 (%)	Female sex worker HIV prevalence 2007 (%)
A & N Islands	0.25	1.33	...	...	...
Andhra Pradesh	1.00	17.20	3.71	17.04	9.74
Arunachal Pradesh	0.00	0.00	0.00	...	...
Assam	0.00	0.50	2.41	2.78	0.44
Bihar	0.25	0.40	0.60	0.00	3.40
Chandigarh	0.25	0.42	8.64	3.60	0.40
Chhattisgarh	0.25	3.33	...	...	1.43
D & N Haveli	0.50	...	...	...	...
Daman & Diu	0.13	...	...	...	...
Delhi	0.25	5.20	10.10	11.73	3.15
Goa	0.18	5.60	...	7.93	...
Gujarat	0.25	2.40	...	8.40	6.53
Haryana	0.13	0.00	0.80	5.39	0.91
Himachal Pradesh	0.00	0.00	...	0.00	0.87
Jammu & Kashmir	0.00	0.20	...	...	...
Jharkhand	0.00	0.40	...	...	1.09
Karnataka	0.50	8.40	2.00	17.60	5.30
Kerala	0.38	1.60	7.85	0.96	0.87
Lakshadweep	0.00	0.00	...	...	...
Madhya Pradesh	0.00	1.72	...	...	0.67
Maharashtra	0.50	11.62	24.40	11.80	17.91
Manipur	0.75	4.08	17.90	16.40	13.07
Meghalaya	0.00	2.21	4.17
Mizoram	0.75	7.13	7.53	...	7.20

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Table 2.5: HIV Prevalence in India by States (2007)

(In Percent)

State/Union Territory	Antenatal clinic HIV prevalence 2007 (%)	STD clinic HIV prevalence 2007 (%)	IDU HIV prevalence 2007 (%)	MSM HIV prevalence 2007 (%)	Female sex worker HIV prevalence 2007 (%)
Nagaland	0.60	3.42	1.91	...	8.91
Orissa	0.00	1.60	7.33	7.37	0.80
Pondicherry	0.00	3.22	...	2.00	1.30
Punjab	0.00	1.60	13.79	1.22	0.65
Rajasthan	0.13	2.00	...	...	4.16
Sikkim	0.09	0.00	0.47	...	0.00
Tamil Nadu	0.25	8.00	16.80	6.60	4.68
Tripura	0.25	0.40	0.00	...	...
Uttar Pradesh	0.00	0.48	1.29	0.40	0.78
Uttaranchal	0.00	0.00	...	...	...
West Bengal	0.00	0.80	7.76	5.61	5.92
All India	0.48	3.60	7.2	7.4	5.1

Source: NACO (2007) 'HIV sentinel surveillance and HIV estimation in India 2007: A technical brief'.

Some areas report an HIV prevalence rate of zero in antenatal clinics. This does not necessarily mean HIV is absent from the area, as some states report the presence of the virus at STD clinics and amongst injecting drug users. In some states and union territories, the average antenatal HIV prevalence is based on reports from only a small number of clinics. Andhra Pradesh reported 1 percent HIV prevalence among antenatal clinic attendees, taken as proxy for general population and 17.2 percent HIV prevalence among STD clinic attendees higher than any other state and UT in India. Maharashtra reported 24.4 percent IDU HIV prevalence surpassing the percentage in North Eastern India. HIV prevalence among MSM population was highest in Karnataka followed by Andhra Pradesh, Manipur and Maharashtra. Maharashtra reported higher HIV prevalence among female sex workers than any other state in India.

In 2007, following the first survey of HIV among general population, UNAIDS and NACO agreed on the new estimate-between 2 million and 3.6 million PLHIV. The figure was confirmed to be 2.4 million (NHFS-III) in 2008. That puts India behind South Africa and Nigeria in numbers. Overall, 0.3 percent of India's adult population is living with HIV. Though, the prevalence rate seems to be much lower, due to the vast population of India, absolute number tolls to million. Thus, mere 0.1 percent increase in the rate of prevalence, may add millions to total number of PLHIV in India.

Table 2.6: HIV Prevalence in India by States

Percentage of People Living with HIV (Adult age 15-49 and Men 15-54) who were tested, by States, in India 2005-06

(In percent)

States	Women % HIV Positive	Men % HIV Positive	Men And Women % HIV Positive	Men Age 15-54 % HIV Positive
Andhra Pradesh	0.75	1.22	0.97	1.20
Karnataka	0.54	0.85	0.69	0.82
Maharashtra	0.48	0.77	0.62	0.75
Manipur	0.76	1.59	1.13	1.51
Tamilnadu	0.39	0.27	0.34	0.27
Total for five high prevalence states	0.55	0.82	0.67	0.80
Uttar Pradesh	0.05	0.10	0.07	0.10
Total for five high prevalence states and Uttar Pradesh	0.38	0.57	0.47	0.57
All other states*				
Excluding Uttar Pradesh	0.09	0.18	0.13	0.18
Including Uttar Pradesh	0.08	0.16	0.12	0.17

* Except Nagaland

Source: National Family Health Survey (NFHS-3) 2005-06

National Family Health Survey-III (NFHS-III) is an enthusiastic initiative to provide population based data on HIV prevalence in India. Nationwide, the HIV prevalence rate for the adult population (15-49 years) is 0.28 percent. HIV prevalence rate is 0.22 percent for women and 0.36 percent for men age 15-49 years. The prevalence rates in the six states are: Manipur: 1.13 percent; Andhra Pradesh: 0.97 percent; Karnataka: 0.69 percent; Maharashtra: 0.62 percent; Tamil Nadu: 0.34 percent; and Uttar Pradesh: 0.07 percent (NFHS-III). Age wise distribution of HIV prevalence in the India is given in the table 2.7.

Table 2.7: HIV Prevalence in India by Age and Sex

Percentage of People Living with HIV by Age and Sex in India NFHS-III (2005-06)

(In percent)

Age Group	Male	Female	Total
15-19	0.01	0.07	0.04
20-24	0.19	0.17	0.18
25-29	0.43	0.28	0.35
30-34	0.64	0.45	0.54
35-39	0.53	0.23	0.37
40-44	0.41	0.19	0.30
45-49	0.48	0.17	0.33
Total age 15-49	0.36	0.22	0.28

Source: National Family Health Survey-III (2005-06), www.nfhsindia.com

From Table 2.7 it is clearly visible that most of the HIV infection in India is concentrated in the age span of 25-39 years, which is also the most productive age span in the life of an individual. For women in the age group of 30-34 years, HIV prevalence is 0.45 percent. This age span is important from the point of view of reproduction and women health as well. Surprisingly, a high HIV prevalence rate is seen in the age group of 45-49 for male.

National numbers attributed to AIDS cases are still not very reliable. Statistics presented in the table 2.8 referred to the reported AIDS cases. These are a poor guide to the severity of the epidemic as in many situations; a patient will die without HIV having been diagnosed, and with the death attributed to an opportunistic infection, such as tuberculosis.

Table 2.8: HIV Related Illness Cases in India

Total Number of HIV Related Illness Cases in India by Age and Sex Distribution (August 2006)
(Absolute Numbers)

Age Groups	Male	Female	Total
0-14	3,313	2,283	5,596
15-29	23,905	15,876	39,781
30-49	54,204	16,701	70,905
≥50	6,823	1,890	8,713
Total	88,245	36,750	124,995

Source: Updates on AIDS National AIDS control Organization, August 2006

Table 2.8 depicts that 88,245 male and 36,730 were in India, with visible AIDS symptoms as on August 2006. Of this number, 26 percent were women, and 36 percent were under the age of 30. These numbers include the children as well. 3,313 male and 2,283 female children were reported with AIDS symptoms.

With the new improved methodology to estimate HIV prevalence nationwide, though the rate of prevalence (0.28 percent) is much lower as against 0.91 percent (UNAIDS and WHO) earlier, the absolute number of people living with HIV in India is a major concern because of her large size of total population.

Peter Piot, Executive Director of UNAIDS, stresses:

“The statement that India has the AIDS problem under control is not true. There is a decline in prevalence in some of the Southern states... In the rest of the county, there are no arguments to demonstrate that AIDS is under control”

As per the latest estimates released by NACO, the total number of people living with HIV in India is estimated at 24 lakh (19.3-30.4) in 2009. Children (<15 yrs) account

for 3.5% of all infections, while 83% are in the age group 15-49 years. Of all HIV infections, 39% (9.3 lakh) are among women. The four high prevalence states of South India (Andhra Pradesh – 5 lakh, Maharashtra – 4.2 lakh, Karnataka – 2.5 lakh, Tamil Nadu – 1.5 lakh) account for 55% of all HIV infections in the country. Table 2.9 shows the state wise estimated adult HIV prevalence and number of HIV infection with uncertainty bound in 2009.

Table 2.9: State wise estimates for adult (15-49) HIV prevalence and number of HIV infections with uncertainty bounds, 2009

State/UT	Estimated Adult HIV Prevalence, 2009 (%)			Estimated Number of HIV Infections, 2009		
	Estimate	Uncertainty bounds		Estimate	Uncertainty Bounds	
		Lower	Upper		Lower	Upper
Andaman & Nicobar Islands	0.26	0.19	0.36	395	292	536
Andhra Pradesh	0.90	0.77	1.07	499620	424214	596011
Arunachal Pradesh	0.16	0.12	0.22	1082	808	1481
Assam	0.08	0.06	0.12	14244	10400	21599
Bihar	0.22	0.18	0.27	120470	100493	147676
Chandigarh	0.39	0.32	0.47	3067	2571	3716
Chhattisgarh	0.28	0.20	0.38	39774	29188	53885
Dadra & Nagar Haveli	0.15	0.11	0.20	285	217	383
Daman & Diu	0.16	0.12	0.21	251	192	336
Delhi	0.30	0.25	0.36	34216	28735	41076
Goa	0.49	0.31	0.73	5440	3584	8027
Gujarat	0.37	0.30	0.55	136875	109952	200826
Haryana	0.10	0.09	0.13	15852	13189	19122
Himachal Pradesh	0.19	0.10	0.24	8878	7105	11069
Jammu & Kashmir	0.08	0.06	0.11	5403	3971	7444
Jharkhand	0.13	0.11	0.17	23574	19133	29301
Karnataka	0.63	0.46	0.88	245522	179205	335119
Kerala	0.19	0.15	0.24	40060	32654	49352
Madhya Pradesh	0.19	0.16	0.24	84803	69916	103540
Maharashtra	0.55	0.44	0.71	419789	331891	548366
Manipur	1.40	0.16	1.64	26773	22113	32374
Meghalaya	0.08	0.06	0.12	1332	1002	1921
Mizoram	0.81	0.60	1.12	6025	4448	8361
Nagaland	0.78	0.66	0.93	13120	11005	15578
Orissa	0.29	0.24	0.37	71813	58879	90117
Puducherry	0.28	0.22	0.36	2254	1768	2860
Punjab	0.32	0.26	0.39	56928	47077	67967
Rajasthan	0.19	0.16	0.23	76316	63998	92466
Sikkim	0.06	0.05	0.08	231	173	296

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Table 2.9: State wise estimates for adult (15-49) HIV prevalence and number of HIV infections with uncertainty bounds, 2009

State/UT	Estimated Adult HIV Prevalence, 2009 (%)			Estimated Number of HIV Infections, 2009		
	Estimate	Uncertainty bounds		Estimate	Uncertainty Bounds	
		Lower	Upper		Lower	Upper
Tamil Nadu	0.33	0.26	0.41	154742	121000	194611
Tripura	0.15	0.10	0.21	3425	2381	4845
Uttar Pradesh	0.09	0.08	0.11	109352	90199	137193
Uttarakhand	0.10	0.07	0.15	5539	3893	8597
West Bengal	0.29	0.24	0.35	167994	138348	206930
India	0.31	0.25	0.39	2395444	1933994	3042981

Source: Government of India Ministry of Health & Family Welfare Department of AIDS Control National AIDS Control Organisation, Press Release 01 December 2010, www.nacoindia.org

The estimated adult HIV prevalence in India was 0.32% (0.26% – 0.41%) in 2008 and 0.31% (0.25% – 0.39%) in 2009. Among the states, Manipur has shown the highest estimated adult HIV prevalence of 1.40%, followed by Andhra Pradesh (0.90%), Mizoram (0.81%), Nagaland (0.78%), Karnataka (0.63%) and Maharashtra (0.55%). Besides these states, Goa, Chandigarh, Gujarat, Punjab and Tamil Nadu have shown estimated adult HIV prevalence greater than national prevalence (0.31%). The adult HIV prevalence at national level has continued its steady decline from the estimated level of 0.41% in 2000 through 0.36% in 2006 to 0.31% in 2009. HIV has declined notably in Tamil Nadu, to reach 0.33% in 2009. The states of Punjab, Orissa, Rajasthan & Madhya Pradesh have 50,000 – 1 lakh HIV infections each and together account for another 12% of HIV infections. These states, in spite of low HIV prevalence, have large number of PLHA due to the large population size.

2.6 MAHARASHTRA-A BIRD'S EYE VIEW

Maharashtra is one of the most economically and industrialized developed states of India. In terms of population, it is the second largest state in India only after Uttar Pradesh. As per the 2001 Census, the total population of the state is 96.9 million, which is 9.4 percent of the total population of India. It has a land area of 3, 07,713 sq km, which is about one-tenth of the total land area of the country.

It is one of the six high HIV prevalence states in India, where HIV prevalence rate exceeds 5 percent in high- risk groups (HRG). HIV prevalence at Antenatal clinics in Maharashtra was 0.76 percent in 2006.

Table 2.10 shows the picture of HIV prevalence rate in general population and HRGs from 2003 to 2007.

Table 2.10: Maharashtra-A Bird Eye View of HIV Infection HIV Prevalence in Different Population Group 2003-2007

(In Percent)					
Groups	2003	2004	2005	2006	2007
ANC	0.75	0.75	1.0	0.75	0.50
STD	12.00	10.80	12.8	10.00	11.62
FSW	54.29	41.69	23.6	19.57	17.91
MSM	18.80	11.20	10.4	15.60	11.80
IDU	22.89	29.20	12.8	20.40	24.40

Source: HIV Fact sheets based on HIV sentinel surveillance data in India 2003-07
National AIDS control Organization (NACO), 2007

Maharashtra state is the home for one in five of all PLHIV in India. A high rate of HIV prevalence is found to be in the female sex workers (FSW), male having sex with male (MSM) and inject drug users (IDU). NFHS-III (2005-2006) survey, found an infection rate of 0.62 percent in the general population of Maharashtra. Of the 124,995, (NACO) reported cases of HIV related illness in India as on August 2006, 14,325 cases, accounting for 11.4 percent are from Maharashtra. Mumbai which is the capital of Maharashtra state and also considered to be the financial capital of India, alone reported 10,362 cases till August 2006. HIV prevalence rate in Mumbai is greater than the state's rate leading the city at a greater risk of transmission of HIV infection at a rapid speed in the general population. Mumbai is also the most populous city in India and attracts the people from all over the India; hence the migration rate is also very high in the city. Similarly, the Mumbai suburban also experienced a high prevalence rate (more than one percent in antenatal clinics attendees (NACO)).

Table 2.11 given below highlights the prevalence rate of HIV in different groups of society, in different years for the six divisions of Maharashtra state.

Table 2.11: HIV Prevalence (%) in Different Districts of Maharashtra State 2003-06

Divisions / Districts	Site Category*	2003	2004	2005	2006
Brihan Mumbai					
Mumbai	ANC	2.26	1.25	1.25	2.25
	EUN	...	...	43.90	29.60
	FSW	54.29	44.76	50.20	36.80
	ANC	...	...	...	0.00
	MRG	...	...	...	2.40
	FSW	...	...	...	12.80
	STD	7.79	9.27	9.68	6.58
	STD	31.33	15.65	16.00	11.17
	ANC	1.00	1.75	2.00	1.75
	Mumbai (Suburban)	ANC	0.75	0.75	0.75	1.25
	ANC	1.50	0.50	0.75	0.50
	ANC	1.25	1.25	1.75	0.50
	ANC	1.25	1.00	0.25	1.00
	IDU	22.89	29.20	12.80	20.40
	MSM	18.80	9.60	6.00	7.60
	FSW	...	...	11.20	4.00
Mumbai Division					
Thane	STD	14.40	4.00	8.00	6.00
	ANC	4.25	1.50	2.00	0.75
	ANC (R)	1.50	0.75	0.75	1.00
	FSW	...	38.00	25.20	28.40
Raigarh	ANC	0.50	1.00	0.75	0.50
	ANC (R)	0.25	0.25	1.00	1.25
	FSW	...	...	16.40	...
Ratnagiri	ANC	1.50	0.75	1.00	0.50
	ANC (R)	0.50	0.75	1.00	0.00
Sindhudurg	ANC	0.25	0.50	0.00	0.25
	ANC (R)	0.00	0.00	0.50	0.00
Nashik Division					
Nasik	ANC	1.25	2.25	2.25	0.75
	TUB	...	5.80	4.25	...
	ANC (R)	0.50	0.50	1.25	0.50
	FSW	...	...	18.40	9.60
Dhule	ANC	1.50	0.50	0.75	1.00
	ANC (R)	0.51	1.00	0.50	1.25
Nan durbar	ANC	2.25	0.25	1.00	0.75
	ANC (R)	0.25	0.00	0.25	0.00
Jalgaon	STD	7.60	10.40	7.20	10.80
	ANC	1.75	1.75	1.75	1.75
	ANC (R)	1.25	1.25	1.75	1.25
	FSW	...	...	21.60	11.20
Ahmadnagar	ANC	2.25	1.50	2.50	1.25
	ANC (R)	1.00	0.25	0.75	0.25
	FSW	...	...	16.40	26.00
Pune Division					
Pune	STD	8.40	16.40	17.20	...
	ANC	2.50	3.25	3.25	0.50
	ANC (R)	0.25	1.50	0.50	0.50
	MSM	...	12.80	14.80	23.60
	FSW	...	42.80	43.15	50.00
	Satara	ANC	3.00	2.00	2.25	2.00
	ANC (R)	2.50	1.25	1.50	1.00
Sangli	STD	15.60	32.80	25.20	28.40
	ANC	4.00	2.50	3.25	3.00
	ANC (R)	4.00	3.75	2.25	1.00
Sholapur	ANC	2.00	2.00	2.75	0.50
	ANC (R)	0.50	0.25	0.75	1.50
Kolhapur	ANC	2.50	2.00	2.75	2.25
	ANC (R)	0.50	1.25	1.00	0.50
	FSW	...	...	29.20	29.60
Aurangabad Division					
Aurangabad	STD	14.00	5.60	6.80	10.00
	ANC	0.25	0.25	0.00	1.25
	ANC (R)	0.00	0.00	...	0.25
Jalna	ANC	0.25	1.00	1.25	0.75
	ANC (R)	...	0.50	0.50	1.50
Parbhani	ANC	1.25	0.50	0.50	0.25
	ANC (R)	1.50	1.00	0.50	1.50
	FSW	...	...	15.60	10.40

Contd...

Table 2.11: HIV Prevalence (%) in Different Districts of Maharashtra State 2003-06

Divisions / Districts	Site Category*	2003	2004	2005	2006
Beed	ANC	2.25	0.25	1.25	0.50
	ANC (R)	0.75	0.75	0.50	1.00
Latur Division					
Nanded	ANC	1.25	1.25	1.00	0.75
	ANC (R)	0.00	0.50	0.25	0.25
Osmanabad	ANC	0.75	1.75	1.50	1.50
	ANC (R)	0.75	1.00	1.25	1.50
Latur	STD	10.00	8.40	10.40	10.00
	ANC	2.01	2.25	1.50	1.50
	ANC (R)	1.00	0.25	0.50	0.25
	FSW	...	...	14.80	8.80
Hingoli	ANC	0.25	1.50	1.00	1.25
	ANC (R)	0.51	1.00	1.75	2.00
Amravati Division					
Buldana	ANC	0.25	0.25	0.50	1.00
	ANC (R)	0.25	0.00	0.25	0.75
Akola	FSW	...	...	...	5.20
	STD	8.80	8.80	10.00	9.20
	ANC	0.75	0.25	0.00	1.00
	ANC (R)	0.36	0.00	0.00	0.25
Washim	ANC	0.00	0.25	0.75	0.25
	ANC (R)	0.00	0.00	0.00	0.00
Amravati	ANC	0.75	0.75	1.00	0.50
	ANC (R)	0.25	0.25	0.25	0.00
Yavatmal	ANC	2.25	1.50	1.25	1.50
	ANC (R)	...	1.25	1.25	1.25
	TUB	...	11.00	...	...
	STD	37.50	23.75	32.51	21.20
Nagpur Division					
Wardha	ANC	0.25	1.25	0.00	0.50
	ANC (R)	0.50	0.50	0.75	0.00
Nagpur	STD	22.00	18.80	20.40	20.40
	ANC	2.75	1.25	1.50	0.50
	ANC (R)	0.75	1.25	0.25	1.25
Bhandara	ANC	1.25	0.50	1.25	0.25
	ANC (R)	0.75	0.75	1.00	0.50
Chandrapur	STD	8.80	11.20	15.20	8.40
	ANC	2.75	3.00	3.50	3.50
	ANC (R)	0.25	0.75	1.75	0.00
Gondiva	FSW	...	...	22.00	20.80
	ANC	0.75	0.25	0.50	0.75
	ANC (R)	0.99	0.25	0.25	0.50
Gadchiroli	ANC	0.50	1.00	0.50	0.50
	ANC (R)	0.00	0.00	0.25	0.00

Source: HIV sentinel surveillance data in India 2003-06, NACO, 2007

*ANC-antenatal clinic, ANC(R) - antenatal clinic rural, EUN-eunuchs, MRG-migrants, FSW-female sex worker, STD-sexually transmitted disease, MSM-male having sex with male

Table 2.11 shows the picture of HIV prevalence in different divisions of Maharashtra State. Brihan Mumbai, which includes the Mumbai metropolitan and its suburban regions, no wonder, can be considered to be the capital of HIV in India. In Mumbai and its suburban areas, HIV prevalence in antenatal clinics attendees is more than one percent (NACO). Similarly, the rate of HIV prevalence is very high in the HRGs as well. In Pune district, HIV prevalence is far more in HRG *i.e.* FSW and MSM. In 2006, HIV prevalence rate in FSW, who were tested for HIV, was 50 percent and in MSM it was 23.6 percent. For pregnant women attending antenatal clinics in Pune, the HIV prevalence rate in 2006 was found to be 0.50 percent. Though the prevalence

in ANC attendees is not much, the rate of prevalence in HRG in Pune is a matter of great concern. Because of migration to Pune, Pimpri Chinchwad industrial area, in recent years provide an easy access for mixing of population. This can lead to increase in the number of PLHIV in general population. From the table 2.11 it was observed that HIV prevalence among ANC attendees in Pune far exceeds the HIV prevalence among ANC attendees in Mumbai or Mumbai (Sub-urban), though Mumbai is considered to be the capital of HIV infection in India. It is observed that all ANC sites are located in public health care settings and mostly women from lower economic strata of society avail health care from there. Women from upper middle class avail health care facilities from semi private or private health care settings. It is quite possible that women from semi private or private health facilities are disproportionately referred to government health care facilities (Mehendale.S; 2010). In Pune, BJ medical college / Pune chest general hospital, Aundh (Urban) is the only ANC site (NACO, 2006). It is quite possible that all the women who are tested for HIV and confirmed HIV positive are clubbed together in one particular site there, leading to high HIV prevalence among ANC attendees in Pune.

Table 2.11 also shows that there is a steady increase in the number of PLHIV in Pune district. Most of the cases of HIV infection in Pune district are concentrated in Pune Municipal Corporation (PMC) region and Pimpri Chinchwad Municipal Corporation (PCMC) region.

As per a study, conducted by National AIDS Research Institute (NARI), Pune estimates for HIV infection for 2004 in Pune given in the following table:

Table 2.12 Estimates of HIV/AIDS among Adults Age (15-44 Years), Pune city 2004

Characteristics	Male	Female	Total
Population*	2,077,939	1,868,957	3,946,896
Number of PLHIV	33,311	24,985	58,296
HIV Prevalence Rate**	1.60 %	1.34 %	1.48 %
Estimated Deaths	1,599	971	2,570
Person needing ART	4,997	2,498	7,495

* Estimated Population as per 2001 census, **at 95 % C.I

Source: National AIDS Research Institute (NARI), Pune Annual Reports

Table 2.12 gives a bird's eye view of HIV epidemic in Pune, where most of the cases are centered in PMC and PCMC region. HIV prevalence rate was predicted to be 1.48 percent for 2004 as per the report, which categorized Pune in the list of high prevalence districts in India. HIV prevalence in males (1.60%) is more than that in

females (1.34%). This is of major concern as HIV can be easily transmitted from male to female and females are at a greater risk of contracting HIV infection, because of their biological and socio-economic attributes.

Pune metropolis is one of the fast growing cities in India, and hence, it is posing the serious threat of rapid increase in cases of HIV infection in the city. Many factors contribute to the same, like: close proximity to Mumbai, several national highways connect Pune to major cities of the nation, increased migration in recent years in Pune and PCMC region, cultural norms, festival like Ganpati Utsav, provide easy access to nearby villagers to have sex with the FSWs and a hence major threat to contract the HIV infection. Pune ranked among top five HIV prevalence cities in Maharashtra state. The official figure reported that Jan-Oct 2007, 18,039 people in the city were tested for HIV at government testing centers. Of these, 12.27 percent tested positive for HIV. These figures exclude the thousands of people already living with HIV in city, along with those who are yet unaware about their HIV status. High HIV prevalence among HRG in Pune (23.6% among MSM and 50% among FSW who were tested for HIV, NACO) also pose a serious threat to development aspect. Hence a need of detailed analysis of socio-economic conditions of PLHIV in the city and difficulties faced by them to access health care, instances of stigma and discrimination faced due to HIV infection and emotional and psychological stress arising to circumvent HIV infection and to draft policies in response to HIV infection and for the betterment of people who are living with HIV infection.

