

CHAPTER III

PREVENTION OF PARENT TO CHILD TRANSMISSION PROGRAMME IN INDIA

3.1. Introduction

This chapter discusses counselling and testing programme in India; Prevention of Parent to Child Transmission programme in India; and profile of Odisha and selected districts. There are an estimated 2.39 million people living with HIV (PLHIV) in India with National Adult HIV Prevalence of 0.31 per cent. Of these, women constitute 39 per cent of all PLHIV, while 4.4 per cent are children (NACP-III, DAC, 2012). As on March 2012, 99,000 HIV positive children were registered under the antiretroviral therapy (ART) programme, 42,973 children ever started on Paediatric ART and 29,000 received free ART (DAC, 2012). There has been a significant scale up of HIV counselling and testing, Prevention of Parent-to-Child Transmission (PPTCT) and ART services across the country over last five years have progressed. Between 2004 and 2011, the number of pregnant women tested annually under the PPTCT programme increased from 0.8 million to 6.6 million and reach of the services has expanded to the rural areas to a large extent. Concurrently, there has also been a significant decentralization and scale-up of the ART services, with 5,16,412 persons receiving free ART across the country through 355 ART centres and 725 Link-ART centres (LAC) as on March 2012 (*Annual Report, 2012*, Department of AIDS Control).

Mother-to-child transmission of HIV is a major route of new infections in children. However, out of an estimated 27 million pregnancies in a year, only about 52.7 per cent attend health services for skilled care during child birth in India. Of those who availed health services, 8.56 million pregnant women received HIV counselling and testing by March 2012 (*National Guidelines for PPTCT, 2012*). To enhance this coverage, a joint directive from the National AIDS Control Programme (NACP) and the National Rural Health Mission (NRHM) regarding convergence of the two programme components was issued in July 2010, explicitly stating that universal HIV screening should be included as an integral component of routine ANC check-up. The objective was to ensure that pregnant women who were diagnosed with HIV would be linked to HIV services for their own health as well as to ensure prevention of HIV transmission to newborn babies under the PPTCT programme. Thereafter, HIV counselling and testing increased to 85,63,104 by March 2012.

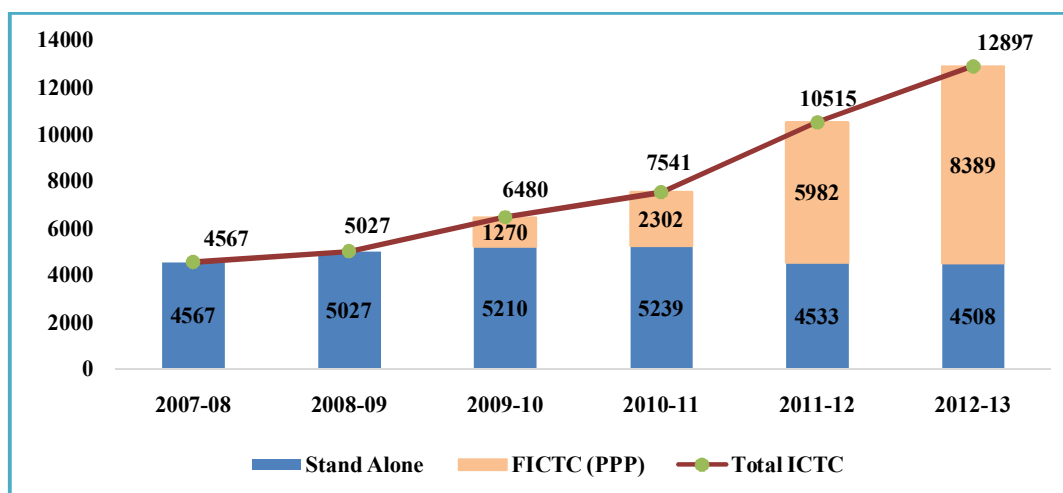
In the absence of any intervention, a substantial proportion of children born to women living with HIV, acquire HIV infection from their mothers either during

pregnancy, labour/delivery or during breast feeding. Without any intervention, the risk of transmission of HIV from infected pregnant women to their children is estimated to be around 20-45per cent. Use of ART and Single Dose of Nevirapine (sd NVP) to mother-baby pairs has shown to be effective in preventing this transmission to about 10 per cent.

3.2. Counselling and Testing Programme

Quality HIV counselling and testing is critical for achievement of prevention, care and treatment under the NACP. Integrated Counselling and Testing Centre (ICTC) is a place where a person is counselled and tested for HIV on his/her own volition (client initiated) or as advised by a health service provider (provider initiated). These centres are entry points for reinforcing HIV prevention messages and linking the HIV positive people to HIV care, support and treatment services. NACP ensures comprehensive pre-test and post-test counselling with HIV test reporting. HIV testing services are provided to clients who come voluntarily for counselling and testing, pregnant women for prevention of parent to child transmission, TB patients and provider initiated counselling and testing among other symptomatic patients. Overall the Integrated Counselling and Testing Centres (ICTCs) act like a hub, facilitating linkages between testing services with broader continuum of care and support services for those who need. HIV counselling and testing have been rapidly scaled up and are now provided through 4,508 stand alone ICTCs, 8,389 facility integrated ICTCs including those under Public-Private Partnership Model illustrated in Fig 3.1

Fig 3.1 Scale up of ICTCs during the period 2007-08 to 2012-13 (in number)

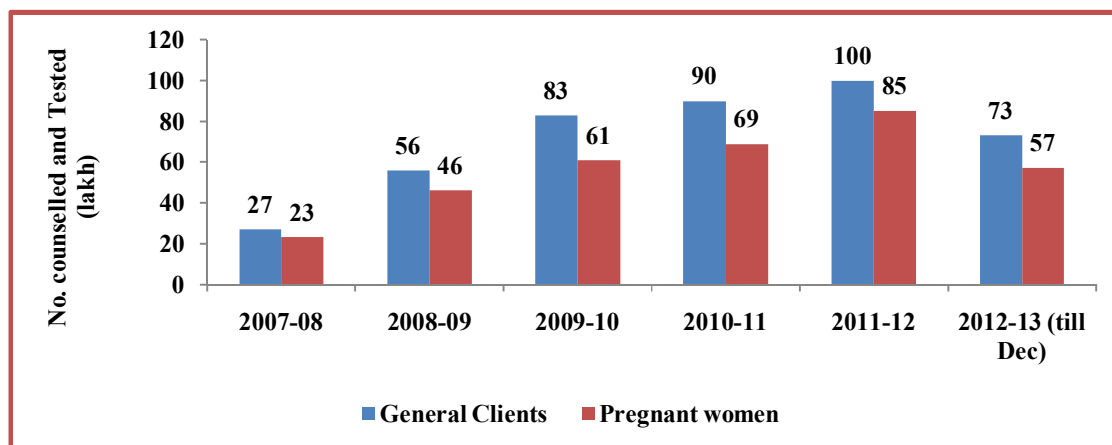


Source: Computerized Management Information System, NACO.

3.2.2 Scale up of counselling and testing services under NACP

The scale of counselling and testing services under this Programme have substantially increased from 2007-08 to 2012-13. In 2007-08 there were 27 lakh general clients and 23 lakh pregnant women who availed counselling and testing services annually whereas 73 lakh general clients and 57 lakh pregnant women were counselled and tested in 2012-13.

Fig 3.2 Scale up of Counselling and Testing Services from 2007-08 to 2012-13 (in lakh)



Sources: Counselling and Testing Services under NACP, NACO, Department of AIDS Control, 2013.

The number of general clients counselled, tested and identified as HIV positive for major states and Delhi during 2012-13 is shown in table 3.1. There were 73 lakh general clients counselled and tested for HIV and 2.45 per cent found HIV positive during this period. Andhra Pradesh stood for highest HIV positivity (4.52 per cent), followed by Bihar (3.76 per cent), Maharashtra (3.45 per cent), Manipur (3.24 per cent) and Karnataka (3.05 per cent). In Odisha, 1.98 lakh general clients counselled and tested for HIV and 2,413 (1.22 per cent) found HIV positive.

Table 3.1 State-wise number of general clients counselled and tested for HIV and zero-positivity during 2012-13 (January 2013 to December, 2013)

State/UT	No. of general clients counselled and tested for HIV	No. of general clients tested HIV positive	HIV positivity (per cent)
Andhra Pradesh	9,19,755	41,588	4.52
Arunachal Pradesh	11,065	12	0.11
Assam	75,385	772	1.02
Bihar	1,95,529	7,353	3.76
Chhattisgarh	57,908	989	1.71
Delhi	2,24,322	5,253	2.34
Goa	23,262	369	1.59
Gujarat	3,88,523	6,849	1.76
Haryana	1,90,965	3,074	1.61
Himachal Pradesh	79,929	480	0.61
Jammu & Kashmir	22,506	215	0.96
Jharkhand	1,04,785	1,649	1.57
Karnataka	8,37,806	25,549	3.05
Kerala	2,28,028	1,336	0.59
Madhya Pradesh	2,76,121	3,582	1.31
Maharashtra	11,22,514	38,705	3.45
Manipur	42,548	1,380	3.24
Meghalaya	10,733	229	2.13
Mizoram	28,683	803	2.81
Nagaland	55,038	1,166	2.12
Odisha	1,98,268	2,413	1.22
Puducherry	31,597	532	1.68
Punjab	1,59,868	3,493	2.18
Rajasthan	2,41,845	4,597	1.91
Sikkim	14,471	40	0.28
Tamil Nadu	9,83,799	10,600	1.08
Tripura	30,306	130	0.43
Uttar Pradesh	4,07,937	9,675	2.37
Uttarakhand	1,04,391	1,201	1.15
West Bengal	2,165,03	4,832	2.23
Total	73,25,363	1,79,617	2.45

Sources: National AIDS Control Programme, 2013, Department of AIDS Control, NACO.

3.3. Prevention of Parent to Child Transmission of HIV Programme (PPTCT)

Mother-to-child-transmission of HIV is a major route of HIV infection in children. However, out of an estimated 27 million pregnancies in a year, only about 52.7 per cent attend health services for skilled care during child birth. Of those who availed health services, 8.83 million ANCs received HIV counselling and testing out of which 12,551 pregnant women were detected to be HIV positive (NACO, 2013). To enhance this coverage, a joint directive from the NACP and the NRHM regarding convergence of the two programme components was issued in July 2010, explicitly stating that universal HIV

screening should be included as an integral component of routine ANC check-up. The objective of this programme was to ensure that pregnant women who are diagnosed with HIV would be linked to HIV services for their health as well as to ensure prevention of HIV transmission to newborn babies under the PPTCT programme. The latter programme involves counselling and testing of pregnant women, detection of positive pregnant women and the administration of ARV prophylaxis to HIV positive pregnant women and their infants to prevent the mother to child transmission of HIV. The National PPTCT programme recognizes four elements integral to preventing HIV transmission among women and children. They are:

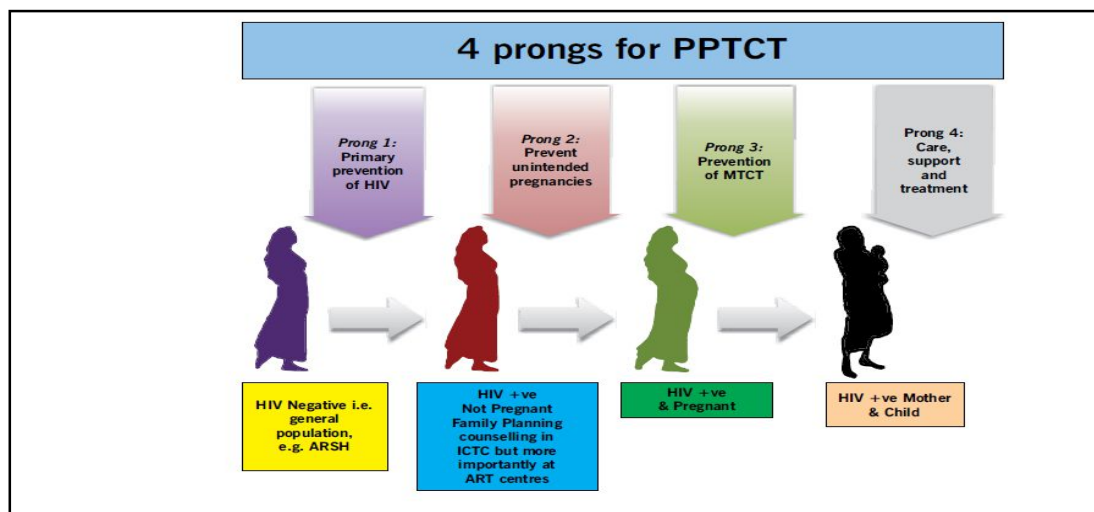
Prong 1. Primary prevention of HIV, especially among women of child bearing age.

Prong 2. Preventing unintended pregnancies among women living with HIV.

Prong 3. Prevent HIV transmission from pregnant women infected with HIV to their child.

Prong 4. Provide care, support and treatment to women living with HIV, her children and family.

Figure 3.3. Four prongs for PPTCT



3.3. A. Goals of National PPTCT programme are:

- Primary prevention of HIV, especially among women in child-bearing age.
- Integration of PPTCT interventions with general health services such as basic Antenatal Care (ANC).

- Sexual Reproductive Health and Family Planning, EID, Paediatric ART and Adolescent Reproductive.
- Sexual Health (ARSH), TB and STI/RTI services.
- Strengthening post-natal care of the HIV-infected mother and her exposed infant.
- Provide the essential package of PPTCT services.

3.3. B. PPTCT services under NACP

Under the NACP, HIV related services are provided through public and private health care providers, depending on the programme need and availability of health infrastructure, human resources and their expertise.

PPTCT Services provided through ICTCs which are provided are of the following types:

- 1. Stand Alone ICTCs:** These are HIV counselling and testing facilities supported by NACPT in the form of staff (counsellor and lab tech) and necessary logistic support. These centres perform confirmatory tests for HIV. They are located in medical colleges, district hospitals, taluk hospitals and community health centres.
- 2. Facility Integrated ICTCs (FICTCs):** These are facilities where the staff – (staff nurses and lab technicians) from existing health facilities are trained in counselling and testing, and service delivery is ensured with provision of HIV testing kits from the NACP. These centres perform only screening test for HIV using Rapid HIV test kits and any client found positive on screening is referred to stand-alone ICTC for confirmation. Typically these centres are located at PHCs. The private/NGO facilities also function under this model.
- 3. Screening Centres:** These are health facilities where the auxiliary nurse midwives (now called junior health assistants (F)) from existing health facilities are trained in counselling and screening for HIV through whole blood finger prick test. These centres perform only screening test for HIV through whole blood finger prick test (WBFPT) and any client found positive is referred to Stand-Alone ICTCs for confirmation. They are located at PHCs and Sub-Centres. The five tier structure of public health system and HIV related services at different levels is detailed below in the Table 3.2

Table 3.2 HIV services at different levels of health facilities

Level of health infrastructure	Available HIV facilities	Available HIV services
Medical College	Stand Alone ICTC, ART Centre, Centre of Excellence (CoE) in HIV care, Centre of Excellence (CoE) Pediatric in HIV care, and Blood Bank	ICTC, PPTCT, HIV-TB, ART including ART, Opportunistic Infection (OI), Sexual Transmitted Infection (STI), Early Infant Diagnosis (EID)
District Hospital	Stand Alone ICTC, ART Centre, Link ART Centre, Blood Bank	ICTC, PPTCT, HIV-TB, ART, OI, STI, EID services, Linkages to District Level Networks (DLN)/Drop-in- Centre (DIC) for psycho-social support and services
Sub-district/Community Health Centre	Stand Alone ICTC, Facility ICTC, ART/Link -ART Centre Blood storage centre	ICTC / HIV Screening, PPTCT, HIV-TB, ART, OI, STI, DIC, EID Services
Primary Health Centres/24x7 PHCs	Stand-Alone ICTCs, Facility integrated ICTC	HIV Screening, PPTCT, HIV-TB, STI
Sub-Centres	Screening Centre (Whole Blood Finger Prick Test)	HIV Screening Test

Source: Prevention of Parent to Child Transmission (PPTCT) of HIV using Multi-Drug Anti-retroviral Regimen in India, NACO, 2013.

3.4. Components of PPTCT Programme

The PPTCT services provide access to all pregnant women for HIV diagnostic, prevention, care and treatment services. As such, the key goal is to ensure the integrated PPTCT services delivery with existing Reproductive & Child Health (RCH) programme. The essential package of PPTCT programme is illustrated in Box 3.1 and flow of services is illustrated in figure 3.4.

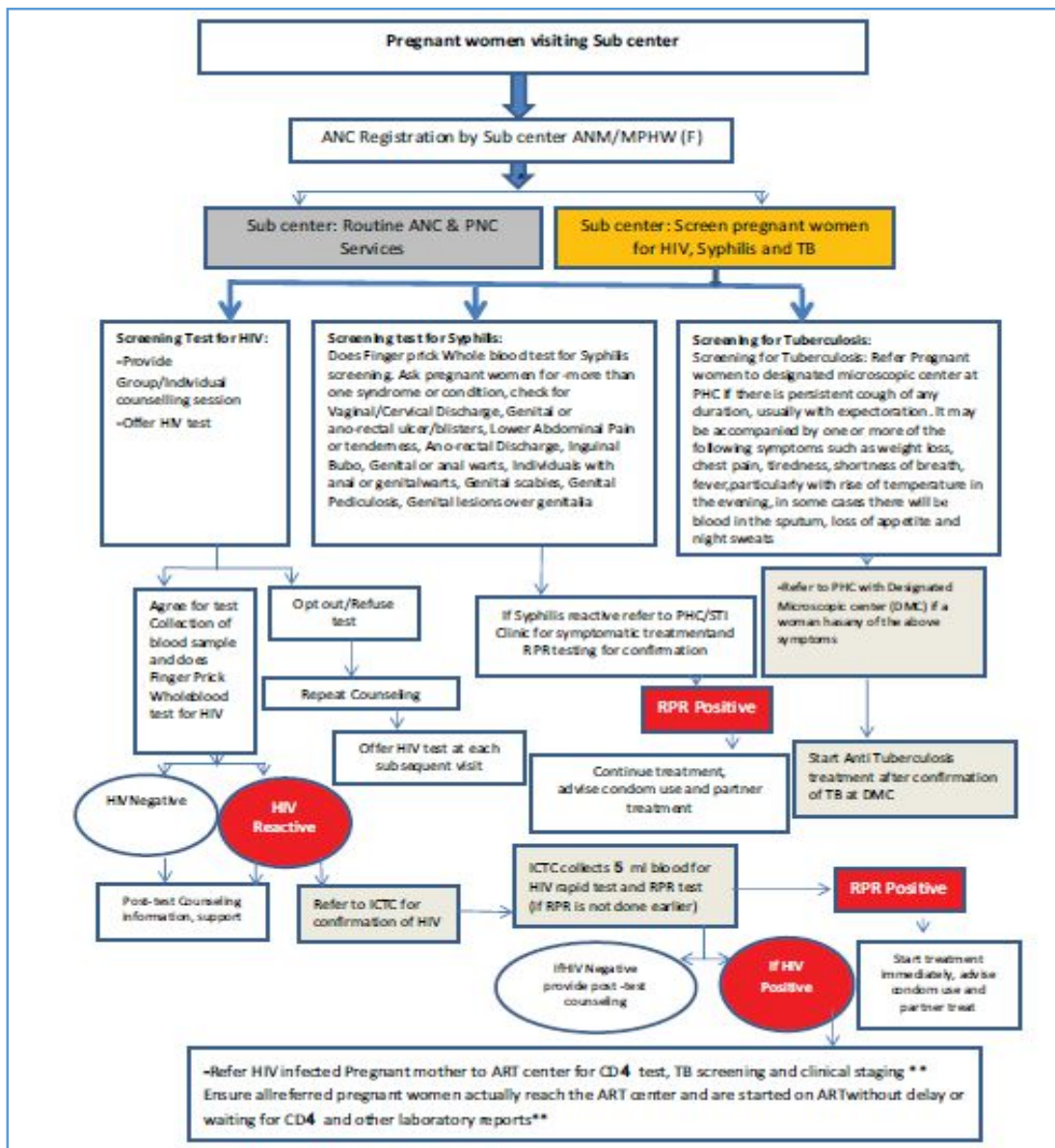
Box 3.1. Essential package of PPTCT services
<ul style="list-style-type: none"> • Routine offer of HIV counselling (Group/Individual counselling) and testing of all pregnant women attending ante-natal care, with ‘opt out’ option. • Ensure involvement of spouse & other family members and move from an “ANC centric” to a “Family centric” approach. • Provide ART to all HIV infected pregnant women regardless of WHO staging and CD4 count results. Preferred regimen is TDF+3TC+ EFV. • Promote institutional delivery for all HIV infected pregnant women (ANMs/ASHAs, Community workers to accompany to institutions; reduction of stigma and discrimination amongst health care providers through sensitisation and capacity building).

Box 3.1. contd...

- Provision of care for associated conditions (STI/RTI, TB & other Opportunistic Infections (OIs).
- Provide nutrition counselling and psychosocial support for HIV infected pregnant women (Linkages with ANM, ASHAs, Community outreach workers, DLNs to advise them on the right foods to take and to go to Anganwadi Centres for nutritional support and to the district level network of Positive People for peer counselling and psycho-social support).
- Provide counselling and support for initiation of exclusive breastfeed within an hour of delivery as the preferred option and continue for months. After that complementary feeding should be given along with breast feeding. A small number of babies born to HIV infected mothers who have serious illness or have died and a few reluctant mothers (who at their own risk despite counselling) may decide not to breastfeed but adopt Exclusive Replacement Feeding (ERF).
- Provide antiretroviral prophylaxis to infants from birth up to a minimum period of weeks.
- Integrate follow-up of HIV-exposed infants (HEIs) into routine healthcare services including immunization.
- Ensure initiation of Co-trimoxazole Prophylactic Therapy (CPT) and Early Infant Diagnosis (EID) using HIV DNA PCR at weeks of age onwards as per the EID guidelines.
- Strengthen follow-up and outreach through ANMs, ASHAs and district level networks and other outreach workers to support HIV infected pregnant women and their families.

Source: Prevention of Parent to Child Transmission (PPTCT) of HIV using Multi-Drug Anti-retroviral Regimen in India, NACO, 2013.

Figure 3.4. HIV counselling and testing services to pregnant women in the ANC



Source: PPTCT of HIV using Multi-Drug Anti-retroviral Regimen in India, NACO, 2013.

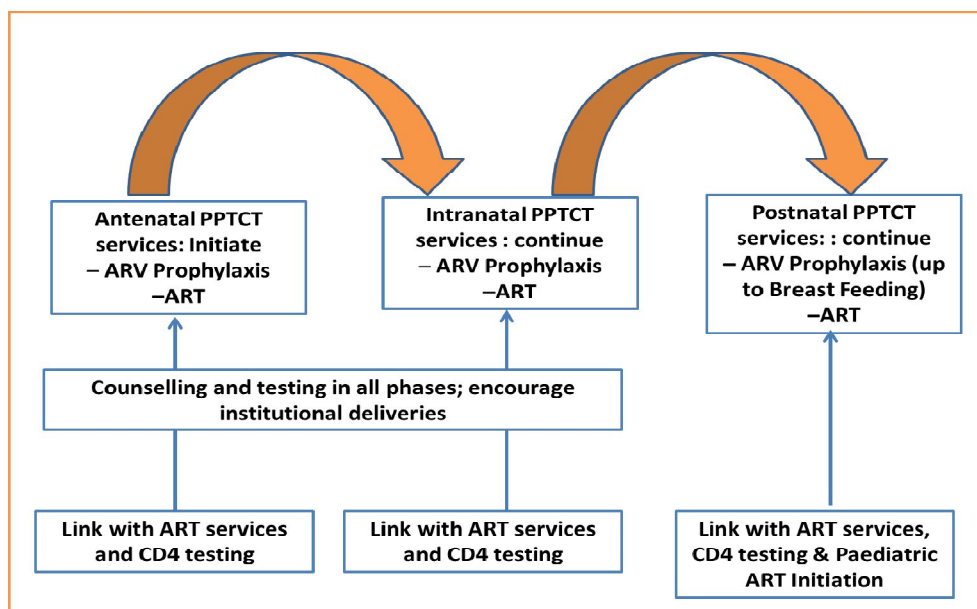
3.5. Continuum of care under PPTCT

NACP provides continuum care to the positive mothers and their infants through implementing PPTCT-ART linkages, early infant diagnosis and paediatric ART services, etc.

The continuum of care involves the following steps under National PPTCT Programme:

1. Increasing uptake of PPTCT services by pregnant women.
2. Counselling and testing of pregnant women as an integral part of ANC comprehensive services package.
3. Detection of HIV infected pregnant women.
4. Linking HIV infected pregnant women to care, support and treatment services.
5. Initiating ART to all HIV infected pregnant women who require it for their health as per guidelines (CD4<350 or WHO Stage III and IV irrespective of CD4 count).
6. Initiating ARV Prophylaxis for all HIV infected pregnant women who do not require ART for their health.
7. Counselling on birth planning and institutional delivery of identified HIV infected pregnant women.
8. Screening emergency labour room deliveries (un-booked cases) for HIV. If positive, providing ART (Sd of Nevirapine at onset of labour. AZT+3TC 12 hourly till 7th postpartum day); Sending sample for CD4 testing and initiating ART as soon as possible, if eligible.
9. Linking of HIV infected pregnant women identified through emergency labour room care services to care, support and treatment services.
10. Provision of Syrup Nevirapine for the new born infant from birth till six weeks of age. At the end of six weeks CPTT should be initiated and baby to be linked to the EID programme. CPTT continued to baby from six weeks up to 18 months or until the confirmatory test of the baby is done using all three rapid tests.
11. If the infant is detected positive in EID programme (DBS+WBS), then ensure initiation of Pediatric ART for the baby through ART centre as per ART guidelines.
12. Follow-up of HIV infected mother and baby until breast feeding period is over at six weeks of age of baby, do DBS and confirm with WBS. If the age of baby is >6 months, then do anti-body (rapid) test first and if found positive then only DBS and WBS should be done for confirmation. After confirmation of HIV infection, start Paediatric ART.
13. Confirmation of diagnosis of child through all the three anti-body tests at ICTCs at 18 months of age or six weeks after cessation of breast feeding.
14. No DBS and WBS tests to be done at 18 months or later.

Figure 3.5. Continuum care for HIV infected pregnant women



Sources: National Guidelines for Prevention of Parent to Child Transmission of HIV, Department of AIDS Control, 2012.

3.6. Infant feeding practices

More than 50 per cent of children under five years of age have malnutrition. NFHS-3, 2005-06 data show that overall 57 per cent of women of child-bearing age (both urban and rural) have anaemia with 30 per cent of infants born being underweight. Growth retardation in young children starts during pregnancy and is irreversible by the age of two years, if not corrected. But especially in rural areas, where women often go back to the fields a few days after giving birth, babies’ diets are often supplemented with cow’s milk and water which exposes them to infection. The infant feeding guidelines for HIV exposed and infected infants aged 0 to six months are given Box 3.2.

Box 3.2. Recommendations for infant feeding in HIV exposed infants <6 months of age
<ul style="list-style-type: none"> • Exclusive breast feeding for at least six months. • Only in situations where breast feeding cannot be done (maternal death, severe maternal illness, etc.) or individual mother’s choice (at her own risk), then exclusive replacement feeding may be considered. • Exclusive replacement feeding should be done only when AFASS criteria are fulfilled (A – Affordable F – Feasible A – Acceptable S – Sustainable S – Safe).

Source: National Guidelines for Nutrition of HIV affected and infected infants and children, 2011, Department of AIDS Control, NACO.

3.7. Principles of infant feeding for HIV infected pregnant women

There are ten principles of infant feeding options for HIV infected pregnant women and their infants as illustrated in Box 3.3 and AFASS criteria for Exclusive Replacement Feeding in Box 3.4.

Box 3.3. Principles of infant feeding	
1.	All HIV infected pregnant women should have PPTCT interventions provided early in pregnancy as far as possible.
2.	Exclusive breast feeding is the recommended infant feeding choice in the first six months, irrespective of the fact that mother is on ART early or infant is provided with ARV prophylaxis for six weeks.
3.	Mixed feeding should not be done at any cost within the first six months (feeding breast-feeds and replacement feeds simultaneously in the first six months).
4.	Only in situations where breast feeding cannot be done or on individual parents' informed decision, then replacement feeding may be considered if AFASS criteria for exclusive replacement feeding are fulfilled.
5.	Exclusive breast feeding should be done for at least six months after which complementary feeding should be introduced gradually, irrespective of whether the infant is diagnosed HIV negative or positive by EID.
6.	Mother should be receiving ART during the duration of breast feeding (remember it is lifelong ART for the mother).
7.	For breast feeding infants diagnosed HIV negative, breast feeding should be continued until 12 months of age ensuring the mother is on ART as soon as possible.
8.	The EID is repeated for the third time (when previous two EIDs have been negative) after six weeks of stopping breast feeds, repeat EID, i.e., rapid test followed by DBS (if rapid test turns positive) If DBS is positive, do a WBS test. If WBS test is positive, Paediatric ART should be initiated in ART centre. However, confirmation test for HIV has to be done at 18 months using three rapid tests for all babies irrespective of the earlier EID status or the fact that Paediatric ART has already been initiated.
9.	For breast feeding infants who have been diagnosed HIV positive, paediatric ART should be started and breast feeding continued ideally until the baby is two years old.
10.	Breast feeding should stop once a nutritionally adequate and safe diet without breast milk can be provided.

Source: National Guidelines for Nutrition of HIV affected and infected infants and children, 2011, Department of AIDS Control, NACO

3.8. AFASS criteria for exclusive replacement feeding

Mothers known to be HIV-infected, if insist on opting for exclusive replacement feeding which is contrary to the WHO/NACO's guidelines of giving exclusive breastfeeds for first six months, are doing so, it is at their own risk. They should be counselled not to give any breast feeds during the first six months. Mixed feeding should not be done during the first six months. (Feeding a baby with both breast feeds and replacement feeds in the first six months is known as mixed feeding which leads to mucosal abrasions in the gut of the baby facilitating HIV virus entry through these abrasions).

Box 3.4 AFASS criteria for exclusive replacement feeding
<ol style="list-style-type: none">1. Safe water and sanitation are assured at the household level and in the community, and clean feeds can be prepared.2. The mother or other caregiver can reliably afford to provide sufficient replacement feeding (milk), to support normal growth and development of the infant, and can sustain it un-interruptedly for first six months at least.3. The mother or caregiver can prepare it frequently enough in a clean manner so that it is safe and carries a low risk of diarrhoea and malnutrition.4. The mother or caregiver can in the first six months exclusively give replacement feeding.5. The family is supportive of this practice, and accepts it without forcing the mother to breast feed during the first six months.

Source: National Guidelines for Nutrition of HIV affected and infected infants and children, 2011, Department of AIDS Control, NACO

3.9. Performance of PPTCT programme

The uptake of services under PPTCT programme for the year 2012-13 is given below. There were a total of 57 lakh pregnant women counselled and tested for HIV, of whom 9,451 were detected as HIV positive, and 9,108 HIV positive pregnant women received mother and baby pairs of prophylaxis (single dose of Nevirapine) during 2012-13. The highest number of HIV positive cases were identified in Andhra Pradesh (2,120) followed by Maharashtra (1,900) and Karnataka (1,388). There were 1.82 lakh pregnant women who were counselled and tested for HIV in Odisha. Of them, 202 were identified as HIV positive with the positivity of 0.11 per cent.

Table 3.3 State wise performance of the PPTCT Programme during 2012-13

State/UT	No. of pregnant women counselled and tested for HIV	No. of pregnant women testing HIV positive	Positivity (per cent)	No. of Mother-Baby pairs receiving Nevirapine
Andhra Pradesh	7,03,928	2,120	0.30	1,979
Arunachal Pradesh	5,954	1	0.02	0
Assam	1,39,233	85	0.06	65
Bihar	1,68,214	261	0.16	178
Chhattisgarh	44,002	83	0.19	53
Delhi	1,54,431	250	0.16	234
Gujarat	2,77,609	440	0.16	430
Haryana	1,25,794	178	0.14	70
Himachal Pradesh	33,519	21	0.06	3
Jharkhand	66,288	62	0.09	36
Karnataka	6,12,916	1,388	0.23	1,385
Kerala	96,199	50	0.05	63
Madhya Pradesh	3,28,304	229	0.07	162
Maharashtra	8,33,213	1,900	0.23	2,115
Manipur	35,446	126	0.36	163
Meghalaya	11,938	40	0.34	15
Mizoram	14,966	89	0.59	109
Nagaland	13,844	116	0.84	112
Odisha	1,82,293	202	0.11	147
Puducherry	22,311	11	0.05	18
Punjab	1,56,068	203	0.13	156
Rajasthan	2,67,804	257	0.1	248
Sikkim	6,277	5	0.08	1
Tamil Nadu	5,92,821	510	0.09	784
Tripura	17,041	13	0.08	9
Uttar Pradesh	3,23,996	336	0.1	264
Uttarakhand	89,205	74	0.08	19
West Bengal	3,19,683	337	0.11	228
Total	57,09,691	9,451	0.17	9,108

Sources: National AIDS Control Programme, 2013, Annual Report, Department of AIDS Control.

3.10. HIV/AIDS situation in Odisha

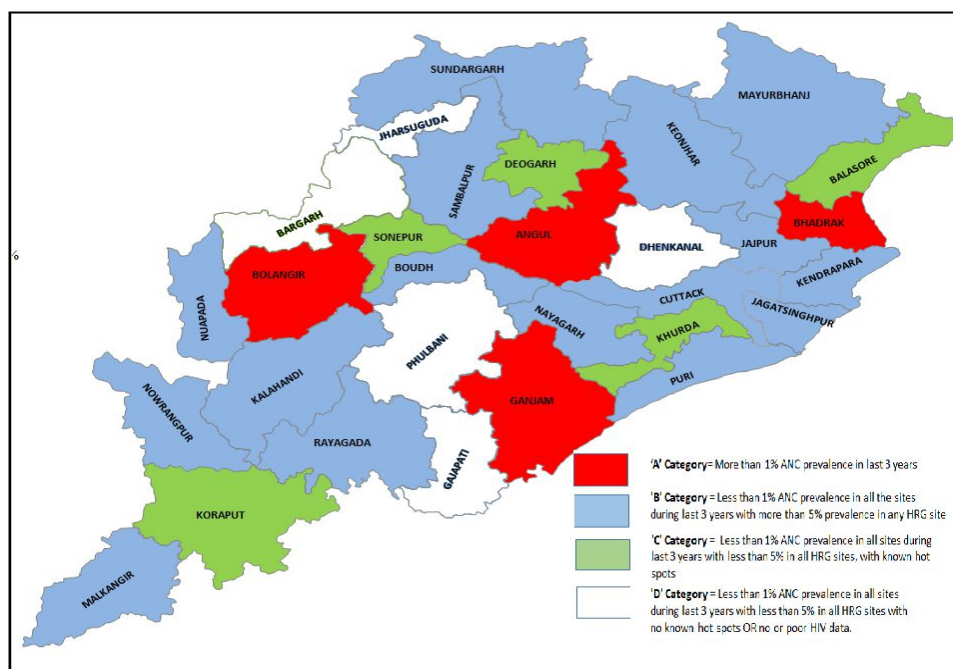
Odisha has been implementing the NACP through State AIDS Control Society since 1992. The first HIV infection was reported in the state in 1992 and first reported death due to AIDS was in 1993. Cutting across geopolitical settings, age, sex and regional barriers, HIV/AIDS has now been reported from all districts and various high risk groups. Even though Odisha is placed in low HIV prevalence category by National AIDS Control Organization (NACO), it is a highly vulnerable state. It considered vulnerable for the

spread of HIV infection because of factors such as a large migrant population, large-scale developmental projects such as mining industries, hydroelectric and irrigation projects, low literacy level especially among women, rapid urbanization and industrialization.

The HIV/AIDS control programme at state level is in operation since 1992. The first phase of National AIDS Control Programme (NACP-I) from 1992-97 was directly implemented through Directorate of Health Services and NACP Phase-II (1997-2004) in the name of State AIDS Cells (SAC) under the Department of Health & Family Welfare, Government of Orissa. The Orissa State AIDS Control Society (OSACS) was finally formed in July 2004 and registered under Societies' Registration Act of 1860, in which the Minister of Health & Family Welfare, Government of Orissa is the president and Chief Secretary of Orissa is the vice-president. The Project Director of the Society is the member-secretary whereas the Commissioner-Cum-Secretary to Government, Health and Family Welfare is the president of the Executive Committee.

Under NACP-III, Voluntary Counselling and Testing Centre (VCTC) and Prevention to Parent to Transmission Centre (PPTCT) were integrated for single window service and ICTCs were made functional. As per the district categorization by NACO, four districts (Anugul, Bolangir, Bhadrak and Ganjam) fall into 'A' category (High Prevalence) where more than 1 per cent ANC prevalence in any site in the last 3 years was reported. Three districts (Baleswar, Khordha and Koraput) fall into 'B' category where less than 1 per cent of ANC in all sites and more than 5 per cent prevalence in any High Risk Groups (HRG) sites last 3 years were reported. Eighteen districts fall in to category 'C' (where less than 1 per cent ANC prevalence in all sites during last three years with less than 5 per cent in all HRG sites, with known hot spots (migrants, truckers, large aggregation of factory workers, tourists, etc.) were reported. Five districts under 'D' category (less than 1 per cent ANC prevalence in all sites during last three years with less than 5 per cent in all HRG sites with no known hot spots or no or poor HIV data were reported. The district categorization as per the NACP is illustrated in Figure.3.6.

Figure 3.6 District categorization as per NACP



The ICTC services were made available at medical colleges, district headquarters hospitals, sub-divisional head-quarters hospitals, CHCs and Block PHCs. The A & B category districts were given first priority to open ICTC till CHC level. There are in all 38 STI clinics, 53 targeted intervention programmes, 410 ICTCs (Stand alone ICTCs-227, FICTC169, Public-Private Partnership (PPP) 14, 9 ART centres, 25 Link ART Centres and 61 blood banks functioning in the state (NACO, *State Fact sheet, 2013-14*). The following table shows the HIV/AIDS scenario of Odisha.

Table 3.4 HIV scenario in Odisha

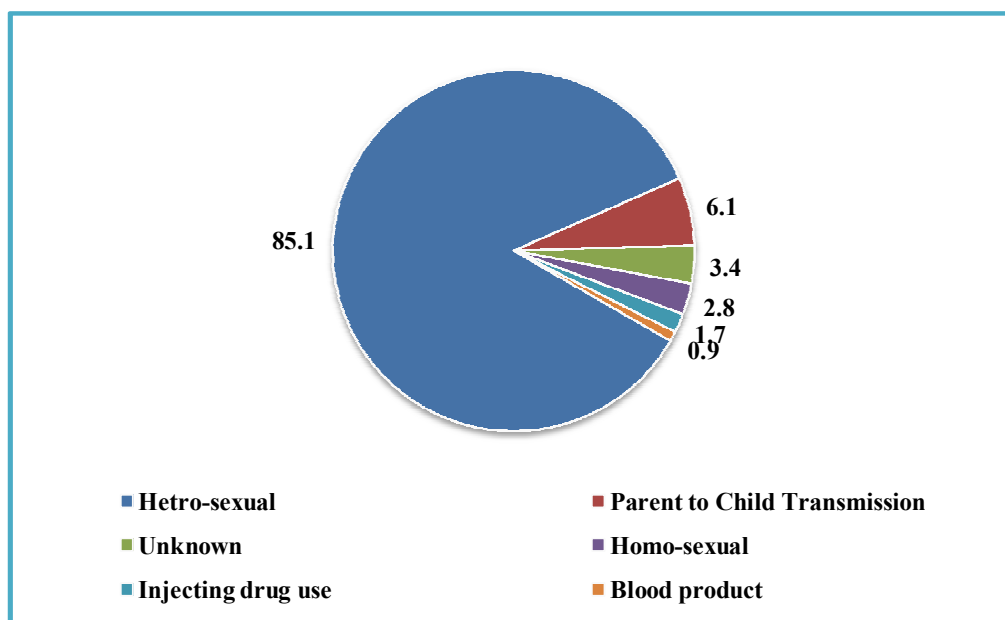
Particulars	2008	2009	2010	2011	2012	2013	2014*
Persons counselled	387665	435127	336854	333343	350335	323922	78545
Persons tested	231015	335395	207234	247381	279171	272129	67631
Persons identified HIV +ve	3635	4020	3590	3593	3462	3255	706
AIDS cases	133	308	131	65	41	44	9
Death cases due to AIDS	133	297	127	65	40	44	9

Source: Odisha State AIDS Control Society, * upto March, 2014

The above table shows that the number of persons counselled, tested and identified as HIV positive during the period of 2008-2014. As many as 16.39 lakh persons were counselled and tested for HIV during 2008-14. Of those, 22,261 persons were identified as HIV positive with an average of 3592 HIV positive cases annually. There were 715 AIDS related deaths during the period. According to the HIV estimates 2011, adult HIV prevalence in Odisha is 0.40 per cent and the estimated number of people living with HIV/AIDS is 1,03,859 (of which 62,394 are males and 41,465 females) (HIV estimation, 2012). There were 4,815 children living with AIDS in 2011. There were 12,703 new infections reported annually and 6,330 AIDS related deaths reported in 2011 (NACO *State Fact sheet, 2013-14*).

Information from persons testing positive for HIV at the ICTCs across the state during 2014-2015 shows that 85.1 per cent of HIV infections still occur through heterosexual route of transmission. While parent to child transmission accounts for 6.1 per cent of HIV cases detected, men who have sex with men (2.8 per cent), injecting drugs (1.7 per cent), and using contaminated blood and blood products account for 1.1 per cent (Fig 3.7).

Figure 3.7 Routes of transmission of HIV, 2014-15



Source: Odisha State AIDS Control Society, SIMS, 2014-15.

The district-wise scenario of HIV/AIDS is presented in Table 3.10.2. As on 31st March, 2014, 31,530 (general and ANC) cases were identified as HIV positive and 1410 AIDS related deaths reported. Among the districts, Ganjam contributed 36 per cent of HIV cases and 32 per cent of deaths reported.

Table 3.5 District-wise HIV/AIDS scenario in Odisha on 31st March, 2014

S. N.	Districts	HIV +ve			Per cent	AIDS cases	Per cent	Death due to AIDS	Per cent
		General	ANC	Total					
1	Angul	986	97	1083	3.4	66	4	62	4.4
2	Balangir	680	48	728	2.3	59	3.6	59	4.2
3	Balesore	917	55	972	3.1	56	3.4	56	4
4	Bargarh	424	35	459	1.5	9	0.6	9	0.6
5	Baudh	23	4	27	0.1	4	0.2	4	0.3
6	Bhadrak	586	42	628	2	78	4.8	76	5.4
7	Cuttack	4051	76	4127	13.1	119	7.3	46	3.3
8	Deogarh	53	11	64	0.2	2	0.1	2	0.1
9	Dhenkanal	207	19	226	0.7	18	1.1	16	1.1
10	Gajapati	587	64	651	2.1	7	0.4	6	0.4
11	Ganjam	10840	586	1426	36.2	514	31.5	444	31.5
12	Jagatsinghpur	163	15	178	0.6	18	1.1	18	1.3
13	Jajpur	353	17	370	1.2	52	3.2	50	3.5
14	Jharsuguda	190	18	208	0.7	13	0.8	11	0.8
15	Kalahandi	556	14	570	1.8	6	0.4	6	0.4
16	Kandhamal	81	5	86	0.3	17	1	14	1
17	Kendrapara	307	29	336	1.1	75	4.6	74	5.2
18	Keonjhar	301	16	317	1	6	0.4	6	0.4
19	Khurda	1387	70	1457	4.6	56	3.4	48	3.4
20	Koraput	1665	83	1748	5.5	159	9.7	149	10.6
21	Malkangiri	165	10	175	0.6	11	0.7	6	0.4
22	Mayurbhanj	531	50	581	1.8	30	1.8	27	1.9
23	Nabrangpur	622	25	647	2.1	22	1.3	20	1.4
24	Nayagarh	690	31	721	2.3	9	0.6	8	0.6
25	Nuapada	355	11	366	1.2	19	1.2	19	1.3
26	Rayagada	628	19	647	2.1	73	4.5	66	4.7
27	Sambalpur	609	43	652	2.1	67	4.1	52	3.7
28	Sonepur	1469	56	1525	4.8	39	2.4	33	2.3
29	Sundergarh	60	3	63	0.2	0	0	0	0
30	Odisha	460	32	492	1.6	28	1.7	23	1.6
	Total	29946	1584	31530	100	1632	100	1410	100

Source: Odisha State AIDS Control Society, 2014.

3.11. Socio-economic, demographic and health profiles of selected districts

Socio-economic, demographic and health profiles of Ganjam, Khordha and Cuttack districts are given below.

3.11.1. A. Ganjam District

In the ancient past the present district Ganjam was a part of Khinjili Mandal of the Kangoda Kingdom. At another point of time this area also formed a part of ancient Kalinga kingdom which was conquered by Ashoka. Subsequently it came under the Guptas, Bhoumkars, Bhanjas, Gangas and Gajapatis. The Marathas extended their supremacy over it. Then it became a French jagir. During the second half of the nineteenth century the British rule was consolidated in Ganjam.

Ganjam district got its name from the word "Ganj-i-am" which means the "Granary of the World". It is situated in the coastal region of the state, broadly divided into two natural divisions, i.e., coastal plains in the east and hills, and lands in west. The eastern and northern frontiers of coastal plains are covered with thick forests, mostly containing Sal wood. Towards the centre and south it is hilly with beautiful well watered and fertile valleys extending towards the sea. The south-eastern part is fertile and contains multi-cropped areas, well served by major and minor irrigation projects. The extreme south-east is occupied by Chilika Lake, the largest fresh/saline water lake of Asia, its immediate vicinity being good for fishery and salt manufacturing.

3.11.1. B. Administrative and demographic profiles

The district is comprised of Municipal Corporation, three Sub-Divisions, 22 CD Blocks, 23 Tehsils, 475 Gram Panchayats, 3250 villages (2838 inhabited and 412 uninhabited). Its total population was 35.29 lakh in 2011 with 17.79 lakh males and 17.49 lakh females and 78 per cent of the population lived in rural areas. The population growth rate during the decade 2001-2011 was 11.7 per cent. About 20 per cent of population was composed of scheduled castes and 3.4 per cent of scheduled tribes. Moreover, 71 per cent population was literate in the age group seven years and above. Gender difference in literacy rate shows that 61 per cent of females were literate as compared with 81 per cent males. Population density was 430. There were 983 females per 1000 males, whereas there were 908 girls per 1000 boys in the age group of 0-6 years.

3.11.1. C. Health indicators

The health infrastructure of the district consists of a medical college, district hospital, two sub-divisional hospitals, 30 community health centres, 95 primary health centres and 460 sub-centres. There are 26 ICTC Centres and PPTCT Centres, two ART Centres, three STI/RTI Clinics designated for providing counselling and testing services. As per the AHS, 2012-13, 87 per cent of deliveries took place at the health facilities. Forty-four infants died under one year of age (AHS, 2012-13), Neo-natal mortality rate was 35 and under-five mortality rate was 87 during 2012-13. There were 24 per cent children aged (6-35 months) exclusively breastfed for at least six months.

3.11.1. D. HIV/AIDS scenario

The district is characterized by high male out-migration to other states because of lack of employment opportunities and urbanization. The largest proportion of out-migrants migrated to Gujarat (mainly Surat district) and Maharashtra (mainly Mumbai/Thane districts). There were more than 0.1 million migrants and 90 per cent of them migrated to high HIV destination areas (Surat, Mumbai, and Thane districts) ((UNDP, NACO, Population Council, 2011). A case control study conducted by Niranjana et al (2012) indicates that the proportion of migrant men among HIV sero-positive individuals is higher than that among HIV sero-negative individuals in suggesting a concentration of HIV among individuals with migration history. Like another study conducted by M. Dash et al (2011) revealed that a majority of sero-positives were married, males, less educated, having lower socio-economic status, mostly stayed away from their families or single and out-migrants. According to Odisha State HIV statistics, 43 per cent of all people living with HIV/AIDS (PLHAs) are from Ganjam district alone. From a total of 640 districts in India, Ganjam has been identified as one of the 14 most critical districts affected by HIV in the country (UNDP, NACO, Population Council, 2011). In 2011, HIV positivity among ICTC attendees among males was (3.69 per cent), females (3.63 per cent), among referred clients (2.23 per cent) and among ANC attendees (0.22 per cent). The HIV transmission from parent to child accounted for 6.92 per cent of all the HIV transmissions. In 2013, around 1,953 pregnant women were counselled and tested in Ganjam district. Of those, 14 were identified as HIV positive and 43 HIV positive deliveries conducted at the facility.

3.11.2 A. Khordha District

Khordha is the headquarters of the district and is situated on the National Highway No.5. The town is 11 kms. away from Khordha Road Railway Station. The local name of the place was “Jajarsingh” which originally was a small village. Probably the place was known as “Kurada” which means foul mouthed. Khordha came into prominence with the first king of “Bhoi” dynasty Ramachandra Dev, who made it the capital of his kingdom during the last part of 16th century A.D. Khordha suffered repeatedly from Muslim and Maratha cavalry Raja Mukunda Deva fought against the British and was defeated. Khordha is also memorable as the centre of activity of the “Paika Rebellion” of 1817-18 under the leadership of Bakshi Jagabandhu Bidyadhar.

Khordha district lies between 84055’ and 86050’ east longitude and 19040’ and 20025’ north latitude. It is bounded by Cuttack district in the north, Nayagarh district in the west, Puri district in the east and Ganjam district in the south. Its area is 2813 sq. kms. It is situated in the southwest of the state and touches the Chilika Lake in the south.

3.11.2 B. Administrative and demographic profile

The district comprises of seven towns and 1551 villages. It has a population of 22,51,673 in which males constitute 51.8 per cent and females 48.2 per cent. The population growth rate during the last decade of the twentieth century is 24.79 per cent (annually) (Census, 2011). The population density was 667. Sex ratio (females per 1000 males) works out to be 902 and child sex ratio is 918 indicating a relative deficit of females at younger ages. Major towns are Bhubaneswar, Jatani and Khordha .

3.11.2. C Health profile

The health infrastructure of the district consists of two district hospitals, 19 sub-divisional hospitals, 13 community health centres, 49 primary health centres and 202 sub-centres. There are 12 ICTCs including PPTCT Centres, one ART Centre, and two STI/RTI Clinics designated for providing counselling and testing services in the district. In the health facilities 87 per cent deliveries took place. As per the AHS, 2012-13, the under five mortality rate was 96, infant mortality rate 61 per cent and neo-natal mortality rate 43 per cent. There were 35 per cent children aged (6-35 months) who were exclusively breastfed for at least six months.

3.11.2 D HIV/AIDS scenario

It is 'B' category district with less than 1 per cent of ANC in all sites and more than 5 per cent prevalence in any HRG sites in the last three years (NACO, 2007). There are seven ICTCs, three blood banks, two STI clinics, and one ART centre which provide counselling, testing and treatment services. Based on 2010 HSS-ANC data, the level of HIV positivity was high at 1 per cent among the ANC attendees, among Female Sex Worker (FSWs) and Men who have Sex with Men (MSM) (0.47 per cent) and among IDUs at 8.80 per cent. As per the 2001 Census, 5.10 per cent of the male population was migrant, of which 18.95 per cent migrated to other states and 31.11 per cent to other districts within the state. The top two destination districts for migration were Surat in Gujarat and Mumbai (Suburban) in Maharashtra. As on 31st March, 2014, 1457 cases (1387 general clients and 70 ANC clients) were detected as HIV positive. The district has 4.6 per cent of total HIV cases in the state. With regard to AIDS cases, 48 AIDS related deaths were reported as on 31st March, 2014 (SACS, 2014). There are 388 PLHIV (among 4 per cent of which are of 15-24 years of age) are under treatment at the ART centre in the district (*DEP fact sheet, Odisha*).

3.11.3 A. Cuttack District

Cuttack district is named after the principal town as well as the headquarters of the district. The word "Cuttack" is an anglicized form of the Sanskrit work 'Kataka' that assumes seven different meanings out of which two, namely, the 'military camp' and 'the fort of Capital or the seat of the government protected by the army'. Cuttack, which is one of the oldest cities of India and the capital city of Orissa for almost nine centuries, was built as a military cantonment in 989 AD by the king Nrupa Keshari. The city attained prominence in the 12th century as the capital of imperial Gangas. Cuttack passed into the hands of the Afghans and later to the Mughals.

3.11.3 B. Administrative and demographic profile

The district forms a part of the Mahanadi delta and extends from 84° 58' to 86° 20' east longitudes and from 20° 03' to 20° 40' north latitudes. It is bounded on the north by Jajapur district, on the east by Jagatsinghapur and Kendrapara districts, on the west by Dhenkanal district and on the south by Khordha and Nayagarh districts. Total geographical area of the undivided Cuttack district was 11,142.00 sq. km as reported by the Surveyor General of India. However, the district was divided into four districts after the 1991

Census. These districts are Jagatsinghapur, Kendrapara, Jajapur and Cuttack. The district Cuttack has three sub-divisions, namely, Cuttack Sadar, Athagad and Banki. Its geographical area consists of 3,920 sq. km. . As per the 2011 census, the population of the district was 26.24 lakh, of which 13.52 lakh are males and 12.71 lakh are females. About 72 per cent of population lives in rural areas. Scheduled Caste and Scheduled Tribe population consists of 22 per cent. There are 667 persons living per sq.km. There are 940 females per 1000 males while child sex ratio is 914.

3.11.3 C. Health profile

The district has a medical college, district hospital, two sub-divisional hospitals, 18 community health centres, 54 primary health centres and 352 sub centres and so on. There are 12 Integrated Counselling and Testing and PPTCT Centres, one ART Centre and two STI/RTI clinics for providing counselling and testing services. There were 91 per cent of deliveries at the health facilities. As per the AHS, 2012-13, the infant mortality rate was 49 per cent, neo-natal mortality rate 35 per cent and under-five mortality rate 85 per cent. There were 39 per cent of children aged (6-35 months) exclusively breastfed for at least six months during 2012-13.

3.11.3 D HIV/AIDS Scenario

There are seven ICTCs, three blood banks, two STI clinics, and one ART centre existing to provide services under National HIV/AIDS Control HIV/AIDS Control Programme. As per the NACO district categorization, Cuttack district falls into 'C' category with e less than 1 per cent ANC prevalence in all sites during the last three years with less than 5per cent in all HRG sites, with known hot spots (migrants, truckers, factory workers, tourists, etc). As per the 2001 Census, 6.45 per cent of the male population was migrant of which 23.56 per cent migrated to other states and 48.78 per cent to other districts within the state. The top two destination districts for inter-state were Surat and Kolkota. The level of HIV positivity was low among the PPTCT (0.11 per cent) and blood bank (0.06 per cent) attendees, with a stable trend over the last few years. In 2011, HIV prevalence among ICTC attendees was low among male (3.73 per cent) but moderate among female clients (5.23 per cent). It was also low among referred (3.03 per cent) and moderate among direct walk-in clients (6.37 per cent). HIV positivity showed a stable trend among all ICTC attendees in the last four years. In all, 4,127 HIV positive cases were detected as on March

2014. The district contributes 13 per cent off all HIV positive cases in the state and 46 AIDS related deaths were reported as on March, 2014 (SACS, 2014).

Table 3.6 Administrative and demographic profile

Indicators	Ganjam	Khordha	Cuttack
Geographical area (in sq kms) ¹	8,206	2813	3,932
No. of sub-divisions ¹	3	2	3
No. of municipalities/corporation ¹	1	3	2
No. of tehsils ¹	23	10	15
No. of blocks ¹	22	10	14
No. of N.A.Cs ¹	17	2	2
No. of gram panchayats ¹	475	168	342
No. of uninhabited villages	412	193	94
No. of inhabited villages ¹	2838	1358	1856
No. of villages ¹	3250	1551	1950
Total population ²	3,529,031	2251673	2624470
Males ²	1,779,218	1167137	1352760
Females ²	1,749,813	1084536	1271710
Rural ²	2761030	1167357	1888423
Urban ²	768001	1084316	736047
Population growth rate ²	11.7	19.9	12.1
Proportion of rural population ²	78.2	51.8	72.0
Scheduled caste population (per cent) ²	19.5	13.2	19.0
Scheduled tribe population (per cent) ²	3.4	5.1	3.6
Population density ²	430	800	667
Literacy rate ²	71.1	86.9	85.5
Literacy rate -male ²	81.0	91.8	91.1
Literacy rate-female ²	61.1	81.6	79.6
Sex ratio ²	983	929	940
Child sex ratio ²	908	916	914

Source: ¹Directorate of Economics and Statistics, 2013, ²Census 2011.

Table 3.7 Health indicators of selected districts

Indicators	Ganjam	Khordha	Cuttack
Health infrastructure			
No. of medical colleges ¹	1	-	1
District head quarters hospital ¹	1	2	1
No. of sub-divisional hospital ¹	2	19	2
No. of community health centre ¹	30	13	18
No. of primary health centre ¹	95	49	54
No. of sub-centre ¹	460	202	332
No. of blood banks ¹	2	8	3
No. of ICTCs and Parent to Child Transmission Centres (PPTCT) ²	26	12	12
No. of ART Centres ²	2	1	1
No. of STD clinics (RTI-STI) ²	3	2	2
No. of TB clinic ²	294	102	398
Health indicators			
Crude birth rate ³	18.9	18.4	19.4
Crude death rate ³	8.3	8.2	6.8
Total fertility rate ³	2.1	2.0	2.1
Under five mortality rate ³	87	96	85
Infant mortality rate ³	44	61	49
Neo-natal mortality rate ³	35	43	35
Post Neo-natal mortality rate ³	21	25	21
Institutional delivery (per cent) ³	87.6	92.9	91.3
Safe delivery(per cent) ³	88.9	93.8	92.6
Delivery at home (per cent) ³	11.8	7.1	8.6
Mothers who received any ANC (per cent) ³	95.9	97.4	98.3
Mothers who received 3 or more ANC (per cent) ³	79.7	82.3	83.2
Mother who received full ANC (per cent) ³	29.5	35.0	36.5
Children breastfed within 1 hr of birth ³	71.3	81.4	82.0
Children (aged 6-35 months) exclusively breastfed for at least 6 months ³	23.8	35.0	39.2
Children aged 12-23 months received BCG (per cent) ³	97.7	98.3	98.6
Children aged 12-23 months received three DPT (per cent) ³	69.8	80.1	85.4
Children aged 12-23 months received 3 polio doses (per cent) ³	64.5	72.9	69.2
Children aged 12-23 months receiving measles vaccine (per cent) ³	85.6	86.7	89.2
Children age 12-23 months received full immunization (per cent) ³	43.1	60.1	60.0
Women aware of HIV/AIDS ³	93.2	99.3	96.9
Women who heard of RTI/STI ³	92.2	100.0	96.7
HIV prevalence among ANC attendees (per cent) ⁴	0.75	1.50	1.00

Source: ¹Rural Health Statistics, 2014, ²NACO, 2013, ³AHS 2012-13, ⁴HSS, 2010

3.12. Conclusion

The above chapter explains the HIV counselling and testing and PPTCT programme in India and Odisha. This chapter briefly describes the scale up of services under NACP, components of PPTCT services, performance of PPTCT services, continuum care under PPTCT, infant feeding practices. This chapter also focuses the demographic, health and HIV scenario in the study districts.

The above chapter highlights the Government of India's contribution to work towards achievement of global target of elimination of new HIV infection among children, Though the NACP has adopted the more efficacious multi drug ARV regimen in the PPTCT programme, this is need to be implement across the country. The National guidelines for Prevention of Parent-to-Child Transmission are required to be update and to incorporate global recommendations and also provide operational guidelines for nationwide implementation.