Chapter-1

INTRODUCTION

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Introduction

HIV and AIDS are now considered not only as a health problem, but also as a developmental and security threat. It not only affects an individual and a family but also the community and the nations as well as national economy at large. The AIDS is the fourth leading infectious cause of adults' death in the world (Sukai, 2010). As an epidemic, it has affected almost every country on the globe. Although the epidemic began in USA in 1981, over 96 per cent of new infections now occur in low and middle income countries, which are unfortunately least equipped to respond effectively to the challenge (UNAIDS, 2008). It is now well recognized that AIDS is affecting developed and developing countries differently. In developed countries, AIDS is now a chronic illness and a manageable health problem largely due to the availability of anti-retroviral medication. However, in developing countries, AIDS is now destroying societies, nations and communities. Even now less than 25 per cent of those at risk of HIV infection have access to basic prevention services (Jha et al., 2002). The anti retroviral therapies (ART) that have increased the longevity of patients in the industrialized countries are unfortunately beyond the reach of those in some of the developing countries. The disease is therefore, widening the gap between the haves and have-nots, between rich and poor nations, thereby presenting a new ethical and human rights dilemma (Narain, 2004). The pathology of HIV infection progresses from the initial infection to AIDS in four phases. These are (1) acute infection, (2) asymptomatic HIV disease, (3) early HIV disease and (4) advanced HIV disease or AIDS. The different stages are dependent on the damage to the immune system. In the acute infection phase, the HIV virus enters the body and appears unopposed by the immune system. In fact, no one has pre-existing immunity to HIV. During the first week of infection, there is rapid viral multiplication, which reaches high levels in the blood (and also in semen and secretions of the cervix and vagina, making the individual highly infectious to any sexual partner). In the second phase, i.e. the asymptomatic stage lasts for about 10 years, although in some cases it can be as short as 1 year or as long as 15 years. In this stage, most of the infected persons develop few symptoms of HIV disease. In more than 95 per cent cases, the virus rapidly multiplies in lymphoid tissue and steadily destroys the immune system cells of

the HIV infected people. Some HIV infected individuals develop early opportunistic infections (OIs) during the asymptomatic stage. The change of asymptomatic HIV disease to early HIV disease becomes apparent with the development of one or more characteristic of opportunistic infections. There is an increase in the rate of HIV multiplication in the lymph nodes and spleen in the third phase. In the final stage, which is called advanced HIV disease or AIDS, there is complete deterioration of the interior structure of the lymph nodes, the thymus and bone marrow that occurred in the third stage. During this stage, the virus becomes more virulent and they tend to replicate faster and the immune system completely breaks down. When the CD4 (the number of T-cells) count falls to about 200 cells per micro-litre of blood (in an uninfected adult it is about 1000 cells per micro-litre), patients begin to experience OIs. This condition is called AIDS.

HIV has been found to be present in blood, semen, vaginal fluid and breast milk of infected persons. HIV is also found in cerebrospinal fluid (which bathes the brain and spinal cord), synovial fluid (which occupies the narrow space between the lungs and the chest wall) and amniotic fluid (which surrounds the fetus) of infected persons. Researchers have also isolated HIV from saliva, tears, stools and urine (in which HIV is present in very small amounts). There is no documentation of HIV transmission through these fluids. However, these fluids are possibly risk factors for transmission of HIV. The primary means of HIV transmission is heterosexual intercourse with an infected person. Sexually transmitted diseases, such as syphilis, genital herpes, gonorrhoea, and Chlamydia, increase the risk of contracting HIV through sexual contact, probably due to the genital lesions (Encyclopedia Britannica, 2003; Barnett and Whiteside, 2002; Unnikrishna et al., 1993). Test for the disease can be divided in two categories: indirect or serological tests and, the direct or virological tests. Tests are done through the identification of HIV antibodies, which accumulate after four weeks to six months after exposure. The most common test for HIV is the enzyme-linked immune sorbent assay (ELISA). Other tests are Western blot, Polymerase Chain Reaction (PCR) and Single Use Diagnostic Screening (SUDA). There is no cure or effective vaccine for HIV infection till date. Efforts are focused primarily on creating awareness, behaviour change communication (BCC) for changing sexual behaviour, promoting use of condoms, discouraging reuse of contaminated needles, etc.

1.1 Global HIV/AIDS Scenario

Globally, there were 36.9 million [34.3 million–41.4 million] people living with HIV/AIDS at the end of 2014 (UNAIDS, 2015). An estimated 0.8 per cent of adults aged 15-49 years worldwide are living with HIV, although the burden of epidemic varies considerably between countries and region (WHO, 2015). 2 million (1.9 million–2.2 million) people became newly infected with HIV (see Table-1.1), down from 3.1 million (3.0 million–3.3 million) in the year 2000 or about 5,600 new infections per day in 2014. Among the total new infection, adults were 1.8 million (1.7 million – 2.0 million). Considering the new infections in 2014, about 5,000 are above 15 years of age, of whom almost 48 per cent are women and about 30 per cent are within the age group of 15-24 years. In 2014, there were 2.6 million children living with HIV, and 220,000 new infections among children. Women represent half (50%) of all adults living with HIV worldwide. HIV is the leading cause of death among women of reproductive age. Gender inequalities, differential access to service, and sexual violence increase women's vulnerability to HIV. Women, especially younger women, are biologically more susceptible to HIV. At the end of 2014, 1.2 million (980 000 – 1.6 million) died of AIDS where adults were 1.0 million (760 000 – 1.8 million).

Sub-Saharan Africa has the most serious HIV and AIDS epidemic in the world with 66 per cent of the new infections worldwide. Polygamous relationships as well as multi-partners have been highlighted as key drivers of HIV transmission in this region. Indeed the polygamous relationships of men are quite extensive and accepted and even encouraged in many communities (Ragnarsson et al., 2009). Unemployment, labour migration, displacement as a result of armed conflict has also contributed to the HIV epidemic in this region. In 2014, more than two-thirds (70%) of total people living with HIV (PLHIV) in the world, 25.8 million, live in Sub-Saharan Africa—including 88 per cent of the world's HIV-positive children. In 2014, an estimated 1.4 million people in the region became newly infected. An estimated 790,000 adults and children died because of AIDS so far. In this region, young women account for 63 per cent of young people living with HIV. In North Africa and in the Middle-East Africa, approximately 240,000 people are living with HIV in this region and an estimated 22,000 people became newly infected in 2014. An estimated 12,000 adults and

children died of AIDS in 2014. In the same year, 140,000 people were newly infected with HIV in the Eastern Europe and Central Asia**,** bringing the number of people living with HIV to 1.5 million.

Globally, as of June 2015, 15.8 million people living with HIV were accessing antiretroviral therapy, up from 13.6 million in June 2014. Among all adults living with HIV, 41 per cent (38%-46%) were accessing treatment in 2014, up from 23 per cent (21%-24%) in 2010. Of all children living with HIV, 32 per cent (30%-34%) were accessing treatment in 2014, up from 14 per cent (13%-15%) in 2010; whereas, 73 per cent (68%-79%) of pregnant women living with HIV had access to antiretroviral medicines to prevent transmission of HIV to their babies in 2014. Tuberculosis-related deaths in people living with HIV have fallen by 32 per cent since 2004. Tuberculosis remains the leading cause of death among people living with HIV, accounting for around one in three AIDS-related deaths. In 2014, the percentage of identified HIV-positive tuberculosis patients who started or continued on antiretroviral treatment reached 77 per cent (UNAIDS, 2015; WHO, 2015).

The epidemic continues to have a profound effect on sex workers- females, males and transgender. Globally, female sex workers are 13.5 times more likely to be living with HIV than other women. In West African countries, 10 per cent to 32 per cent of new infections were estimated to occur due to sex work. In Uganda, Swaziland and Zambia, 7 per cent to 11 per cent of new infections are thought to be attributable to sex workers, their clients and clients' regular partners. Median HIV prevalence among sex workers varies across the world, from 22 per cent in Eastern and Southern Africa (eight countries) and 17 per cent in Western and Central Africa (17 countries) to less than 5 per cent in all other regions. A separate analysis of available data found a pooled HIV prevalence among female sex workers of 36.9 per cent in sub-Saharan Africa, 10.9 per cent in Eastern Europe and 6.1 per cent in Latin America (UNAIDS, 2013). Though median prevalence among sex workers appears to have lowered in parts of West and Central Africa, but the epidemic remains extremely high in many countries.

Table-1.1: Regional HIV and AIDS Statistics and Features, 2014

Region	*Adults and children living with HIV*	*Adults and children newly infected with HIV*	*Adult prevalence (15–49) [%]*	*Adult & child deaths due to AIDS*
Sub-Saharan Africa	25.8 million (24.0–28.7 million)	1.4 million (1.2 – 1.5 million)	4.8% (4.5% – 5.1%)	790 000 (670 000– 990 000)
Asia and the Pacific	5.0 million (4.5 – 5.6 million)	340 000 (240 000 – 480 000)	0.2% (0.2% – 0.2%)	240 000 (140 000– 570 000)
Latin America	1.7 million (1.4 – 2.0 million)	87 000 (70 000 – 100 000)	0.4% (0.4% – 0.5%)	41 000 (30 000 – 82 000)
Western and Central Europe and North America	2.4 million (1.5 – 3.5 million)	85 000 (48 000 – 130 000)	0.3% (0.2% – 0.5%)	26 000 (11 000 – 86 000)
Eastern Europe and Central Asia	1.5 million (1.3 – 1.8 million)	140 000 (110 000 – 160 000)	0.9% (0.7% – 1.0%)	62 000 (34 000 – 140 000)
Caribbean	280 000 (210 000 – 340 000)	13 000 (9600 – 17 000)	1.1% (0.9% – 1.3%)	8800 (5700 – 13 000)
Middle East and North Africa	240 000 (150 000 – 320 000)	22 000 (13 000 – 33 000)	0.1% (<0.1% – 0.1%)	12 000 (5300 – 24 000)
Global	**36.9 million (34.3 – 41.4 million)**	**2.0 million (1.9 – 2.2 million)**	**0.8% (0.7% - 0.9%)**	**1.2 million (980 000- 1.6million)**

Source: UNAIDS, 2015

1.2 HIV/AIDS in Asia and Pacific

While other parts of the world were beginning to deal with serious HIV/AIDS problem in the mid 1980s, Asia remained relatively unaffected. AIDS epidemic had emerged in several Asian countries in the early 1990s. Although national HIV prevalence rate is relatively low in the most Asian countries, but the vast population of some countries represent very large number of people living with HIV. Based on UNAIDS report 2013, Cambodia, China, India, Indonesia, Malaysia, Myanmar, Nepal, Pakistan, Papua New Guinea, the Philippines, Thailand and Viet Nam are the 12 countries that account for more than 90 per cent of people living with HIV/AIDS in Asia and Pacific region. India, China, Thailand, Indonesia, Vietnam, Myanmar and Malaysia all have an estimated 100,000 or more people living with HIV with around half (49%) of them living in India alone. In the Pacific region, Papua New Guinea has the largest epidemic with around 34,000 people living with HIV in 2009. Controlling the epidemics in the most affected countries is essential if the regional epidemic is to be reversed. In Cambodia, India, Malaysia, Myanmar, Nepal, Papua New Guinea and Thailand the progress has been made where the rate of new HIV infections declined

by more than 25 per cent between 2001 and 2011. Amongst all the countries in this region, the percentage of national HIV prevalence level is high in Myanmar (8.9%). However, in Bangladesh, Indonesia, the Philippines and Sri Lanka, the rate of new HIV infections increased by more than 25 per cent between 2001 and 2011.

In Asia and Pacific, there were an estimated 350 000 (220 000–550 000) new HIV infections in 2012 (UNAIDS, 2013), thereby resulting 5 million (3.7–6.3 million) people living with HIV in this region. It is estimated that 1.7 million (1.3–2.1 million) women living with HIV in the region. Women continue to account for about one third of people living with HIV, at 36 per cent of the total, versus 35 per cent in 2011. There were 210 000 [180 000–280 000] children living with HIV in the region in 2012. New infections among children have declined by 28 per cent to 23 000 [17 000– 34 000] since 2001. An estimated 22,000 children under 15 years in Asia and the Pacific were newly infected with HIV in 2009 which represents a 15 per cent drop from the 1999 estimate of 26,000. AIDS-related deaths among children declined from 18,000 in 2004 to 15,000 in 2009 i.e. a decrease of 15 per cent. In the 2012, approximately 250,000 people died from AIDS-related illnesses in this region, which is a 37 per cent decline in deaths since 2005. Between 2011 and 2012, the number of people accessing antiretroviral treatment increased by 150 000. According to the 2010 WHO guidelines, the region's treatment coverage rate of 51 per cent (43%–63%) of eligible people lags behind the global coverage rate of 61 per cent (57%–66%). Consequently, AIDS-related deaths have not reduced at the same rate as other regions (20% compared to 30% globally since 2005) and benefits of the prevention impact of antiretroviral therapy are not being fully maximized. Certain countries (such as China, India, Myanmar, Thailand and Viet Nam) have made great strides in scaling up access to treatment, each with a rapid scale up to more than 10 000–60 000 in number of people accessing antiretroviral treatment in 2012 (UNAIDS, 2013).

HIV epidemic varies significantly between and within countries. New HIV infections are concentrated among key populations at higher risk, which include injecting drug users (IDUs), female and male sex workers and their clients, men who have sex with men (MSM) and transgender people. Other vulnerable populations include migrants, prisoners, intimate partners of key populations at higher risk and people working in certain industries such as mining, construction, and transport services. Over 20 per cent of IDUs are HIV-positive in Cambodia, Indonesia,

Pakistan, and Thailand, and while HIV rates have fallen in female sex workers across the region. In many provinces the rate remains above 10 per cent. UNAIDS (2013) has indicated that the overlap of injection drug use and sex work is an important factor in China's HIV epidemic.

Based on the HIV prevalence rates, Asian countries could be divided into three broad categories- (1) those with HIV prevalence rate more than one per cent among general population—namely Cambodia, Myanmar, Thailand and parts of India; (2) those with prevalence of less than one per cent in general population, but more than five per cent among population with high-risk behaviour—namely Malaysia, Nepal, Indonesia, Vietnam, China, and Pakistan; and (3) the remaining countries with low prevalence of less than one per cent among high-risk population. Asia's epidemics remain concentrated largely among people who inject drugs, sex workers and their clients, and men who have sex with men. HIV infection patterns can vary considerably in large countries such as India. About 90 per cent of people newly infected with HIV in India are believed to have acquired it during unprotected sex, but the common use of contaminated injecting equipments by two or more people on the same occasion is the main mode of HIV transmission in the country's North-Eastern States (UNAIDS, 2010).

Sex-based socio-economic disparities play a significant role in the spread of HIV. The highest risk factor for HIV infection among women is sexual intercourse. Even when women know or suspect that their counterparts are HIV positive or are having sex with multiple partners, they have little power to insist on condom use. As a result of these and other factors, women accounted for 35 per cent of adults with HIV in Asia at the end of 2013—up from 21 per cent in 1990 (amfAr, 2015). It is estimated that 1.7 million (1.3- 2.1 million) women are living with HIV in Asia in 2012. Sex work and other activities related with sex work are criminalized in all the counties of this region. Criminalization of sex work increases vulnerability to HIV by fuelling stigma and discrimination, limiting access to HIV care and sexual health services, condoms and harm reduction services, and adversely affecting the self-esteem of sex workers and their ability to make informed choices about their health. Based on a global systematic review in low- income and middle-income countries, the burden of HIV infection was disproportionately high among female sex workers, who are 13.5 times more likely to acquire HIV than the rest of the adult female population.

But the highest was observed among female sex workers in Asia and the Pacific, with a 29 fold increase in odds of living with HIV compared with all women of reproductive age. The reported HIV prevalence in Papua New Guinea among sex workers is nearly 20 per cent compared to a national HIV adult prevalence of about 1 per cent. In Myanmar, nearly 7.1 per cent of sex workers are living with HIV compared to a national prevalence of approximately 0.5 per cent. As observed with other key populations, there are geographical areas with higher HIV prevalence. In Hanoi of Vietnam, the prevalence among female sex workers was 22.5 in 2012 which is far ahead than that of national level i.e. 2.7 per cent for female sex workers (see Table-1.2).

Table-1.2: National and Local HIV Prevalence Levels (%) among Key Populations in Selected Countries with Highest Burden

Country	*Men having Sex with Men*	*Injecting Drug Users*	*Female Sex Workers*
China	National 06.7	National 06.3	National 00.3
India	**National 04.4**	**National 07.2**	**National 02.8**
Indonesia	National 08.5	National 36.4	National 07.0
Myanmar	National 08.9	National 18.0	National 07.1
Pakistan	-	National 27.2	National 00.6
Philippines	National 01.7	National 13.6	National 00.3
Thailand	National 07.1	National 16.0	National 01.7
Vietnam	National 04.1	National 11.6	National 02.7

Source: UNAIDS, 2013

In some countries such as Viet Nam, condom use during commercial sex is infrequent. Further, the people who inject drugs in some countries are also buying or selling sex. Almost one in five (18%) surveyed female sex workers in Myanmar tested HIV positive in the mid 2000s. In southern India, up to 15 per cent of female sex workers were living with HIV. The epidemics nature in Asia shows that HIV is spreading more widely, especially to the female partners of people who inject drugs and the clients of sex workers and their other sex partners. In Asia, the epidemic remains dynamic and is evolving rapidly. Nearly half of the world's population lives in Asia and it has the potential to significantly influence the course and overall impact of the global HIV/AIDS pandemic. The region's vulnerability to HIV can be attributed to various factors like multiple sex partners of men, criminalisation of sex workers as well as patronizing sex workers, injecting drug use, high prevalence of sexually transmitted infections (STIs), low condom use, illiteracy, poverty and limited

access to health and information services (Narain, 2004). Poverty is one of the major contributors to societal vulnerability. Poverty and other social factors force women to undertake prostitution for existence and thereby enhancing the risk of acquiring HIV (Sukai, 2010).

1.3 AIDS Epidemic in India

India is the seventh largest, and arguably the most populated country in the world. The Indian political system and economy have been stable since independence in 1947. Since economic liberalization reforms started in 1991, the economy has been growing and societal changes have been tremendous. India, unlike many developing countries, possesses a functioning infrastructure for health care delivery and research and also has a stable pharmaceutical industrial base. Health status in the country is generally low compared to industrialized countries as evidenced by the mortality rates and nutrition indicators. However, compared to most developing countries, immunization rates, antenatal coverage rates, availability of potable water and electricity are satisfactory here. India has a population of 121 crores, around half of whom are adults in the sexually active age group while women constitute about 48.29 per cent of total population (Census Report, 2011). The first HIV infection in India was detected in 1986 among few female sex workers in Chennai. Since then the country has evolved from 'low' to 'concentrated' epidemic. Within a short period it has evolved as one of the most serious public health problems across the whole country. The spread of HIV in India has been uneven. Although much of India has a low rate of infection, certain places have been more affected than others. HIV epidemics are more severe in the southern half of the country and the far North-Eastern region of the country.

India has one of the world's largest and most robust HIV Sentinel Surveillance (HSS) Systems. HIV situation in the country is assessed and monitored through this regular annual sentinel surveillance mechanism established since 1998. It is implemented across the country with support from two national institutes and six regional government public health institutes of India. During 2014-15 the 14th round of HSS was implemented at 767 Antenatal Clinics (ANC) surveillance valid sites covering 572 districts across 35 States and UTs in the country (HSS, 2015). Overall, 3, 04,982 samples were collected from these 767 sites. For High Risk Groups (HRGs)

and Bridge Population, National Integrated Biological and Behavioural Surveillance (IBBS) was carried out as a strategic shift to strengthen the surveillance system among these groups. During the 14th round of HSS implementation, 572 districts had at least one ANC surveillance site, 57 per cent of them were in northern, eastern and central regions, 30 per cent were in the southern and western regions and the remaining 13 per cent were in the north-eastern region of the country.

The overall HIV prevalence among ANC clinic attendees, considered proxy for prevalence among general population, continues to be low at 0.29 per cent. The highest prevalence was recorded in Nagaland (1.29%), followed by Mizoram (0.81%), Manipur (0.60%), Gujarat (0.56%) and Chhattisgarh (0.41%). Telangana (0.39%), Bihar (0.37%), Karnataka (0.36%) and Andhra Pradesh (0.35%) were other states which recorded HIV prevalence of more than the national average. Maharashtra (0.32%), Punjab (0.32%), Rajasthan (0.32%) and Tamil Nadu (0.27%) recorded HIV prevalence similar to national prevalence. Haryana (0.25%), Delhi (0.25%) and Odisha (0.24%) recorded HIV prevalence slightly lower than the national average.

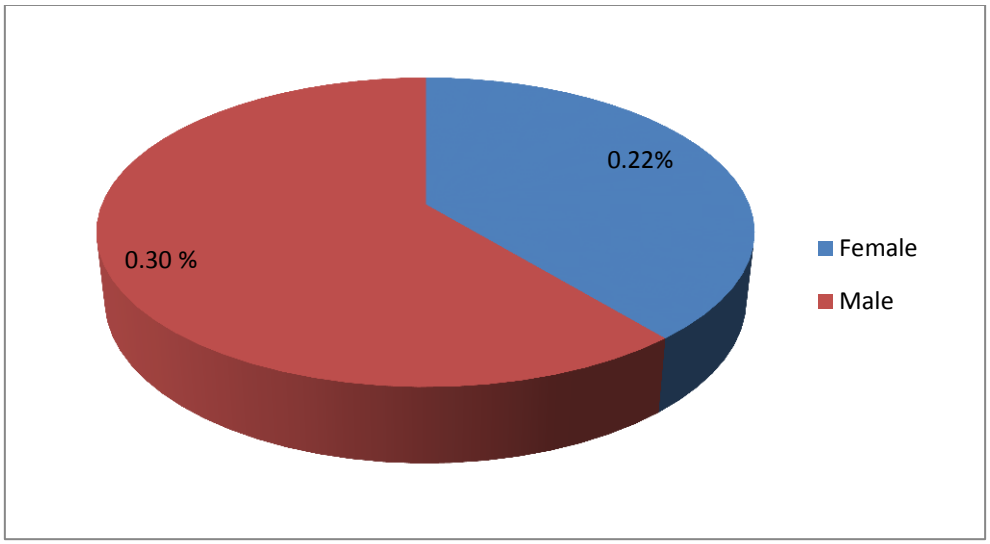
National adult (15–49 years) HIV prevalence is estimated at 0.26 per cent (0.22%–0.32%) in 2015 (NACO, 2015). HIV adult prevalence is estimated at 0.30 per cent among males and at 0.22 per cent among females (see Figure-1.1). Among the States/UTs, in 2015, Manipur has shown the highest estimated adult HIV prevalence of 1.15 per cent, followed by Mizoram (0.80%), Nagaland (0.78%), Andhra Pradesh & Telangana (0.66%), Karnataka (0.45%), Gujarat (0.42%) and Goa (0.40%). Besides these States, Maharashtra, Chandigarh, Tripura and Tamil Nadu have shown estimated adult HIV prevalence greater than the national prevalence (0.26%), while Odisha, Bihar, Sikkim, Delhi, Rajasthan and West Bengal have shown an estimated adult HIV prevalence in the range of 0.21 per cent to 0.25 per cent. All other States/UTs have levels of adult HIV prevalence below 0.20 per cent. The adult HIV prevalence at national level has continued its steady decline from an estimated peak of 0.38 per cent in 2001-03 through 0.34 per cent in 2007 and 0.28 per cent in 2012 to 0.26 per cent in 2015. Declining trends in adult HIV prevalence are sustained in all of the high prevalence States (Andhra Pradesh & Telangana, Karnataka, Maharashtra, Manipur, Nagaland and Tamil Nadu) and other States such as Goa, Odisha and West Bengal. Stable adult HIV prevalence has been noted in States such as Bihar, Chhattisgarh, Gujarat, Mizoram, Rajasthan and Uttar Pradesh. However, rising trends

in adult HIV prevalence has been observed in some of the hitherto relatively low prevalence States/UTs like Assam, Chandigarh, Delhi, Jharkhand, Punjab, Tripura and Uttarakhand. Punjab has 1000-2400 thousand new infections among adults and the rest of the States/UTs have less than 1000 new adult HIV infections in 2015. A clear decline in new infections, as noticed at national level, has been also observed in most of the States/UTs. However, a rising trend in new infections among adults during 2007-15 has been detected in Assam, Chandigarh, Chhattisgarh, Gujarat, Sikkim, Tripura and Uttar Pradesh.

The total number of people living with HIV (PLHIV) in India is estimated at 21.17 lakhs (17.11 lakhs–26.49 lakhs) in 2015 compared with 22.26 lakhs (18.00 lakhs-27.85 lakhs) in 2007. Children (< 15 years) account for 6.54 per cent, while two fifth (40.5%) of total HIV infections are among females. Undivided Andhra Pradesh and Telangana have the highest estimated number of PLHIV (3.95 lakhs) followed by Maharashtra (3.01 lakhs), Karnataka (1.99 lakhs), Gujarat (1.66 lakhs), Bihar (1.51 lakhs) and Uttar Pradesh (1.50 lakhs). These seven States together account for two thirds (64.4%) of total estimated PLHIV. Other States with estimated PLHIV numbers of 1 lakh or more are in Rajasthan (1.03 lakhs), Tamil Nadu (1.43 lakhs) and West Bengal (1.29 lakhs). During 2013-15, the estimated number of PLHIV in India has been more or less stable. It is estimated that India have around 86,000 (56,000–1,29000) new HIV infections in 2015 showing 66 per cent decline in new infections from 2000 and 32 per cent decline from 2007, the year set as baseline in the NACP-IV (2007-2012). Children (<15 years) accounted for 12 per cent (10.4 thousand) of total new infections while the remaining (75.9 thousand) new infections were among adults (15+years). Figure-1.2 shows new infection among children (<15 years) and adults above 15 years (%).

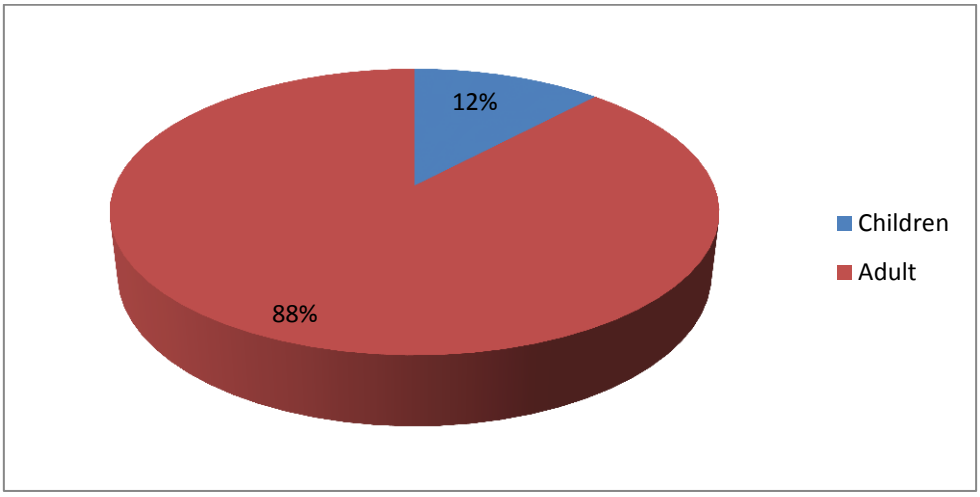
An estimated 67,600 (46,400–1, 06,000) people died of AIDS-related causes in India in 2015. This decline is consistent with the rapid expansion of access to ART in the country. It is estimated that the scale-up of free ART since 2004 has saved cumulatively around 4.5 lakhs lives in India until 2014.

Figure-1.1: Gender-wise HIV Prevalence (%) in India, 2015



Source: NACO, 2015

Figure-1.2: New Infection among Children (<15 years) & Adults (15+ years)



Source: NACO, 2015

The annual number of AIDS-deaths has declined by 70%-81% during 2007-2015 in Karnataka, Maharashtra and Tamil Nadu. Annual AIDS-related deaths declined by 60 per cent to 70 per cent from the baseline values of 2007 in Andhra Pradesh & Telangana, Goa, Himachal Pradesh and Nagaland while a decline of 40 per cent to 47 per cent was estimated in Chhattisgarh, Gujarat and Punjab.

Injecting Drug Users (IDU), Female Sex Workers (FSW), and Men who have Sex with Men (MSM), and Transgender (TG)/*Hijras* have been identified as the core

HRGs in India. It has also been observed that two other population groups play a key role in the spread of HIV infection from HRGs to the general population. These populations, due to the nature of their work and mobility, are more likely to come in contact with HRGs and constitute a major proportion of the clients of sex workers. These risk groups include long distance truckers and migrant workers and are commonly referred to as bridge populations owing to their perceived role in passing the HIV infection from the core groups to general population. The predominant modes of transmission of HIV infection in India are heterosexual contact (88.2%), homosexual contact (1.5%), perinatal transmission (5%), blood and blood products (1%), injecting drug use (1.7%) and others (2.6%) [see Table-1.3].

Table-1.3: Modes of HIV Transmission in India, 2011

Sl. No.	*Risk/Transmission Categories*	*Percentage*
1.	Heterosexual	88.2
2.	Homosexual	1.5
3.	Perinatal transmission	5.0
4.	Blood/Blood products	1.0
5.	Injecting drug user	1.7
6.	Other (not specified)	2.6
	Total	**100.0**

Source: NACO, 2012

During the NACP IV, it is planned that 90 per cent of HRGs will be covered through Targeted Interventions (TI) implemented by Non-Governmental Organisation (NGOs) and Community Based Organisation (CBOs). NACO (2015) estimated that there are about 8.68 lakh Female Sex Workers in the country, scattered in different States with HIV prevalence rate of 2.67 per cent (see Figure-1.3), although this figure varies between different states (see Table-1.4). About 7.18 lakh FSWs (82.7%) are being covered under the Targeted Intervention Programme. Different typologies of sex workers, namely, brothel-based, street-based, home-based, lodge-based, *dhaba*-based, bar girls, etc. are being covered with specific intervention strategies. According to HSS 2010-11, the highest HIV prevalence is found in Maharashtra (6.89%) followed by Andhra Pradesh (6.86%) and Karnataka (5.10%) [NACO, 2011]. As per that report, the HIV prevalence among IDU was 7.14 per cent (see Figure-1.3). The prevalence among IDU was the highest among the HRG population sub-groups. In India, opioids (Heroin, Buprenorphine, Propoxyphene, etc.) are the most commonly injected drugs, either alone or in combination with other drugs from the non-opioid

class (e.g. Diazepam, Promethazine, Chlorpheniramine, etc.). However, the injecting as well as treatment-seeking behaviours among IDUs vary significantly between different regions. The number of IDUs in the country is estimated at about 1.77 lakh; of this about 29 per cent are estimated to be from the North-Eastern States. During 2013-2014, about 1.32 lakh IDUs (74.6% of the estimated number) have been covered by NACO's program. This also includes seven exclusive interventions for Female IDUs and regular sex partners of male IDUs in four North-Eastern States (Manipur, Mizoram, Nagaland and Meghalaya). About 1,350 female IDUs and more than 700 regular sex partners of male IDUs were receiving prevention services from these Targeted Interventions. The estimation of high-risk MSM is 3.13 lakh in the country. Through TI projects, about 2.59 lakh (82.7%) MSM are being covered with services. The national programme is also complimented by *'Pehchan'*. This is a Global Fund Round 9 India HIV Programme (GFATM), which is implemented by India HIV/AIDS Alliance focusing on strengthening community institutions and systems for MSM, Transgender/Hijra interventions so that the outreach and quality of services are improved.

It is estimated that around 13.45 lakhs PLHIV needed ART in 2015, based on the assumptions on progression and survival of adults and children infected with HIV as well as current treatment eligibility criteria. This includes 12.71 lakhs adults (15+years) and 75 thousand children (<15 years). More than half of this estimated need is in the high burden States of Andhra Pradesh & Telangana (2.6 lakhs), Karnataka (1.4 lakhs), Maharashtra (2.3 lakhs), and Tamil Nadu (1.1 lakhs). Bihar (79.9 thousand), Gujarat (92.6 thousand), Rajasthan (57.9 thousand), Uttar Pradesh (79.9 thousand) and West Bengal (71 thousand) are other states with an estimated ART need of 50 thousand or more. Based on the estimated HIV infections among adult females and assumptions on the effect of HIV on fertility and parent to child transmission rates, it is estimated that around 35 thousand HIV positive pregnant women needed prevention of parent to child transmission (PPTCT) services in 2015.

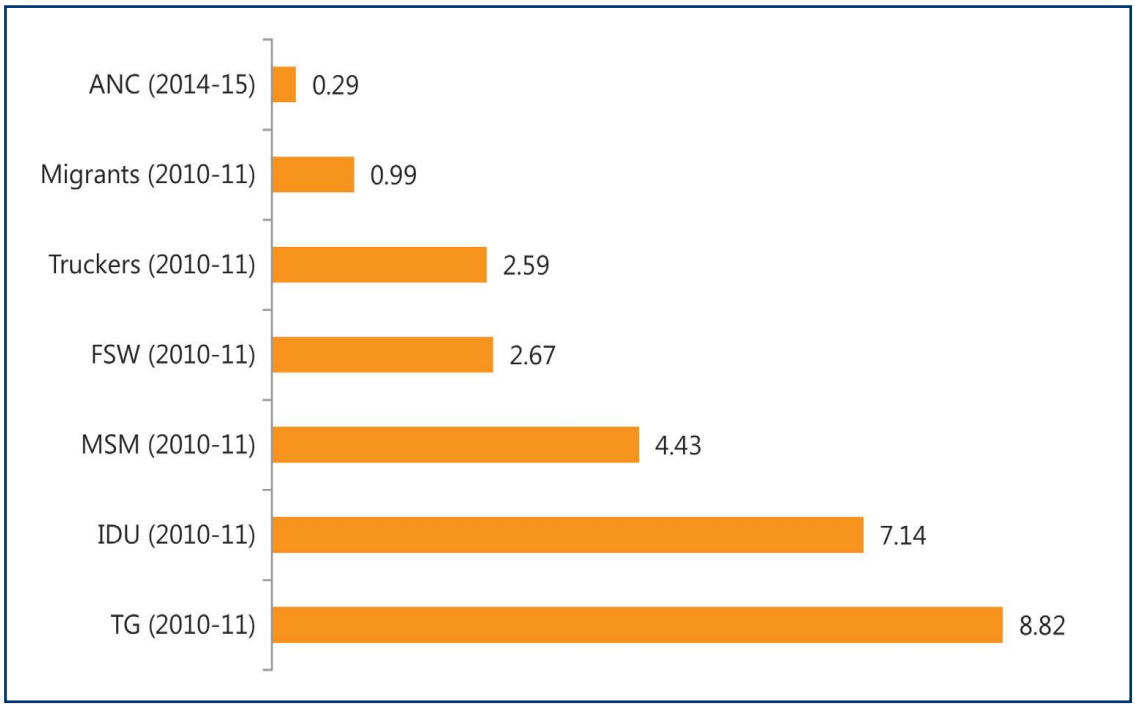
The overall number of pregnant women needing PPTCT has declined in the country from 52.8 thousand in 2007 to 35 thousand in 2015. Twelve States, including Andhra Pradesh & Telangana, Bihar, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal, account for 88 per cent of all PPTCT needs in the country.

Table-1.4: State-wise HIV Prevalence among Different Population Groups, 2011

Sl. No.	*State/UT*	*ANC*	*IDU*	*MSM*	*FSW*
1.	Andaman & Nicober	0.13	0.00	0.00	NS
2.	Andhra Pradesh	0.76	3.05	10.14	6.86
3.	Arunachal Pradesh	0.21	0.24	0.00	0.28
4.	Assam	0.09	1.46	1.40	0.46
5.	Bihar	0.17	4.54	4.20	2.30
6.	Chandigarh	0.00	7.20	0.40	0.00
7.	Chattisgarh	0.43	0.42	14.98	1.65
8.	Dadra& Nagar Haveli	0.00	0.00	0.00	NS
9.	Daman & Diu	0.13	0.00	0.00	NS
10.	Delhi	0.30	18.27	5.34	0.70
11.	Goa	0.33	0.00	4.53	2.70
12.	Gujrat	0.46	1.60	3.00	1.62
13.	Haryana	0.19	0.80	3.05	0.48
14.	Himachal Pradesh	0.04	4.89	1.23	0.53
15.	Jammu & Kashmir	0.06	0.00	0.00	0.00
16.	Jharkhand	0.45	2.02	0.40	0.82
17.	Karnataka	0.69	0.00	5.36	5.10
18.	Kerala	0.13	4.95	0.36	0.73
19.	Lakshadweep	NS	NS	NS	NS
20.	Madhya Pradesh	0.32	5.13	7.94	0.93
21.	Maharastra	0.42	14.17	9.91	6.89
22.	Manipur	0.78	12.89	10.53	2.80
23.	Meghalaya	0.05	6.44	0.00	NS
24.	Mizoram	0.40	12.01	0.00	NS
25.	Nagaland	0.66	2.21	13.58	3.21
26.	Orissa	0.43	7.16	3.79	2.07
27.	Puducherry	0.13	0.00	1.21	1.21
28.	Punjab	0.26	21.10	2.18	0.85
29.	Rajasthan	0.38	0.00	0.00	1.28
30.	Sikkim	0.09	0.00	0.00	0.00
31.	Tamil Nadu	0.38	0.00	2.41	2.69
32.	**Tripura**	**0.00**	**0.45**	**0.00**	**0.21**
33.	Uttar Pradesh	0.21	2.03	1.56	0.62
34.	Uttaranchal	0.25	4.33	0.00	0.44
35.	West Bengal	0.13	2.72	5.09	2.04
	India	**0.40**	**7.14**	**4.43**	**2.67**

Source: NACO, 2012.

Figure-1.3: HIV Prevalence (%) among ANC Client (2014-15) and Other Risk Groups (2010-11), India



Source: NACO, 2015

1.4 HIV/AIDS in Tripura

The history of HIV/AIDS in Tripura is 10 years later than that of national case. The first HIV infection in Tripura was detected in 1996. But, the adult (15-49 years) prevalence rate of HIV for this State is 0.31 per cent which is higher than that of National level i.e. 0.26 per cent (NACO, 2014). According to the Tripura AIDS Control Society (TSACS) the total number of people living with HIV in this State is estimated at 930 in 2012 (TSACS, 2013), while it is 1039 including children at the end of 2015 (TSACS, 2016). Among the total infection up to the year 2015, male accounts for 603 and female for 436. Hence, infected male persons are higher than that of female. It is also found that among the eight districts of Tripura, majority of PLHIV (259) is in North Tripura District followed by West Tripura District (250) [see Table-1.5]. It is to be mentioned here that, North Tripura District (259 PLHIV) is the only corridor to go out of Tripura by road through NH 44. The second highest PLHIV (250 PLHIV) is in the West Tripura district. It is also to be worth mentioning that Agartala, the capital of Tripura lies in West District of Tripura.

Table-1.5: District-wise Break up of PLHIV in Tripura, 2015

District	*Adult*		*Child*		***Total***
	Male	*Female*	*Male*	*Female*	
West Tripura	148	97	03	02	**250**
Khowai	64	38	02	01	**105**
Sipahijala	46	36	00	03	**85**
South Tripura	19	22	02	02	**45**
Gomati	39	29	02	01	**71**
North Tripura	147	107	03	02	**259**
Unokoti	51	41	01	00	**93**
Dhalai	74	50	04	03	**131**
Total	**588**	**420**	**17**	**14**	**1039**

Source: TSACS, 2016

Out of 1039 PLHIV, 804 people are on ART and the rest 235 people have not yet started ART. Table-1.6 and Table-1.7 shows the male and female break up of PLHIV on- ART and pre- ART in the eight districts of Tripura.

Table-1.6: District-wise Break up of PLHIV (on ART), 2015

District	*Adult*		*Child*		***Total***
	Male	*Female*	*Male*	*Female*	
West Tripura	117	74	03	02	**196**
Khowai	48	27	02	01	**78**
Sipahijala	40	25	00	03	**68**
South Tripura	16	16	02	02	**36**
Gomati	27	24	02	01	**54**
North Tripura	120	80	03	02	**205**
Unokoti	36	26	01	00	**63**
Dhalai	59	38	04	03	**104**
Total	**463**	**310**	**17**	**14**	**804**

Source: TSACS, 2016

Table-1.7: District-wise Breakup of PLHIV (Pre-ART), 2015

District	*Adult*		***Total***
	Male	*Female*	
West Tripura	31	23	**54**
Khowai	16	11	**27**
Sipahijala	6	11	**17**
South Tripura	3	6	**09**
Gomati	12	5	**17**
North Tripura	27	27	**54**
Unokoti	15	15	**30**
Dhalai	15	12	**27**
Total	**125**	**110**	**235**

Source: TSACS, 2016

Of all HIV infection 4.7 per cent is children less than 14 years, while 90 per cent (935 no's) are in the age group of 15-49 years and 5.3 per cent (55 no's) are in 50 years or above (see Table-1.8 and Figure-1.4). The majority of the PLHIV falls under the age group of 15 years to 49 years. The reported death cases due to HIV/AIDS in 2012 is 84, where 69 are adult male, 01 male child, 12 adult female and 02 female child. In comparison to 2012, death cases due to HIV/AIDS are 269 in the year 2015. It is found that among total death cases, adult male accounts for 201, adult female 60 and children 08 (05 female and male 03).

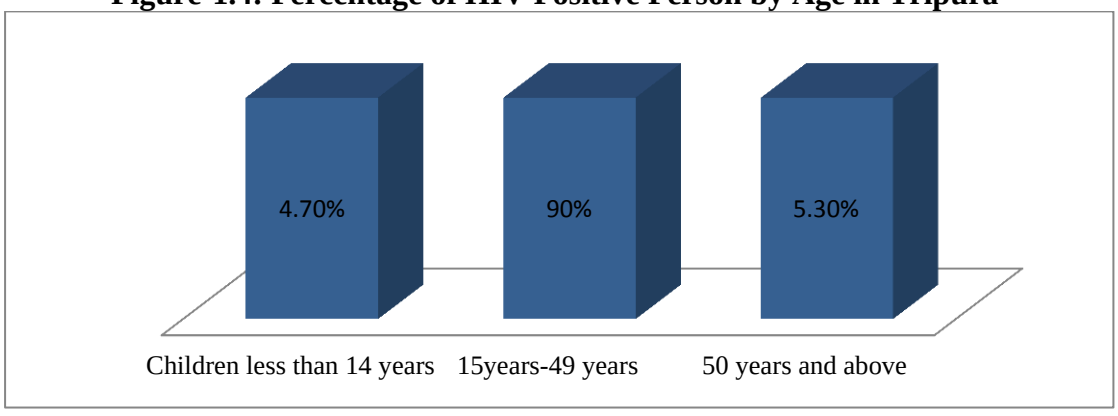
Table-1.8: Distribution of HIV Positive Person by Age in Tripura

Age Group (years)	*No of HIV Positive*
Less than 14	49
15-24	158
25-34	436
35-49	342
50 and above	55
Total	**1039**

Source: TSACS, 2016

In the year 2007-2008, the new HIV cases were reported as male (45), female (24), and child (06). In the year 2009-2010, it was 113 for male, female 48 and child 04 while in 2011-2012 new HIV infection cases were reported as 188 numbers, where male account for 102, female 75 and child 11. In the 2015-16 financial year, total 83,667 no. of people have been tested their HIV status. Among the total HIV tested population, 12441 persons are through TIPs. It is found that for the Financial Year of 2015-16 total new infection cases were 252. Among the new HIV infections, there are 12 numbers of children while male is 148 and female is 104. So, rising trend of HIV infection from 2008-2015 has seen in this State.

Figure-1.4: Percentage of HIV Positive Person by Age in Tripura



Source: TSACS, 2016

Among the total number of HIV positive person till 2015-16, maximum number of cases is found in housewives (295); followed by daily labours (164); drivers (106); truckers (98); defence personnel (92); unemployed (54); businessmen (47); FSWs (45) etc. (see Table-1.9).

Table-1.9: Occupation-wise Breakup of PLHIV, 2015-16

Occupation of PLHIV	*No of PLHIV*
Housewives	295
Daily labors	164
Drivers	106
Truckers	98
Defense Personnel	92
Unemployed	54
Businessmen	48
FSWs	45
Service (office)	37
Students (above 7 years-25 years)	33
Private Job	22
Child (below 7 years)	21
Teachers	06
Retired persons	06
ASHA/AWW/LT	05
Agricultural farmers	01
Total	**1039**

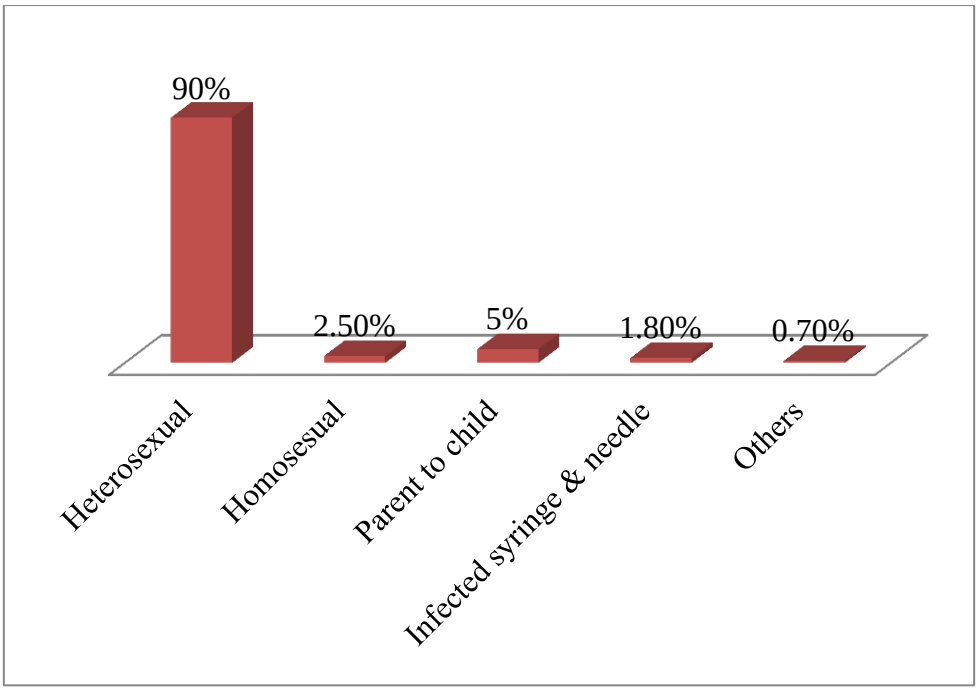
Source: TSACS, 2016

It is reported by TSACS that 45 FSWs were found HIV positive through the different TIPs in Tripura. There is no brothel or red light area as such in Tripura so far. Hence, sex work is hidden in this State and majority of sex workers are mobile in nature. According to TSACS, except the beneficiaries of TIPs under TSACS, there is a chance of hiding the profession of the persons visiting ICTC specially the FSWs due to social stigma attached with sex work. So there is a possibility that some of these 295 PLHIV housewives may be engaged in sex work.

In Tripura, HIV has been mainly transmitted via sexual intercourse (92.5%), which is higher than that of national level i.e. 89.7 per cent. Additional routes of transmission include prenatal, unsafe blood and blood products, infected needles and syringes and unspecified routes of transmission (TSACS, 2014). Out of 92.5 per cent HIV infection through sexual routes, heterosexual mode of HIV transmission accounts for 90 per cent and homosexual accounts for 2.5 per cent. Other routes of

HIV transmission are— parents to child for (5%), infected syringe and needle (1.8%) and others (0.7%) [see Figure-1.5].

Figure-1.5: Modes of HIV Transmission (%) in Tripura



Source: TSACS, 2014

1.5 Response to HIV/AIDS in India

From the very beginning, the Government of India is fully committed to preventing HIV/AIDS before it emerges as a catastrophic epidemic. In 1985, the Indian Council of Medical Research (ICMR) established a task force on AIDS to screen sera from high-risk groups at National Institute of Virology, Pune and ICMR Centre for Advanced Research in Virology located in Christian Medical College, Vellore. The first detection of HIV in India led to the formation of National AIDS Committee headed by the Secretary, Ministry of Health and Family Welfare. In 1990, a Medium Term Plan (1990-1992) was launched in four States - Tamil Nadu, Maharashtra, West Bengal and Manipur, and four metropolitan cities - Chennai, Kolkata, Mumbai and Delhi. The plan facilitated targeted IEC campaigns, establishment of surveillance system and safe blood supply.

In 1992, the Government of India demonstrated its commitment to combat the disease with the launch of the first National AIDS Control Programme (NACP-I) as a comprehensive programme for prevention and control of HIV/AIDS in India. The programme, implemented during 1992-1999 with an IDA Credit of USD $84 million, had the objective to slow down the spread of HIV infections so as to reduce morbidity, mortality and impact of AIDS in the country. To strengthen the management capacity, a National AIDS Control Board (NACB) was constituted and an autonomous National AIDS Control Organization (NACO) was set up for project implementation. In November 1999, the second National AIDS Control Programme (NACP-II) was launched with World Bank credit support of USD $191 million. Based on the experience gained in Tamil Nadu and a few other States and along with the evolving trends of the HIV/AIDS epidemic, the focus shifted from raising awareness to changing behaviour, decentralization of programme implementation to the State level and greater involvement of NGOs. The third phase of National AIDS Control Programme (NACP-III), implemented during 2007-2012, is a scientifically well-evolved programme, grounded on a strong structure of policies, programmes, schemes, operational guidelines, rules and norms. Over the time, the focus has shifted from raising awareness to behaviour change, from a national response to a more decentralized response and to increasing involvement of NGOs and networks of PLWHA. NACP-III aims at halting and reversing HIV epidemic in India over the five-year period by scaling up prevention efforts among High Risk Groups (HRGs) and general population and integrating them with care, support & treatment services. Thus, prevention and care, support & treatment (CST) form the two key pillars of all the AIDS control efforts in India. Strategic Information Management and institutional strengthening activities provided the required technical, managerial and administrative support for implementing the core activities under NACP-III at national, state and district levels. Provisions of Sexually Transmitted Infections (STI) /Reproductive Tract Infections (RTI) services is aimed at preventing HIV transmission under the NACP III and Reproductive and Child Health (RCH III) programme of the National Rural Health Mission (NRHM). Enhanced Syndromic Case Management (ESCM), with minimal laboratory tests, is the cornerstone of STI/RTI management under NACP III. Under NACP III, it is a mandate to strengthen all public health facilities at the district as well as above the district level with the aim to have at least one NACO supported STI/RTI clinic per district.

A modified strategy has been designed based on the lessons learnt from the previous phases of the programme, and through this, the Department of AIDS Control (DAC) reiterates its commitment towards prevention and control of the disease in its fourth phase of NACP (NACP-IV) in synchronization with the 12th Five Year Plan timeline. Over the period 2012-2017, NACP-IV aims to accelerate the process of reversal, further strengthening the epidemic response in India through a cautious and well-defined integration process. The main objectives of NACP-IV are to reduce new infections and provide comprehensive care and support to all PLHIV and treatment services to all those who require it. An elaborate and extensive process to develop the strategy and implementation plan for NACP-IV has been initiated with the goal of accelerating the reversal of epidemic through an integrated response by providing care, support and treatment to all eligible population along with focused prevention services for the high risk groups and vulnerable marginalized and hard-to-reach populations. NACP-IV has adopted an inclusive, participatory and widely consultative approach and is further building on the globally acclaimed and successful planning and implementation efforts of NACP-III. The process will essentially involve a wide range of consultations with a large no. of partners including Government departments, development partners, NGOs, civil society, representatives of people living with HIV, and experts in various subjects. NACP-IV development will use specific mechanism and follow a structured process to curb the epidemic in India.

India's epidemic is similar to other Asian HIV epidemics as it is driven by groups with high risk behaviours. Currently, the epidemic remains concentrated in specific high risk populations (HRG - high risk groups or MARPs – Most at risk populations) and their sexual partners. Therefore, prevention through focused interventions amongst these groups is of extreme importance for controlling HIV epidemic. HIV infection in India is transmitted from HRGs to general population through bridge population who constitute major proportion of the clients of sex workers, such as truckers and male migrants. Given this model of epidemic transmission, it is most effective and efficient to target prevention efforts towards HRGs to keep their HIV prevalence as low as possible and to reduce transmission from them to the bridge population. Therefore, there is a need to have Targeted Interventions (TI) projects among HRGs as well as the bridge populations. The key

risk groups covered through Targeted Intervention (TI) programme include Female Sex Workers (FSW), Men who have Sex with Men (MSM), Transgender (TG), Injecting Drug Users (IDU), Bridge Populations, Truckers and Migrants. According to the Annual report of NACO (2014-15), total 1840 TIs are working in India for catering the needs of above all groups. Targeted Interventions are preventive interventions focused at High Risk Groups and bridge populations of a particular geographic area. The TI Projects are peer-led interventions implemented through NGOs/Community Based Organizations (CBOs). These projects are mentored, monitored and supported by the State AIDS Control Societies (SACS), Technical Support Units (TSUs); State Training and Resource Centres (STRC) and NACO. The NGOs/CBOs are implementing the TI projects and collect field level data based on the reporting formats developed by NACO which form a part of national Monitoring & Evaluation framework. Link Worker Scheme (LWS) has been initiated for the rural areas, which has the mandate to work in high prevalence and highly vulnerable districts of the country. The objective behind this initiation is to reduce vulnerability to HIV/AIDS in rural India as HIV is no longer restricted in urban areas. Currently the Link Worker Scheme is operational in 162 out of the planned 163 high prevalence and high vulnerable districts of 17 States i.e. Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Manipur, Mizoram, Orissa, Punjab, Rajasthan, Tamil Nadu, Tripura, Uttar Pradesh and West Bengal. One of the core activities of the scheme is to identify the HRGs and other vulnerable population. It is fact that due to stigmatization and discrimination, FSWs and MSM in rural areas are mobile and hidden in nature; it is sometimes difficult to identify them. As drug users are usually harassed by various authorities, many of them are isolated from public places. Therefore, community sensitisation is important to create an enabling environment for HRGs and vulnerable populations. A total of 1,79,393 against 1,68,082 mapped HRGs (FSWs, MSMs and IDUs), 41,11,795 against 45,99,326 mapped vulnerable population and ridge population, and 47,408 against 40,662 mapped PLHIV have been identified and contacted at least once under the scheme (NACO, 2015). In relation with the achievement during 2013-14, 100 per cent of the HRGs, 89 per cent vulnerable population and bridge population and 100 per cent of PLHIV in the vulnerable rural districts has been covered by LWS. Almost 100 per cent HRGs in these districts have been tested at ICTC and 71 per cent of them have sought treatment for STI symptoms under this scheme. In order to create a sense

of ownership in the community and involve youth in fighting against HIV, many Condom Depots, Red Ribbon Clubs and Information Centres have been established at the village level. During 2013-2014, a total of 15,359 Red Ribbon Clubs and 18,177 Village Information Centres were functional under LWS (NACO, 2015).

Sexually Transmitted Infections (STIs) and Reproductive Tract Infections (RTIs) enhance chances of acquiring and transmitting HIV infection manifold. Hence, control and prevention of STI/RTI is one of the key prevention strategies for HIV. The STI division of Department of AIDS Control (DAC) is managed by Dy. Director General (STI) with the support of Additional Director General (STI), technical experts and a Programme Officer. There are 34 SACS STI focal persons and 10 STI Programme Officers in Technical Support Units in the country to oversee programme implementation in respective States. Presently there are 1,131 Designated STI/RTI Clinics (DSRC) supported by the Department of AIDS Control, with at least one DSRC per district in the country. The provision of a standardized package of STI/RTI services to the HRG population is an important component of the Targeted Intervention projects. This package of STI/RTI services includes free consultation and treatment for their symptomatic STI complaints, quarterly medical check-up, asymptomatic treatment (presumptive treatment) and bi-annual syphilis and HIV screening. Preferred Private Provider (PPP) approach has been launched to scale-up STI/RTI services to HRG populations under TI Projects. These providers are selected through preference basis by community members through group consultations. A total of 3565 preferred providers are providing STI/ RTI services to the HRGs (NACO, 2015).

The fact that 'unprotected sex is the biggest cause of HIV transmission' which prompted Department of AIDS Control (DAC) to promote condom use as one of the important preventive tools in its fight against AIDS. In terms of enhancing the availability and accessibility of condoms, raising awareness and increasing condom off take from retail outlets, Department of AIDS Control have been made significant efforts to promote consistent use of condom for the prevention of HIV transmission. Department of AIDS Control promotes safe sex and regular condom use through its campaigns on mass media. These condom promotion campaigns on mass media are launched on national networks of Doordarshan, leading Cable and Satellite channels, All India Radio and private FM channels. The digital cinema screening platform was

also included in the condom campaign media plan to reach out to the target population through cinema halls of smaller towns.

Ensuring provision of safe blood for healthcare and proper functioning of the health system in the country is the responsibility of the Department of AIDS Control. DAC supported blood banks are functional across the country in over 600 districts. The availability of safe blood has increased from 44 lakh units in 2007 to 99 lakh units by 2013- 2014 (NACO, 2015). During this period the incidence of donor HIV sero-positivity has declined from 1.2 per cent to 0.2 per cent in DAC supported blood banks. The blood transfusion services supported by DAC comprise a network of 1,137 blood banks, including 258 Blood Component Separation Units (BCSU) and 34 Model Blood Banks. In order to promote rational use of blood, the Blood Component Separation Units (BCSU) has been established as an active part of Blood Transfusion Services. These BCSU are working in their respective States and the proportion of blood units processed for component separation increased from 47 per cent to 59 per cent over the last financial year. Around 37 lakh blood units have been collected during this time period (NACO, 2015).

There are different types of HIV Counselling and Testing services in India. The national programme is offering these services since 1997 with the goal to identify immediately as many people living with HIV. The introduction of ART services for people living with HIV/AIDS in 2004, gave a major boost to Counselling and Testing services in India. During 2013-2014, 130.3 lakh (96%) received counselling and testing services against the annual target of 134.81 lakh general clients. In the year 2002, the Prevention-of-Parent-to–Child Transmission (PPTCT) of HIV/AIDS programme was started in the country. The aim of the PPTCT programme is to offer HIV testing to every pregnant woman in the country, so as to cover all estimated HIV positive pregnant women and eliminate transmission of HIV from mother-to-child which is the primary route of transmission among the children. Currently there are more than 15,000 ICTCs in the country offering PPTCT services to pregnant women. It is estimated that without any intervention, the risk of transmission of HIV from an infected mother to her child, is 20 per cent to 45 per cent. A total number of 97.52 (74%) lakh pregnant women were tested for HIV during 2013-2014, against a target of 131.58 lakh. A total of 12,008 pregnant women were found to be HIV positive, out

of which 10,085 (84%) Mother-Baby (MB) pairs were provided ARV prophylaxis drugs for prevention of mother-to child transmission (NACO, 2015).

Tuberculosis (TB) burden is highest in India compare to the other countries in the world. It is estimated that 2.2 million new TB cases occur annually in this country. TB is the commonest opportunistic infection (OI) in HIV-infected individuals. HIV infection is also a significant risk factor for acquiring TB infection and its progression to active TB. HIV/TB together is a fatal combination with extremely high death rates (15% to 18%) reported among HIV-infected TB cases notified under Revised National Tuberculosis Control Programme (RNTCP). Overall, TB is estimated to cause about 25 per cent of all deaths among PLHIV in India. Early detection of HIV/TB cases and prompts provision of Anti-Retroviral Therapy (ART) and Anti-Tuberculosis Treatment (ATT) is key interventions to reduce mortality rates significantly. The Department of AIDS Control and Revised National TB Control Programme have been successful in increasing access and uptake of HIV testing and counselling for all TB patients. In the year 2013-2014, about 8, 92,088 out of 14, 16,014 registered TB patients had their HIV status assessed. More than 1.6 lakh presumptive TB cases were identified among ART centre attendees in 2013-2014 and around 15 per cent of them were found positive for TB. Around 93 per cent HIV/TB cases are also linked to DOTS centres (NACO, 2015).

1.6 Response to HIV/AIDS in Tripura

The State Tripura is developing in the field of education and infrastructural development including health care sector. It is relevant to mention that the State is active in awareness campaigning in the life threatening disease AIDS. It is fact that the first case of AIDS was reported in the State during 1996. Before formation of State AIDS Control Society, the state government was looking after the issue of HIV/AIDS through an AIDS Cell under the Health Department. In the year 1999, Tripura AIDS Control Society (TSACS) was formed. Since then, TSACS has been looking after and taken active initiative covering almost all corner of the State to curb HIV/AIDS.

Now in NACP-IV Phase, TSACS extending all means of support to NGOs as per the guidelines and direction of NACO. According to the report of TSACS (2014),

it is found that at present, Tripura has 1 ART Centre, 2 LWS , 19 ICTC, 16 STD clinic, Blood Bank and Blood storage 6 no's and 7 no's respectively, 1 DAPCU, 3 LAC, 3 OST, 1 PPTCT, and 3 no's of PPPICTC (see Table-1.10).

Table-1.10: HIV/AIDS Care Services in Tripura

Sl. No.	*Services*	*No.*
1.	ART Centre	1
2.	LWS	2
3.	ICTC	19
4.	STD Clinic	16
5.	Blood Bank	6
6.	Blood Storage	7
7.	DAPCU	1
8.	LAC	3
9.	OST	3
10.	PPTCT	1
11.	PPICTC	3

Source: TSACS, 2014

TSACS is implementing the AIDS Control Program through different NGOs covering different HRGs (see Table-1.11).

Table-1.11: TI Programmes in Tripura

Sl. No.	*Districts*	*Migrants*	*FSW*	*MSM*	*IDU*	***Total***
1.	West Tripura		1	1		**2**
2.	Khowai		1			**1**
3.	Sipahijala		1			**1**
4.	South Tripura	1	1			**2**
5.	Gomati	1	1			**2**
6.	North Tripura		1		1	**2**
7.	Unokoti		1			**1**
8.	Dhalai	1	1		1	**3**
	Total	**3**	**8**	**1**	**2**	**14**

Source: TSACS, 2013

During 2015-16, services were delivered by TSACS through 14 TIPs implementing NGOs throughout the State for FSWs (5188); MSM (155); IDUs (456) and Migrant labours (10,343). Out of 21, 477 estimated HRGs, FSWs account for 5,473 (see Table-1.12). The response to the HIV epidemic is guided by data obtained through HIV sentinel surveillance in Tripura as well as in other states of India. In Tripura, the HIV sentinel surveillance was started from the year 2002. In 2008, the HIV sentinel

surveillance was conducted among the antenatal clinic attendees, injecting drug users and patients attending in STI clinic. The sample size for ANC attendees was 800, while IDUs and STI attendees were 239 and 1743 respectively. FSW and MSM sites were not covered. The HIV prevalence rate for IDUs site was 0.42 per cent and 1.03 per cent in STI site. None found HIV positive in ANC site. In 2010, the number of sample size tested was increased in STI attendees but decreased in IDUs and same in ANC site. It was 1750 for STI attendees, where as 800 for ANC attendees, 225 for IDUs and 960 for FSWs. It is to be noted that FSW site has been introduced for the first time in the year 2010. HIV prevalence rate for these sample size was 0.2 per cent for FSWs, 0.4 per cent for IDUs and nil in ANC site. During HSS 2014-15, the HIV prevalence rate at ANC site for Tripura is 0.19 per cent and 0.13 per cent at Syphilis sero-positivity test. Hence, recent HSS data for ANC sites in Tripura shows the rising trend of HIV infection.

Table-1.12: Services Provided to Different Beneficiaries under TIs in Tripura, 2015-16

Targeted Intervention (TI)	*FSW*	*MSM (Composite Program For MSM & FSW)*	*IDU*	*Migrants*	***Total***
No. of TI supported by TSACS	08	01	02	03	**14**
HRG estimates (validated)	5473	576	428	15,000	**21,477**
HRG population covered	5188	155	456	10343	**HRGs- 5799 Migrants- 10343**
No. of individual treated at STD Clinics	273	02	0	291	**566**
No. of individual attended RMC	3761	126	464	0	**4351**
No. of HRG screened for syphilis	5785	222	605	3516	**HRGs- 6612 Migrants- 3516**
No. of person visited ICTC	7150	237	754	4300	**12441**
No. of condoms distribution	569086	15192	38184	48192	**670754**
No. of Needles and Syringes distribution	-	-	44046	-	**44046**

Source: TSACS, 2016

Red Ribbon Club (RRC) Program is a voluntary on-campus intervention, aimed at heightening the risk perception and preventing HIV among student in academic institutions. RRC have become a powerful medium to reach out to young people. Spearheaded by the TSACS in the year 2008-09, this program is supported by the Department of Higher Education, Government of Tripura to address the issue of HIV/AIDS. RRC empowers students in the age group of 17-25, by giving the information and life skill training to protect themselves from HIV/AIDS and engaging the most active among them into peer educators. As per TSACS report, 20 Red Ribbon Clubs exist in University/Colleges/ Institutes of Tripura. Out of 20 RRC, 12 exist in West Tripura District, one each in Gomati and South Tripura, and 1 each in Sipahijala, Unokoti, North Tripura and Dhalai District.

The future of HIV/AIDS in India is contingent upon the extent and effectiveness of current and future prevention efforts. Since it takes 7-10 years for people with HIV to develop AIDS, the annual toll will continue to grow in future, requiring further efforts for the next several years. This will obviously have a major impact on the already fragile health and economic infrastructure in terms of direct medical and patient care costs, indirect costs in the form of absenteeism and decreased productivity. The success of NACP is dependent upon the coverage and quality of targeted intervention programmes (TIPS). TIPS use innovative approaches based on best available practices in the counter, combining behaviour change communication (BCC), counselling and general health care including the treatment of STDs, promotion of condom use and creating an enabling environment. These interventions are carried out by NGOs, as they are best suited to reach these populations which often can be hard to access and may not trust the public establishment.

1.7 Theoretical Framework of the Study

Sexual activity in humans is an instinctive form of physical intimacy. It is performed for biological reproduction, spiritual transcendence, expressing affection and or for enjoyment and pleasure (often termed as sexual gratification). In fact, human sexuality is shaped by cultural and historical context. In interactions with their culture and society, people learn and internalize various expression of sexuality. Sexual behavior of human beings has been studied from different perspectives. From the ancient period, prostitution has existed in all human societies with different

ramifications. Prostitution was widespread in ancient civilizations like Egypt, Greece, Rome, China and India. As a profession, prostitution has a long history in India too. Prostitution describes sexual intercourse with multiple partners in exchange of monetary/material benefits or for other personal gain. In some cases, those sexual services are used to acquire food, shelter, drugs or alcohol, and a number of needs deemed necessary by an individual for survival (Vanessa, 2005). Today prostitution is regarded as much hated, out- caste, outlawed anti-social profession.

Wikipedia (2015) says a sex worker is a person who works in the sex industry. The term is used in reference to all those in all areas of the sex industry including those who provide direct sexual services as well as the staff of such industries. Some sex workers are paid to engage in sexually explicit behaviors which involve varying degrees of physical contact with clients. The term 'sex worker' was coined in 1978 by sex worker activist Carol Leigh. This term has since spread into much wider use, including in academic publications, by NGOs and labor unions, and by governmental and international agencies, such as the World Health Organization, UNAIDS, etc. Although the term sex worker is sometimes viewed as a synonym or euphemism for prostitute, but it is more general. Some people use the term to avoid invoking the stigma associated with the word prostitute. Sex workers are those adults who exchange sexual services for money and other material compensation or for any kind of personal benefits which necessarily, but not exclusively, includes direct physical sexual contact with clients. Thus, sex workers are adults who earn at least part of their income through the sale of direct sexual contact. Included in this term are those who engage in outdoor street-level sex work, as well as those who work indoors in their homes, clients' homes, or in commercial venues.

Prostitution has been a controversial issue in social science. There exists a diversity of feminist views on prostitution, as with other many issues within the feminist movement. One group of Feminist theorists has said about the abolition of prostitution and the rehabilitation of the prostitutes. They argue that the patriarchal oppression of women stems from and is enforced by the sexual double standard, and the repression of women through sex. Prostitution exemplifies this oppression as it represents not only female economic dependence on male authority, but it also epitomizes male domination of women through females' sexual oppression, including violent acts such as beatings, rape and even murder (LeBrun, 1999). According to

them, women never can attain equal power as like as men if prostitution and all forms of violence attached with it continue to exist. This feminists' opinion on prostitution is known as Radical Feminism.

Other group of feminists, i.e. Liberal Feminism, is not sure about the solution of the problem through eradication of prostitution and through rehabilitation of the prostitutes. To them, the right option is to organize them and to give them workers' right. They hold that due to lack of equal opportunity in the workplace for women, prostitution exists to satisfy the survival need. Prostitution and other forms of sex work can be valid choices for women and men who choose to engage in it. The pioneer of this thought in India is Durbar Mahila Samanwaya Committee (DMSC), Kolkata. In this view, prostitution must be differentiated from forced prostitution, where some female and child are being trafficked for prostitution. Though, Libertarian Feminists may not al1 believe that prostitution is an ideal work, but they argue for the right of individual women workers to choose prostitution as another opportunity for legitimate work or occupation.

Mujtaba (2011) classifies the female sex workers into four categories according to his method of work. These four categories are – family-based, street-based, brothel-based and mobile sex workers. Pathways into sex work in India are 3-fold. First, many women are born into sex work as the family profession. The stigma associated with sex work, often coupled with residual caste system discrimination, severely limits educational and alternative economic opportunities. Second, many young women from rural areas and neighbouring countries (e.g., Nepal, Bangladesh) are deceived, sold, or otherwise trafficked into sex work against their will. Driven by the extreme poverty of their families and the lure of relatively large incomes as well as social stigma, some women are forced to return to sex work profession, once they are returned to their homes. Sex workers in Kolkata are conservatively estimated to earn an hourly wage almost twice than that of women in urban India (Rao et al., 2003). Finally, some women, given limited options, choose sex work as a means to support their families after being widowed, divorced or abandoned by their husbands. About 9 per cent of a random sample of sex workers in the Sonagachi red light area of Kolkata stated that they entered into the sex work profession voluntarily (Rao et al., 2003). While some sex workers are street-based, the majority work, and often live, in brothels clustered in red light areas of big cities and small towns.

Prostitution in India is not strictly illegal. According to the provision of the law (Immoral Traffic and Prevention Act, 1986 & Indian Penal Code, 1860), a woman can carry out prostitution on her own within her own private premises. Under such a situation, it would not be considered as criminal act. But there are some clauses that penalizing prostitution and all the persons attached with this trade, are as follows:

1) 'Prostitution' means the sexual exploitation or abuse of persons for commercial purpose and the expression 'prostitute' shall be construed accordingly (Section 2(f) of ITPA)
2) A sex worker being below 18 years of age (Section 2 of ITPA & Section 372 and 373of IPC)
3) Maintaining a brothel (Section 3 of ITPA)
4) Living on the earnings of prostitution (Section 4 of ITPA)
5) Procuring and detaining women for the sake of prostitution (Section 5 and 6 of ITPA & Section 372 and 373of IPC)
6) Prostitution anywhere near a public place (Section 7 of ITPA & Section 268 of IPC)
7) Seduction/solicitation of customer for prostitution (Section 8 of ITPA & Section 268 of IPC).

Thus, the definition itself makes prostitution illegal and any sexual activity can become illegal under the above mentioned sections of both the ITPA and IPC. The vague nature and drawbacks of the Act gave sex workers a criminal status. The sex worker activists have no problem with the main aim of ITPA where it avowedly aspires to prevent "immoral trafficking". But they found legal obstruction in the path of their recognition as workers due to ITPA. To them, in all sectors of labour market some human beings are trafficked and trafficked labour in the sex sector is a very small part of the total number of the trafficked labours. The conflation of sex workers and trafficked persons in the ITPA is untenable (Durbar Mahila Samanwaya Committee, 2006). The existing laws have failed to make difference between forced prostitution and prostitution by choice. Not only this, this group of activists is worried about the catastrophic consequences of ITPA on their sexual health. In the year 2006, they have marched to the Parliament demanding for the repeal of the ITPA. In that manifesto they demanded to put sex work in the occupation schedule of the Ministry

of Labour. They think that only then the STDs and the raging of HIV/AIDS can be successfully tackled otherwise, several generations of Indians will die due to the idiocy of a few (DMSC 2006).

1.8 HIV/AIDS and Female Sex Workers

Sex work is characterized by high rates of commercial sex partner exchange and low rates of consistent condom use with regular partners. Frequent sexual contacts with multiple clients, who will in turn carry the virus to their spouses, high rates of sexually transmitted infections and a scarce use of protection, are just a few factors that explain why commercial sex workers constitute one of the highest groups for HIV/AIDS infection. The sex industry is one of the factors driving the spread of HIV/AIDS epidemic in India as 89.7 per cent cases of HIV infection is through sexual intercourse (see Table-1.3)**.** The rates of HIV infection and transmission observed in FSWs are far in excess of the levels found in the general population.

Due to their HIV prevalence rate, FSWs are often branded as 'reservoirs' of the disease as their behaviour is often 'obvious', there is social stigma surrounding sex work and there is scientific evidence about the high rates of HIV infection in this vulnerable segment of the population (Sahasrabuddhe, & Mehendale, 2008). From various studies, it is revealed that adolescent female sex workers are more prone to certain sexually transmitted infections (STIs). One of the reasons for this increased susceptibility is the thin layer of cells (columnar epithelium) covering the cervix of a young female. As they become adults, this thin layer in largely replaced by a multilayered (squamous epithelium) covering, reduces the risk of infection compared with the single layer. Hidden sex workers are highly vulnerable due to their involvement in unsafe sexual practices and are at greater risk of contracting STIs, and HIV than the conventional sex workers. Globally, the face of sex work is dramatically changing with the mobility of the sex workers and the advances in technology. Newer forms of sex solicitation through newspapers, mobile phones, internet along with social networking sites, etc. have caught up in a major way in the form of non-brothel, non-street based and home based sex work. From the national and local newspaper it is found that private cars are also used for this purpose. These types of solicitations by FSWs have affected the traditional methods of sex work practice, where sex workers congregate at hotspots and wait for prospective clients. Now clients can directly

contact sex workers, as well as FSWs can contact their known clients directly which can form a closed sexual network with undisclosed sexual activity. The principal reasons for this shift in preference could be the fact that houses offer more security and safety to sex workers and their clients as compared to hotels, motels, parks, bars or parlours, where frequent raids and harassments are rampant.

As the global sex industry expands, male condoms are one of the few effective methods currently available for the prevention of HIV/STI infection. It is observable from various studies that the high level of awareness of HIV among the sex workers has not been sufficiently translated into practice. Many of them continue to engage in those behaviour and practices that increase their risk of infection with the disease. This high risk behaviour includes unprotected sex, multiple partnering and consumption of alcohol. The issue of 'special partners' is particularly noteworthy. However many FSWs speak about having limited control over the use of male condoms with their sex partners (Blanc, 2001). Women who have lower decision making power within relationships are less likely to use condoms than women with greater power. A meta-analysis of social power and normative support on condom use found that perceptions of condom use control generally had stronger association among members of societal groups with less power including females, younger individuals, ethnic minorities and those with less education (Albarracin et al., 2004). Research among sex workers in Tanzania found that when sex workers decided to use condoms on their own or jointly with partners or clients; they were significantly more likely to use condoms than when the partners or clients made the decision (Tassiopoulous et al., 2009). Among sex workers in India, a number of different types of power were associated with consistent condom use including control over the type of sex with clients, amount charged, and economic independence (Blankenship et al., 2008). Assuming that sex workers have as much access to condoms as needed and that clients do not react violently to the request of using condoms, it is the fact of the sex industry that sex without a condom still commands a markedly higher price, and research indicates that sex workers find this temptation hard to resist. As long as some segments of the industry offers clients unprotected sex, there will be pressure on the other sex workers to match the offer. With ‘unsupervised’ sex workers operating in the bars, hotels, and on the streets, enforcing condom use is impossible. As these women are working for themselves, the competition between different sex providers

and the client demand for unprotected sex makes it easy to ignore known, but distant risk in favour of the day's earnings. In fact, there is disturbing evidence emerging from the field studies that as long as there are clients willing to pay more for unprotected sex, the women are likely to make a conscious choice to bargain for unprotected sex for more money (Wojcicki, 2002). Apart from this, while sex workers agree (although not always practice) that condoms need to be used with paying clients, safe sex becomes much more complex when intimate regular customers are involved. The more intimate and personal the relationship is perceived to be, the harder it is to insist on the use of condoms. Another theme that emerges is that of their attitude to condoms in romantic relationships, is that there is a strong association in their minds between selling sex and conversely, between 'bare' sex and emotional needs. Varga (1997) reports that sex workers avoided using condoms in personal relationships due to their negative symbolisms-condoms were seen as suggestive of filth, disease identity and mistrust. Their awareness of HIV/AIDS had minimal impact on condom use not because of partner pressure always, but also because of sex workers' own decision not to use condom. Furthermore, the clandestine and spur of the moment, the nature of sex work makes the observation of precautions difficult and sex workers and their clients do not readily perceive these behaviour as being risky. Alcohol consumption has been shown to compromise sex workers' judgments and undermine their ability to negotiate safe sex (Malta et al., 2008). Taken together, these factors deepen sex workers' vulnerability to negative sexual health outcomes, including HIV infection. At the macro level, they speak to the fundamental issues of poverty, marginality and disempowerment which "continue to compel sex workers to redefine and reconstitute the meanings of risks in ways that increase their vulnerability to sexual and reproductive health dangers" (Izugbara, 2007).

FSWs' vulnerability to HIV/AIDS varies by country and is multidimensional. Like most settings in the developing world, sex work in India is neither legalized nor socially viewed as an acceptable vocation (Blanchard et al., 2005). This superficial nature of law and the perception of people toward the work of FSWs tend to push the trade and FSWs underground, thereby exposing them to several health related and social vulnerabilities. The public health and social implications of these vulnerabilities have multiple dimensions. First, FSWs get deprived of their right to have a steady married and/or family life and thus secure some health and economic

stability for themselves or for their children. Second, their risks for acquiring STIs, RTIs, HIV, etc. increases manifold. This risk is perpetuated to their male clients, starting off a vicious circle and a network of sexual transmission that usually propagates beyond the high-risk groups (Brahme et al., 2006). Third, the risks of other chronic diseases including cervical cancer and complications of pelvic inflammatory diseases (PID) including infertility are very high and may result in a large burden of morbidity and mortality among them. Another significant issue from the public health perspectives that the governmental health programs and services are predominantly directed at the general population and organized sectors and FSWs do not qualify to be classified in either. In fact, due to the clandestine nature of the profession, in the absence of special targeted programs, most FSWs do not often visit any healthcare provider until they are unfit to an extent of not being able to work and earn, i.e., until they are seriously ill with the complications of STI/HIV/AIDS or other chronic diseases. Thus, they continue to transmit infections for a long time and are seen in health care facilities only at a late stage of the disease, when palliative or supportive treatment is often the only available option. Violence against FSWs has received inadequate attention from researchers and practitioners alike. Only recently, studies around the world have highlighted FSW's experiences of harassment, physical violence, and rape in the context of HIV/AIDS research. Studies on FSWs in India have highlighted their multiple vulnerabilities stemming from independent solicitation of clients of street-based sex work that take places them at higher risks of violence, rape and exploitation, inability to negotiate safe sex and risk for sexually transmitted infections and HIV, especially in the context of alcohol use by males. Women who are inexperienced in the sex trade had significantly higher odds of being forced to have sex and performed unwanted sexual acts by clients who exerted more power in the context of illegal sex work in India (Panchanadeswaran et al., 2010). These problems were exacerbated in the context of alcohol use by clients, intimate partners, and sometimes FSWs themselves.

Tripura was once one of the most remote States of North East Region. With the rapid development in many sectors, investors along with professional job seekers, migrant workers – both inter-district and inter-state – are now moving towards this state. Now it is quite evident that migrant workers are also another high risk group and vulnerable to HIV/AIDS. Migrant workers and paramilitary forces detach from

family and some of them used to visit FSWs just to gratify their sexual needs and thereby increases the possibility of acquisition and transmission of HIV infection. Although there is no such clearly defined brothel or red light area in Tripura, but 5473 female sex workers have been estimated in the State, out of which 5188 have been covered by TIPs implementing NGOs under TSACS (see Table-1.12). According to TSACS, almost 90 per cent of female sex workers are carried out sex work from their respective home i.e. home-based. With the change of socio economic status and simultaneously thinking of financial independence, a section of female population involved themselves with sex work. Some have chosen this work out of psychological reason. Besides, with rapid occurrence of domestic violence, sexual harassment and many other crimes against women, many women are pushed into this profession. The adverse effect of electronic media and modern life style may be other reasons, which are influencing innocent teen aged school/college girls into this profession to meet the cost of their luxurious life style. Moreover, it is also found that not only they are pushed into this profession, but also forced to have unsafe sex to meet the clients' demand, thereby increasing the chances of HIV infection rates.

From the entire above context, it is seen that the detriment of FSWs to be vulnerable is deeply rooted in the complex social, cultural, political and legal issues. Due to social stigma and discrimination they are not coming out openly and are forced to hide their profession and throwing themselves in vulnerable condition in every aspect of their life. Many of them live behind the screen and accept their fate of being diverted from normal and live with an approach-avoidance conflict between private and public identities. They are often discriminated by their own families, health care providers, community workers and law enforcement. Apart from family, police, local goons and pressured group are also not leaving them. They often received verbal as well as physical harassment, rejection and negligence in every sphere of their life resulting of being mentally rapped too. In this condition, they often feel lonely and live with distress. It is not surprising, then, that so many TIPs of NACO through various NGOs focus on reaching women engaged in commercial sex work. Researchers suggested that sex workers need to be seen as more than their sexual behaviour as women, but who need to have their emotional, economic and physical needs addressed. To improve the chances of successfully communicating HIV prevention messages to this population, then it is necessary to investigate and

understand their feelings, beliefs, hopes, dreams and the thinking that goes into daily decisions they have to make. Hence initiating an in-depth study among Female Sex Workers in Tripura to understand all these factors in HIV/AIDS prevention and care is meaningful and realistic.