Institute of Child Health, Bengaluru; LTMG Sion Hospital, Mumbai; JN Hospital, Imphal; Institute of Child Health, Chennai; Govt. Medical College Hospital, Kolkata and Kalawati Saran Children's Hospital, New Delhi.

A.6 ART Plus Centres: The ART centres providing second line treatment are known as ART Plus centres. They were established to provide easy access to second line ART. NACO is currently expanding the number of centres that provide second line ART by upgrading ART centers. Currently, there are 52 ART plus centers functioning in the country. It is ensured that every state has at least one ART Plus centre providing second line treatment.

A.7 Care & Support Centers: The overall goal of care and support centers is to improve survival and quality of life of PLHIV. Care and support centers provide expanded and holistic care & support services for People Living with HIV (PLHIV). It provides linkages and access to essential services, supports treatment adherence, reduces stigma and discrimination and improves the quality of life of PLHIV across India. The project is implemented by 17 state level and regional SRs. 11 out of 17 SRs are networks of PLHIV and at the facility level more than 60% of CSCs are implemented by PLHIV networks making it the biggest community led care and support intervention. Till September 2015, 350 care and support centers are functional and a total of 8,31,821 PLHIV have received care and support services.

A.8 Facility Integrated ART Centers: From April 2014, the concept of Facility Integrated ART Center (FIARTC) has been initiated with financial and technical support from NACO and SACS. The concept of of FIARTC is much similar to ART center except for the patient load (>than 300 positives detected at ICTC) and the number of staff serving at the center. The main objective of initiating this concept was to serve those

geographical areas which have less accessibility, especially the hilly terrains, desert areas, tribal areas and other areas with fewer infrastructures to access the treatment. This initiative which is to be located at Medical college and District Level Hospital will help to reduce the number of LFU in most difficult areas and will help to increase the drug adherence among those who are on ART. As of September 2015 a total of 31 FIARTC centres have been made functional.

The progress achieved in expanding Care, Support and Treatment services till Sep 2015 is summarized in **Table 9-A**.

Table 9-A: Scale up of infrastructure under Care, Support & Treatment Services

Facility for CST	Baseline (Dec 2012)	As on March 2015	As on Sept. 2015
ART Centers	355	475	519
Link ART Centers	685	1068	1073
Centers of Excellence	10	10	10
Pediatric Centers of Excellence	7	7	7
ART Plus Centers	24	37	52
Care & Support Centers	253 (CCC)	325	350

* Early in 2012, the Care & support centers were referred as Community Care Center.

B.   Care, Support and Treatment Service Package

B.1   Free Universal Access to ART

Government of India had rolled out free ART initiative under NACP II in 2004. The National AIDS Control Programme (NACP) is now providing free ART to 9 lakhs PLHIV through 519 ART centers and 1073 Link ART centers. The different ART services provided by the programme are as below:

First line ART: First line ART is provided free of

cost to all eligible PLHIV through ART centers. Positive cases referred by ICTCs are registered in ART center for pre-ART and ART services. The assessment for eligibility for ART is done through clinical examination and CD4 count. Patients are also provided counseling on adherence, nutrition, positive prevention and positive living. Follow up of patients on ART is done by assessing drug adherence, regularity of visits, periodic examination and CD4 count (every 6 months). Treatment for opportunistic infections is also provided through ART centers. Till September 2015, 9.02 lakhs PLHIVs are on ART.

Alternative first line ART: A small number of patients initiated on first line ART experience acute/chronic toxicity/intolerance to first line ARV drugs necessitating change of ARV drugs to alternative first line drugs. Presently, the provision of alternative first line ART is done through the Centers of Excellence and ART plus Centers across the country.

Second line ART: The patients started on ART can continue on first line ART for a number of years if their adherence is good. However, over the years some percentage of PLHIV on first line ART develop resistance to these drugs due to mutations in virus. The rollout of second line ART began in January 2008 at 2 sites – GHTM, Tambaram, Chennai and JJ Hospital, Mumbai on a pilot basis and was then further expanded to other COEs in January 2009. Further decentralization of second Line ART was done through capacitating and upgrading some well-functioning ART Center as 'ART plus Centers'. Till August 2015, 12823 PLHIV are receiving second line drugs at CoEs and ART Plus Centers. All ART centers are linked to CoE/ART plus centers. For the evaluation of patients for initiation on second line and alternate first line ART, State AIDS Clinical Expert panel (SACEP) has been constituted by NACO at all CoEs and ART Plus Centers. This panel meets once in a week for taking decision on patients referred to them with treatment failure/major side effects.

Figure 9.2 shows the scaling up of service provisioning under CST component since March 2005. All measures of service provisioning, viz. number of ART centers, PLHIV ever registered and PLHIV on 1st line treatment have increased exponentially.

Fig.9.2: ART Scale up for PLHIV in India, 2005 – 2015 (till September, 2015)
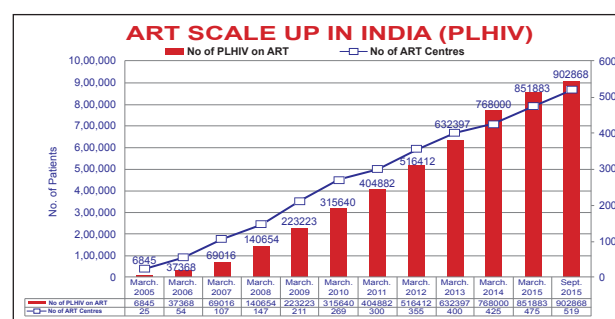
National Paediatric HIV/AIDS Initiative: The National Paediatric HIV/AIDS Initiative was launched on 30th Nov 2006. Till September 2015, nearly 77,729 Children Living with HIV/AIDS (CLHIV) are active in HIV care at ART centers and of whom, 49,909 are receiving free ART. Paediatric formulations of ARV drugs are available at all ART centers.

Pediatric Second line ART: While the first line therapy is efficacious, certain proportion of children do show evidence of failure. There is not much data available on the failure rate on the Nevirapine based ART in children. However, WHO estimates that the average switch rate from first to second line ART is 2 - 3% per year for adults. It is likely that similar rates are applicable for children as well. Currently, provision of second line ART for children has been made available at all CoEs and ART plus Centers. Fig. No. 9.3 gives a view of the services provided to children living with HIV/AIDS, during 2005 – September 2015.

Fig.9.3: ART Scale up for Children Living with HIV/AIDS in India, 2005 – 2015
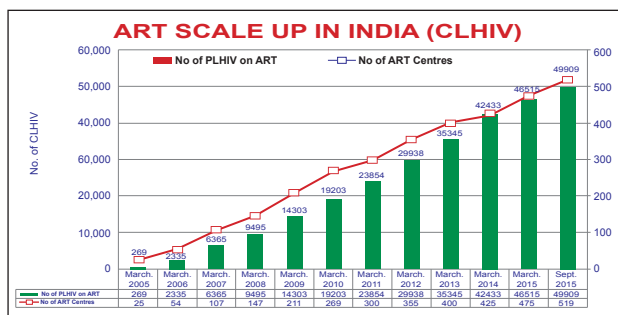
An overview of patients receiving services at different service delivery points under CST component is given in following Table.

Beneficiaries of Care, Support & Treatment Services

Services/Beneficiaries	Achievement as on September 2015
Adults in active care at ART Centres	10,80,058
Adults alive and on ART	8,52,959
Children in active care at ART Centres	7,7,729
Children alive and on ART	49,909
Persons alive and on 2nd line ART	12823*

till August 2015

Fig. 9.4: Outcome of PLHIV ever initiated on ART till September 2015 (cross sectional data at one point of time)
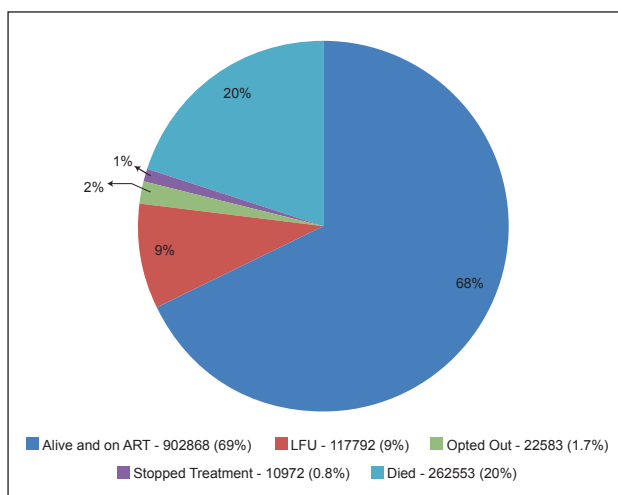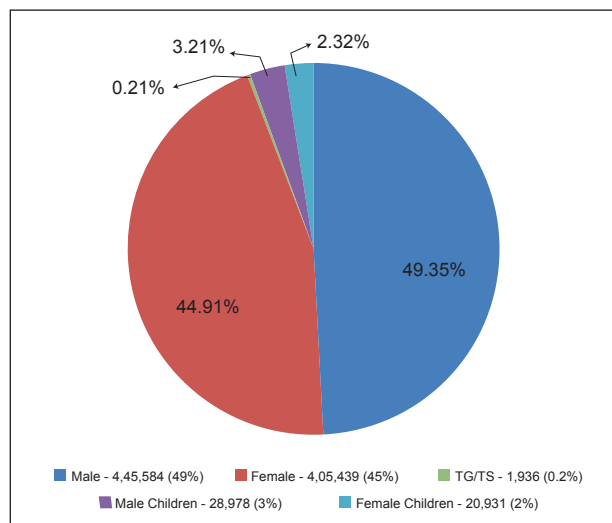

Fig. 9.5: Gender distribution of Alive on ART PLHIV and CLHIV till September 2015.

B.2 CD4 Testing Services: The programme provides facility for baseline and follow up CD4 cell count testing free of cost to all PLHIV attending ART Centres. There are 276 CD4 machines installed at present serving 519 ART centers. All machines procured by NACO are under comprehensive maintenance or warranty.

B.3 Early Infant Diagnosis (EID): In order to promote confirmatory diagnosis for HIV exposed children, a programme on EID was launched by NACO. All children with HIV infection confirmed through EID are linked to ART services.

B.4 Counselling Services: Counselling services are essential part of the services provided by the CST programme. Counselling services are provided by both ART Centres and Care and Support Centres. Counselling services are provided as part of the psychosocial care at ART centres and care & support centres. The counselling services are provided to both "Pre-ART" and "On-ART" clients on regular follow up visits and CD 4 testing. The themes of counselling includes adherence to ART drugs, issues related to toxicity, positive prevention, positive living, nutritional care, sexual and reproductive health and HIV disclosure among others.

B 5. Management of Opportunistic Infections: ART centres provide clinical care to both Pre-ART and On-ART clients. The clinical care includes diagnosis, management as well as primary and secondary prophylaxis of opportunistic infections as per the guidelines. From April 2015 to September 2015, total 2,44,000 opportunistic infection have been treated at ART Centres.

B.6 Care and Support Services provided through Care and Support Centres (CSCs): The CSCs serve as a comprehensive unit for treatment support for retention, adherence, positive living, referral, linkages to need based services and strengthening enabling environment for PLHIV. This is part of the national response to meet the needs of PLHIV, especially those from the high risk groups and women and children infected and affected by HIV. CSCs are run by civil society partners including District Level Networks (DLN) and non-government organizations (NGOs). The important services provided by CSCs are given below in the **table 9-B and 9-C.**

Table 9-B: Services provided by Care and Support Centers

Services	Activities
Counselling Services	• One-to-one counselling • Group/couple/family counselling • Specialised counselling for children and pregnant women • Counselling for HRGs • Outdoor counselling (through outreach)

Outreach Services	• Follow up of PLHIV for ART adherence
	• Follow up of PLHIV for retention in care:
	   o Pre-ART LFU
	   o Tested positive but CD4 not done
	   o Pre-ART clients who are eligible but not started ART
	   o On ART MIS cases
	   o On ART LFU cases
	• Follow up repeat CD4 tests
	• Reinforcement of key counselling messages as per client's need
	• Disseminate information on signs and symptoms of OIs

Training on home based care services	• Educating care giver (family member) on how to take care of minor ailments at home, on health and hygiene maintenance to delay opportunistic infections, on how to identify signs of symptoms of OIs that need medical treatment etc. • Counselling family members on preventive measures, how to cope with emotions while dealing with family member/s who are living with HIV
Referral and linkage services	• Referral for treatment and health needs • Linkages and referrals for social welfare schemes and entitlements • Linkages and referrals for non-health needs • Accompanied referral from and to ARTC and other facilities • Coordination with referral centres
Life skill education and vocational training	• Counselling on livelihood options, with special emphasis on women and youths • Training on life skills • Vocational training through linkages with vocational training institutes in collaboration with departments such as Women and Child Development, Social Justice and Empowerment and other corporate sectors
Advocacy and communication	• Regular sensitization meeting of all stakeholders • Media advocacy • Quarterly advocacy meetings • Regular meeting of DRT
Support group meeting	• Formation of support groups based on thematic areas • Regular Conduction of SGM • Documentation of SGM

Table 9-C: Cumulative Outcome of Services provided by care and support centers till September 2015

S No.	Indicator	Achievement
1	No. of PLHIVs registered in ART Centre and on ART are registered in the CSC	589,959
2	No. of PLHIV in Pre ART phase who get registered at the CSC	250,715
3	No. of registered PLHIVs receiving at least one counselling service in the quarter	596,885
4	No. of registered PLHIVs receiving at least one counselling session on thematic areas	558,487
5	No. of PLHIV whose at least one family member or sexual partner referred for HIV testing and received test result	38,947
6	No. of PLHIV registered in the CSC linked to Govt. social welfare scheme	269,271
7	Proportion of PLHIV Lost to Follow Up (LFU) brought back to treatment	121,178
8	No. of Advocacy meeting organised	2,327

C.   CST Services Referral and Linkage Mechanism

Mechanisms for establishing linkages and referral systems are necessary to meet immediate and long term needs of the persons enrolled in a comprehensive care programme. PLHIV need a wide range of services during the course of HIV infection and stage of the disease. Therefore, the CST division have a comprehensive referral and linkage mechanism with different stakeholders.

D.   Capacity Building for CST

To ensure uniform standards of services, adherence to operational guidelines and treatment protocols, induction/refresher training is provided to various personnel using standard curriculum, training modules and tools at identified institutions. Various training programmes organized under CST programme include:

- Orientation of faculty of Medical Colleges/ District Hospital (4 days);
- Training of Medical Officers (SMO/MO) of ART Centers (12 days);
- Training of Medical Officers of Link ART Centers (3 days);
- Training of ART Counselors (12 days);
- Training of Data Managers of ART Centers (3 days);
- Training of Laboratory Technicians for CD4 count (2 days);
- Training of Pharmacists (3 days) and
- Training of Nurses (6 days).

These trainings are conducted at the Centers of Excellence and other designated training centers across the country.

As part of continuous capacity building efforts, technical guidelines and training modules have been developed which are available for use at various facilities and SACS. These include:

- Guidelines for ART in adults and adolescents - March 2007 (Updated: April 2009, November 2011, July 2012 and May 2013);
- Guidelines for ART in children - November 2006 (Updated; September 2009 and October 2012);
- Guidelines for prevention and management of common opportunistic infections and malignancies among adults and adolescents - March 2007;
- Operational guidelines for ART centres, Link ART centre and LAC Plus;
- Operational guidelines for Care and Support centres;
- Technical guidelines on second line ART in adults and adolescents - November 2008 (Updated in December 2012; May-2013);

- Technical guidelines on second line ART for children - October 2009 (Updated; May 2013);

- Training modules for ART Medical Officers, ART specialists and LAC doctors May 2007 (Updated: December 2012);

- Guidelines for Providing Nutritional Care and Support for Adults living with HIV and AIDS: July 2012 and

- Nutrition Guidelines for HIV Exposed and Infected Children (0 – 14 years of age): July 2012.

The above documents are revised from time to time with the recommendations of the Technical Resource Groups. These can be accessed on the NACO website (www.naco.gov.in).

E. Endeavours to enhance and ensure the provision of high quality services

E.1 Technical Resource Groups on CST: Technical Resource Groups have been constituted on ART, Paediatric ART and Care & Support services. These groups consist of national and international experts and representatives of organizations like WHO, CDC, Clinton Health Access Initiative and Networks of Positive People. They review the progress and give valuable suggestions and recommendations on various technical and operational issues relating to the programme. Meetings of TRGs are held periodically with clearly drawn agenda and issues for discussion.

E.2 Supervisory/Monitoring Mechanism: Care, Support & Treatment Division at NACO is responsible for planning, financing, implementation, supply chain management, training, coordination, monitoring & evaluation of care support & treatment services in the country.

The implementation and monitoring at State level is the responsibility of the concerned State AIDS Control Societies (SACS) consisting of Joint Director (CST), Deputy Director (CST), Assistant Director (CST) and Consultant (CST) based on volume of CST activities in the state.

For close monitoring, mentoring and supervision of ART Centers, various states have been grouped into regions and regional coordinators for CST have been appointed to supervise the programme in their regions. The regional coordinators and SACS officials visit each of the allotted ART Centers at least once in two months and they send regular reports to NACO. Periodic meetings of Regional Coordinators/CST officials of SACS are held at NACO to review various issues pointed out by them. In addition, NACO officers also visit the centers not performing satisfactorily or facing problems to guide them in implementation of the programme.

E.3 Regular CST review meetings: Review meetings of all the CST officers from the state and all NACO regional coordinators are held on a regular basis in a standard format. During these meetings, the state officers give an update on the various CST related activities in their state and wherever required remedial measures are taken.

E.4 Regular state level review meetings: Regular state level review meetings of the programme are conducted at SACS level. These meetings are attended by representatives of NACO, SACS, regional coordinators, medical officers and staff of ART centers and other facilities. Review of the performance of individual centers is undertaken during such meetings. Participants are given refresher/reorientation sessions also during such meetings.

E.5 State Grievance Redressal Committee (SGRC): At the state level, Grievance Redressal committee has been constituted to routinely review the functioning of the ART centers. The Committee is headed by the Health Secretary of the State and consists of Project Director of the

SACS, Director of Medical Education, Director of Health Services, and the Nodal Officers of the ART center, representative of Civil Society/positive network and NACO. This mechanism ensures that issues pertaining to grievances of PLHIV are brought to the notice of state authorities and SACS in a systematic manner for timely response.

E.6 MIS/LFU Tracking Mechanism: The information on patients Lost to Follow Up (LFU) is captured in the CMIS through the monthly reports from the ART centers. This information is monitored very closely and centers with high rates of LFU are visited by senior officers of NACO. Presently the cumulative LFU is about 6%. The responsibility of tracking and providing home-based counseling for LFU patients is shared with CSC through outreach workers, PLHA networks and counselors of ICTC in some places.

E.7 Follow up of Pre-ART LFU: All patients registered in Pre-ART and on ART undergo a CD4 test every six months. The ART center lab technician maintains a daily "due list" of the patients who are due for CD4 testing. This list is prepared from CD4 laboratory register. This list is available with SMO/MO and during patient's visit in that particular month for ART, CD4 test is done. Those who do not undergo CD4 test within one week of their due date are followed up by phone call and also home visit by CSC staff if required to ensure that CD4 test is done on the next visit.

F. Other Initiatives in Care, Support and Treatment

F.1 Post Graduate Diploma in HIV Medicine: NACO, in collaboration with IGNOU, has rolled out a one-year PG Diploma programme in HIV Medicine. This programme is expected to bridge the gap in trained manpower for ART centers.

Programme Objectives:

● To imbibe comprehensive knowledge on basics of HIV as related to details of management of HIV/AIDS in tertiary care set up;

● To manage all complications as well as opportunistic infections due to HIV/AIDS at the time of need and

● To recognize and handle emergencies related to HIV/AIDS and its complication and take bedside decision for management whenever required.

The programme is implemented through a network of programme study centers located in select Centers of Excellence.

F.2 Various capacity building activities done with support from I-TECH: I-TECH/CDC provide technical and financial support for these activities.

Expert Physician Access Number (EPAN): Expert Physician Access Number (EPAN) is a clinical consultation phone line (Warmline) for the ART medical officers and clinical staff to get timely access to clinical case consultation on unique and complicated HIV/AIDS cases.

Expert Physician Access Number (EPAN) was established in 2012 which was aimed to provide remote, mobile-based technical support to ART medical officers. Clinical Research Fellows (CRF) at CoEs were trained and oriented on the various aspects of the EPAN/Warmline service based on successful pilot of a similar service at Government Hospital of Thoracic Medicine, Tambaram, Chennai. The EPAN/Warmline operates between 9:00 AM and 5:00 PM on all days except Saturdays, Sundays, and public holidays. CRFs at CoEs are the custodians of the EPAN cell phone and address clinical/programmatic queries of ART medical officers. After responding and addressing the query, they use a standard case format to document the call.

National Distance Learning Seminar (NDLS): HIV/AIDS National Distance Learning Seminar

Series (NDLS) was introduced in September 2010. The series is aimed at training healthcare workers in ART centers, Link ART Centers and Care and Support Centres providing HIV/AIDS care, support and treatment. National and international HIV/AIDS experts present on a variety of topics on advanced care, comprehensive management, and treatment via synchronous live sessions, across several states and districts around the country using Adobe Connect software. These live sessions have features such as meeting room, live and real time chat, e-poll, video and audio conferencing making sessions intuitive by enabling two way communications.

These bi-monthly 60 minute sessions are conducted in English using an interactive case based format. Access to archived sessions via a streaming link is available to participants who are unable to attend the live, synchronous sessions.

Thus far, 108 NDLS sessions have been conducted with a total of 31,976 participants with an average of over 296 participants per session, with regular participation from ART centers, CoEs (Center of Excellences) and PCoEs (Pediatric Center of Excellences). Other than them 3 special DLS sessions were also conducted which had a total of 2,137 participants.

Regional Distance Learning Seminar (RDLS): Regional Distance Learning Seminar Series (RDLS) was launched in year 2012 aimed at training healthcare workers at ART Centers, Link ART Centers and Care and Support Centres on locally relevant topics, unique case studies and treatment guidelines often in local/regional languages. RDLS is conducted at the regional level and specifically addresses the issues pertaining to the respective state and/or region. The lectures are presented by regional experts on the topics chosen by the regional medical officers based on the current prevailing issues in the region/state.

Just like NDLS, RDLS uses Adobe Connect software to host the session with features like meeting room, live and real time chat, e-poll, video and audio conferencing making the session intuitive and interactive. So far, 162 RDLS sessions have been organized with over 13,765 participants trained.

Continued Medical Education (CME): With intention to provide Medical Officers working at ART centre with relevant, reliable and up to date information on current clinical management of HIV infected patients and to provide them with programmatic updates in management of PLHIV's, Continuing Medical Education (CME) programmes have been organized at regional level. So far 6 CME have been conducted and a total of 442 participants have attended them.

G. New Initiatives under Care Support and Treatment

CST division has under taken a number of new initiatives in 2015-16. They include focus on quality through implementation of Early Warning Indicators, Quality of Care Indicators and Retention Cascade to fill the gaps in the programme. Some of the most distinctive new initiatives of the division are as below:

G.1 Computerized Online Inventory Management System (IMS): In 2013, NACO conceptualized a technology based initiative for improved access to HIV commodities for patients across India. The IMS programme leverages bar-coding and web-based technologies to introduce an asset light, scalable solution for addressing the supply chain challenges faced by programme. Implementation of IMS was done in a phased manner and has been scaled up to all ART Centres in 2015-16.

G.2 Airborne Infection Control: The programme also initiated new TB/HIV activities in ART Centres including Airborne Infection Control Activities

and Intensified Case Finding (ICF), Isoniazid Preventive Therapy (IPT) & TB Infection Control (IC) (Three Is) for people living with HIV.

G.3 Completion of Assessment of ART Centres: The assessment of ART Centres was also completed for 357 ART Centres and reports are sent to ART Centres and SACS for needful action.

G.4 Intensified LFU tracking to firm up the number of LFU patients before 2010: NACO had also conducted an intensified tracking drive of Lost to Follow Up (LFU) clients before 2010 to firm up the number of LFU patients through Care and Support Centres.

G.5 HIV- Visceral Leishmaniasis (VL) co-infection programme coordination: HIV-Visceral Leishmaniasis (VL) co-infection programme coordination was initiated with National Vector Born Disease Control Programme (NVBDCP) & World Health Organisation (WHO).

G.6 Successful Submission of a single proposal on HIV/TB to Global Fund: For the first time NACO submitted a single proposal on HIV/TB to Global Fund under New Funding Model (NFM) and a grant of 238.53 USD Million was awarded for NACO activities.

24.10 LABORATORY SERVICES

"Laboratory services are not confined to HIV testing, but are overarching and have an impact on other interventions included under prevention, care, support and treatment, STI management, blood safety, procurement and supply chain management"

Laboratory Services Division functions at the cross cutting interface of all other divisions. It is recognized that work related to laboratory services are not just confined to HIV testing, but are overarching and have an impact on other interventions included those under prevention, care,

support and treatment, STI management, blood safety, procurement and supply chain management. Emphasis on quality assured laboratory service delivery is important to the success of the National AIDS Control Programme (NACP). Universal availability and routine access to quality assured HIV related laboratory services is ensured in all service delivery points through this division. In 2008, a Laboratory Services Division was formed at the center. In NACP IV Laboratory Services has been positioned as an independent division at the state level as well.

The assurance of quality in HIV testing services through implementation of External Quality Assessment Scheme (EQAS) for HIV and CD4 testing has been addressed in NACP with special focus. NACO launched "National External Quality Assessment Scheme" (NEQAS) in year 2000 to assure standard quality of the HIV tests being performed in the programme. The scheme aims to:

- Monitor laboratory performance and evaluate quality control measures;
- Establish intra laboratory comparability and ensure creditability of laboratory;
- Promote high standards of good laboratory practices;
- Encourage use of standard reagents/ methodology and trained personnel;
- Stimulate performance improvement;
- Influence reliability of future testing;
- Identify common errors;
- Facilitate information exchange;
- Support accreditation;
- Educate through exercises, reports and meetings and
- Assess the performance of various laboratories engaged in testing of HIV which will be used for finalizing the India specific protocols.

Technical Resource Group and Standardization of Services

To ensure the above, a Technical Resource Group (TRG) for Laboratory Services meets annually to discuss critical areas for quality and relevant laboratory issues like review and discuss strategy of testing and formulate/ revise guidelines. The seventh TRG meeting was held in December 2015.

Capacity Building

Laboratory Services division has conducted TO training workshops, addressed quality issues, details of Standard Operative Procedures (SOPs) and preparation of quality manual as a step towards accreditation of HIV testing Laboratories under NACO umbrella. As a result of the same, till date 11 NRLs and 49 SRLs have been accredited for HIV testing by the NABL. 3 SRLs are in the cycle of accreditation.

ICTC/CD4 Training

The division is involved on site supervision of trainings of laboratory technicians as per NACO norms and monitors modules for the same.

CD4 Testing

There are 254 functional CD4 machines installed at present serving 519 ART Centres. These include 159 FACS Count machines, 28 Calibur machines, 67 Partec machines. Additionally, 20 Point of Care CD4 machines were deployed in the National Programme. All machines procured by NACO are under warranty or maintenance. About 850493 CD4 tests were performed from April- September 30, 2015.

CD4 training institutions were identified in 2009 to systematize the training of laboratory technicians in ART centres. A Training of Trainers (TOT) was held in May and June 2009 for CD4 machine technicians and in-charges. A regional capacity building of four institutions for Calibur machines (GHTM Tambaram, STM Kolkata, NARI Pune and PGI Chandigarh), five institutions for Count machines (GMC Vishakapatnam, NARI Pune, MAMC New Delhi, RIMS Imphal, CMC Vellore) and six institutions for Partec machines (Surat, Trichy, Kakinada, Davangere, Lucknow, Medinapur) have been done. Faculty of these institutions have been trained and is imparting further training. All technicians at ART centres are retrained at these institutions every year. Training plan has been developed in consultation with the respective manufacturer and NARI, Pune which provides technical expertise along with the resource persons for the same. Training of trainers was held for five days regionally and the regional training is ongoing for three days for FACS Calibur & Partec and two days for FACS Count. Approximately 145 ART laboratory technicians operating these machines have been trained from April to September 2015. Further trainings are planned such that every technician undergoes one training annually.

CD4 EQAS

NACO with support from Clinton Foundation initiated the development of National CD4 EQAS for Indian CD4 testing laboratories in 2005. National CD4 estimation guidelines were prepared in 2005. NARI functions as an apex laboratory for conducting the EQAS. QASI (an international programme for quality assessment and standardization for immunological measures) relevant to HIV/AIDS, is a performance assessment programme for T-lymphocyte subset enumeration. The technology transfer workshop was conducted for four regional centres at NARI in Sep 2009

External Quality Assessment Scheme (EQAS)

EQAS categorised the laboratories into four tiers, as follows:

●   Apex laboratory (first tier) - National AIDS Research Institute, Pune

- Thirteen National Reference Laboratories (NRLs) located in all parts of India undertake EQAS in their respective geographical areas including apex (second tier)

- State level: 117 State Reference Laboratories (SRLs) (third tier)

- Districts level: all ICTC

Thus, a complete network of laboratories has been established throughout the country. Each NRL has attached SRLs for which it has the responsibility of supervision. Each SRL, in turn, has ICTC and blood banks which it monitors. One Technical Officer at each SRL is supported by funds from NACO to facilitate supervision, training and continual quality improvement in all SRLs and linked ICTCs

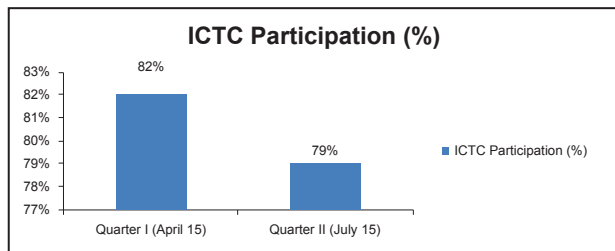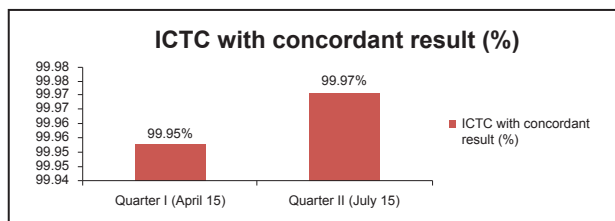**Fig. 10.1: % ICTC participated in Quarter I & Quarter II**

Fig. 10.2: % of ICTC with concordant results quarterly EQAS

Apart from the above NCDC Delhi; NICED Kolkata and NIMHANS Bengaluru, National Institute of Biologicals, Noida under supervision of NARI have been identified for panel preparation and evaluation of HIV, HCV and HBV kits procured by NACO. These laboratories form Consortium for Quality developed by NACO for kit evaluation.

Improvement in Quality Management Systems (QMS) and accreditation of HIV testing Laboratories

In an effort to strengthen quality of HIV testing continuous mentoring and supervision to implement and improve the QMS of HIV testing laboratories is undertaken. In 2007 and 2010 all NRLs and in 2009 and 2011-12 all SRLs have undergone two rounds each of third party assessment as per WHO checklist for 12 Quality system essentials. These assessments were facilitated by CDC-India. As a consequence of this, presently 11 NRLs and 49 SRLs have been accredited by National Accreditation Board for Testing and calibrating laboratories (NABL) as per ISO 15189: 2012 standards.

Viral Load Testing to Support Second Line ART

The Viral Load (VL) assays are provided for patients failing first line anti-retroviral therapy. NACO piloted VL testing at two centres for 10 months from January 2008. Currently there are ten viral load labs, supporting clinical decision making at 17 COEs (including 10 paediatric COEs) second line centres and 37 ART plus centres for patients estimated to transit to second line therapy.

National Programme on Early Infant/Child under 18 Months Diagnosis

Addressing HIV/AIDS in children especially infants below 18 months is a significant global challenge. HIV infected children are the most vulnerable and frequently present with clinical symptoms in the first year of life. Where diagnostics, care and treatment are not available, studies suggest that 35% of infected children die in the first year of life, 50% by the age of two and 60% by the age of three. A critical priority in caring for HIV infected infants is accurate and early diagnosis of HIV. With the tremendous expansion in HIV programme in PPTCT, ICTC, ART (for

adults and children) including access to Early Infant Diagnosis (EID) for HIV testing of infants less than 12 months old it is now possible to ensure that HIV-exposed and infected infants and children get the required essential package of care.

Objectives of providing care for HIV exposed infant and children are:

- To closely monitor HIV-exposed infants and children for symptoms of HIV infection;

- To prevent opportunistic infections;

- To identify HIV status early through early diagnosis of infant/child and final confirmation of HIV status at 18 months by HIV antibody test;

- To provide appropriate treatment including ART as early as possible and

- To reduce HIV related morbidity and mortality and improve survival.

These objectives are proposed to be achieved through following strategies:

- Integration of early infant diagnosis by HIV-1 PCR testing into Care, Support and Treatment Services;

- Availability and accessibility for the HIV testing by PCR test for the children below 18 months at all the ICTC centers (by Dried Blood Spot-DBS). Nationwide coverage will be done in phased manner;

- Infant HIV testing algorithm to be universally followed and implemented on every HIV exposed infant to ensure equal and routine access and

- Linkage of the exposed and infected infants to appropriate referral and care and treatment services to ensure timely intervention to reduce infant morbidity and mortality due to HIV infection.

NACO has trained staff at 1157 ICTCs for sample collection. These ICTCs are linked to six testing labs (equipped with basic molecular testing facilities). Total 3243 tests were performed from April –September, 2015.

24.11 INFORMATION, EDUCATION & COMMUNICATION (IEC)

Communication is the key to generating awareness on prevention as well as motivating access to treatment, care and support. With the launch of NACP IV, the impetus is on standardising the lessons learned during the third phase. Communication in NACP IV is directed:

- To increase knowledge among general population (especially youth and women) on safe sexual behavior;

- To sustain behaviour change in at risk populations (high risk groups and bridge populations);

- To generate demand for care, support and treatment services and

- To strengthen the enabling environment by facilitating appropriate changes in societal norms that reinforces positive attitudes, beliefs and practices to reduce stigma and discrimination.

Key activities undertaken by IEC

Mass Media Campaigns: An annual media calendar was prepared to strategize, streamline and synergise mass media campaigns with other outreach activities and mid-media activities. NACO released campaigns on stigma and discrimination amongst healthcare providers and PPTCT on Doordarshan, cable and satellite channels, All India Radio and FM radio networks. To amplify the reach of mass-media campaigns innovative technologies were also utilised like dissemination of advertisements through movie theatres.

Long Format Programmes: The State IEC teams conducted various long format programmes like phone-ins and panel discussions on HIV related

issues through regional networks of All India Radio and Doordarshan. These programmes reached out to a large audience.

Outdoors: Outdoor activities like hoardings, bus panels, pole kiosks, information panels and panels in railways and Metro trains were implemented by the State AIDS Control Societies, condom social marketing organisations of NACO and under link worker's scheme to disseminate information on HIV prevention and related services. NACO has developed a well-coordinated plan involving different agencies to avoid duplication of activities.

Mid Media

Folk Media and IEC Vans: National AIDS Control Programme has extensively used the folk media as an innovative tool for developing an effective communication package to reach the unreached in the remote and media dark areas. The folk campaign is being implemented in two phases focusing on women and youth covering 35 States and UTs and covering almost 631 districts. Around 20,945 performances rolled out in phase-1, FY 2015-16. The primary messages used by the folk troupes during the campaign were on HIV prevention, care, support and treatment. Messages also highlighted the targeted audiences on youth vulnerability, the HIV testing, PPTCT, stigma & discrimination. The immediate impact was a spurt in queries especially from women for further information on HIV/AIDS and STI on testing facilities and increased access to ICTCs.

Folk dance performance in Meghalaya

Youth

Adolescence Education Programme (AEP): The AEP is implemented in secondary and senior secondary schools to build-up life skills of adolescents to cope with the physical and psychological changes associated with growing up. Under the programme, sixteen hour sessions are scheduled during the academic terms of classes VIII, IX and XI. SACS have further adapted the NCERT module for training of teachers and transaction of AEP in classroom. The programme is running in more than 56000 schools.

Red Ribbon Clubs (RRC): The purpose of Red Ribbon Club formation in colleges is to encourage peer-to-peer messaging on HIV prevention and to provide a safe space for young people to seek clarifications of their doubts and on myths surrounding HIV/AIDS. The RRCs also promote voluntary blood donation among youth. More than 16000 clubs are functional and are being supported for these activities.

Second National Youth Consultation Meet: National Youth Consultation Meet was organised in New Delhi from 22nd to 24th July 2015 involving Assistant Directors, (Youth Affairs) of State AIDS Control Societies (SACS). The objective of the workshop was to build the capacity of the ADs (Youth) on various thematic areas as well as to review the progress made by states in the last financial year. The revised guidelines of Adolescence Education Programme as well as Red Ribbon Clubs were also disseminated during the meet.

The meeting also aimed to orient the participants with the programmatic changes (in approach and implementation) made in the last year and facilitate in building an understanding of the key issues which need incorporation while planning, implementing and designing their State level programmes for adolescents and youth.

Themes like Substance Abuse, Role of Education, Adolescent & Health, RKSK programme by NHM

were covered by experts from the Government as well as development partners. A detailed session was taken on Life skills Education by NCERT and "All In" Strategy by UNICEF.

Second National Youth Consultation Meeting, 2015

International Youth Day (IYD)

NACO organised a national event on the International Youth Day on 19th August, 2015 in Goa at the Dr. Shyama Prasad Mukherjee Stadium. The event was presided by Shri Laxmikant Parsekar Hon'ble Chief Minister of Goa where as Minister of State for Health & Family Welfare, Shri Shripad Naik was the Chief Guest of the event. In addition, Shri Francis D'Souza, Deputy Chief Minister of Goa and Shri Ramesh Talwalkar, Minister of Sports and Youth Affairs graced the event. More than 7000 students from different schools and colleges in which Adolescence Education Programme and Red Ribbon Clubs are being implemented in Goa participated in the event. An exhibition showcasing the work of Red Ribbon Clubs from states across India was also displayed. A mobile application called "HELP" - HIV education and link to prevention was also launched by Shri Shripad Naik, Minister of State for Health & Family Welfare. Technical sessions on "Social Protection – A step towards secured future" and "Drug Use: HIV and young people were also organised.

Observance of National Youth Day on 19th August, 2015 at Goa

24.12 MAINSTREAMING AND PARTNERSHIP

NACO is collaborating with various key Ministries/ Departments of Govt. of India with objective of multi-pronged, multi-sectoral response which will ensure better use of available resources for risk reduction and impact mitigation of HIV. During the current financial year of 2015-16, NACO has formalized partnership with two departments by signing Memorandum of Understanding (MoUs) with Department of Commerce and Department of Rural Development.

During the current financial year the emphasis was given on roll out of 14 MoUs signed between NACO and other key Ministries/ Department of Government of India. State AIDS Control Societies (SACS) have been implementing the roll out of MoUs with the technical assistance of Regional Programme Manager (RPMs) in the priority States/UTs. The progress on roll out of MoUs are summarised in **Table – 11**.

Table 11: Quantifying progress in roll out of MoUs

Particulars	Total Number
Trainings	
Number of People Trained (Govt. Departments, PSU/Private Sector, Civil Society)	33720
Number of Resource persons trained (TOT)	1101
Number of Institutions incorporated HIV Module in training	58
IEC	
Number of hoarding erected by Dept./PSUs	57
IEC material developed/displayed	33
No of IEC material developed electronically	4
Services	
Number of ICTC established	11
Number of FICTC established	25
Number of STI clinic established	6
Integration of TB detection or treatment in any facility	6

Particulars	Total Number
PSU/Private Sector	
Number of PSUs and Private Sector approached and meetings held	227
Social Protection	
Number of Directives issued by Govt. to include HIV (Inclusive)	0
Number of Directives issued by Govt: for specific schemes (Exclusive)	18
Directives from Other Departments	
Number of Directives issued by other Departments	102
Knowledge Product	
Directory of HIV Sensitive social protection	11
Any other knowledge product	0

New Initiatives under Mainstreaming

Workshop on "Mobilising Political Leadership for Sustainable HIV Response": One day Workshop on "Mobilising Political Leadership for Sustainable HIV Response" was organized by NACO in collaboration with the Forum of Parliamentarians on AIDS, UNAIDS, PIPPSE and UNDP on 17th April 2015. Shri Oscar Fernandes (Member of Parliament and President of the Forum of Parliamentarians on HIV/AIDS in India), Shri K B Krishnamurthy (Member of Parliament), Dr. Naresh Goel (DDG, NACO), Dr. Navneet Singh Tewatia (FPA Coordinator) and Mr. Kasinath (Consultant) were the resource persons of the workshop. The programme was attended by Project Officers (Mainstreaming, NACO), Regional Programme Managers (Mainstreaming & Partnership, NACO) and PIPPSE Project team.

Workshop on "Mobilising Political Leadership for Sustainable HIV Response"

South Asian Cities Summit, 2015: NACO supported the organisation of Session on "Building inclusive cities and Mainstreaming PLHIV/MARPS/Differently Abled" in the South Asian Cities Summit held at New Delhi on 22nd and 23rd May, 2015. Dr. Naresh Goel, Deputy Director General, NACO chaired the session on the discussions on indispensability of inclusiveness for sustaining the development of Cities.

BOWL OUT - HIV

NACO in collaboration with Kings Eleven Punjab, AHF India Cares and Karnataka Health Promotion Trust organized BOWL OUT HIV event to address stigma and discrimination issues related to HIV/AIDS on 15th May 2015 in the Punjab Cricket Association Stadium at Mohali, Punjab. The purpose of the event was to decrease stigma showcasing how the cricketers play with children affected by HIV.

Sensitization workshop of Public and Private Sector Industry

An advocacy cum sensitisation workshop was conducted for Public and Private sector undertakings on 11th June 2015 at Bhopal by Madhya Pradesh State AIDS Control Society. This workshop covered industrial units from Bhopal, Guna, Gwalior,

Advocacy & Sensitization workshop for Public & Private Industries

Mandeep, Baitool, Bhind and Muraina regions. The sessions covered the basics know how on HIV and AIDS, roles and responsibilities of organisations and the ways to collaborate with State AIDS Control Societies in implementing programmes to address HIV issues within their world of work and surrounding areas as well.

Training on guidelines of DAPCU Led Single Window Model on Social Protection

NACO in collaboration with UNDP undertook two regional workshops to train the officials of DACPUs/SACS on the revised guidelines of "DAPCU led single window model on social protection for PLHIV, MARPs and CABA" in the country. First workshop was organised in Dimapur on 29th September 2015 and the second one was organised on 3rd November, 2015. DAPCU officials and SACS officials of 6 states were trained on the guideline. Training of District AIDS Prevention Control Units (DAPCUs) officials on social protection is a key step towards facilitation of change in the lives of most disadvantaged communities and people infected and affected with HIV/AIDS.

Resource person and Participants in the workshop in Nagaland

Trainings and advocacy meeting were undertaken by SACS with various stakeholders which included government officials from various departments, frontline workers, uniform personnel, NGOs, PLHIV network etc. A total of 0.87 lakh persons were trained till October, 2015. Approx 7.2 lakh PLHIVs are benefitting with various scheme on social protection offered by various Ministries/ Department and State Governments.

World AIDS Day, 1st December, 2015

Every year 1st December is observed as World AIDS Day (WAD). The day is an opportunity for people worldwide to unite in the fight against HIV, show their support for people living with HIV. On World AIDS Day, awareness activities are implemented at grass root levels by States involving communities, NGOs, Youth etc.

A national level event was organized on 1st Dec, 2015 at National Media Centre (NMC), New Delhi. The Hon'ble Union Minister of Health & Family Welfare, Shri J. P. Nadda was the Chief Guest of the event and Minister of State Sh. Shripad Naik was the Guest of Honour. Secretary (H&FW), WHO Country Representative, UNDP Country Director, Country Coordinator, UNAIDS India and AS & DG, NACO also graced the event.

The Health Minister also released the "India HIV Estimations 2015-Technical Report" and launched Distance Learning Programme on Opioid Substitution Therapy (OST), Integrated HIV TB e-learning module, PPTCT ART Linkage Software (PALS) and HIV Sensitive Social Protection Portal on this occasion.

Shri Nadda expressed happiness over integration of Prevention from Parent to Child Transmission (PPTCT) programme with the RCH programme. He said more than a crore women were provided with counseling and testing services and this programme is continuing to scale up to ensure zero transmission from mother to child and every child born in the country to be free of AIDS. The above steps are important milestones as we traverse the 90:90:90 strategy adopted by UNAIDS, the Health Minister said. Further, he said that in view of the growing need for treatment services, the Ministry has also decided that the cut-off level for initiation of Anti Retrieval Therapy (ART) has been raised from CD4 Count of 350 to 500. It has also been decided to offer 3rd line treatment to patients who need it. The Minister also informed that NACO had been asked to gear up for these initiatives.

World AIDS Day Function in New Delhi on 1st Dec, 2015

He also stated that addressing stigma and discrimination towards HIV is of paramount importance, to enable persons infected and affected with HIV to access health services and live a life of dignity. The Health Minister highlighted the need for equal participation, inclusion and collective efforts. He dispelled all takes of shortage of drugs and stated that all procurement issues are under control by NACO. He said that India has extended support to the African countries in their fight against HIV-AID which reflects India's global commitment.

Shri Shripad Yasso Naik, Minister of State (MoS), Ministry of Health and Family Welfare said that youth can play bigger role to change the mind set of people by creating more awareness and dispelling misconceptions surrounding the diseases. Shri Naik urged people to come together to end this epidemic by 2030.

Shri B P Sharma, Secretary (Health) highlighted the contribution of evidence-based planning, involvement of stakeholders and communities, judicious deployment of resources and focused interventions, in the success India has had to reduce HIV-AIDS infection. He stated that we need to be alert and continue with our effort.

24.13 PROCUREMENT

Procurements are done using the funds under The Global Fund to fight AIDS, Tuberculosis and Malaria (GFATM), The World Bank and Domestic Funds, through Procurement Agent. All the main items required for the programme, including test kits and other items such as ARV Drugs, STI Drug kits, blood bags etc. are centrally procured and supplied to State AIDS Control Societies (SACS).

To ensure transparency in the procurement of goods, Bid Documents, Minutes of pre-bid meeting and Bid Opening Minutes are uploaded on the websites of Procurement Agent and NACO (www.naco.gov.in).

Procurement at State level remained an area of importance for NACO. For smooth and efficient procurement at State level, hand-holding support to State AIDS Control Societies is being provided by the procurement division at NACO. Regional Procurement & Logistics Coordinators are functioning in different regions and are managing the supply chain management at regional levels.

With increasing number of facilities (ICTCs, ART Centres, Blood Banks, STI clinics) being catered in the National Programme, the issue of supply chain management has gained importance. Efforts made to streamline the supply chain management of various supplies to consuming units include providing training on supply chain management to the procurement Officials of SACS.

To strengthen the supply chain management, an online web based application i.e. Inventory Management System (IMS) is developed by NACO with the support of outsourced agency for better tracking, monitoring and controlling the movement of all the centrally procured items. IMS is designed to capture all inventory transactions at every level from supplier, SACS Warehouses, Point of Care/Facilities to end beneficiary (patients) and provide real time visibility of inventory to prevent stock-out situations and expiries of commodities as well as digitize inventory record keeping. The system is used by all suppliers and store officers at SACS and pharmacist at ART centres. After extensive testing and pilot run, the system has

been scaled up nationally to all SACS and is being implemented downstream to all the ART centres. Currently this application is used at all the ART centre and SACS for tracking the inventory of ARV Drugs and in future it will be implemented to all the point of care facilities (i.e. ICTC, Blood Banks, STI/RTI Clinics, Lab Services and OST Centres). Inventory Management System (IMS) is equipped with bar-coding function and web-based technologies to introduce an innovative solution for addressing the supply chain constraints faced by NACO. It will replace the manual system of accounting inventory and systematically capture and aggregate data to enable to view the various report related to patients, inventory & supplies.

24.14 ADMINISTRATION

Implementation of Right to Information Act, 2005

The Right to Information Act, 2005 enacted with a view to promote transparency and accountability in the functioning of the government by securing citizen's right to access information under the control of public authorities, has already come into force with effect from 12 October, 2005. Under the Act, 2 Central Public Information Officers and 9 Appellate Authorities have been appointed for different subjects, within NACO. During 2015, 235 applications and 39 appeals were received till now and replies action taken for dispose them off by NACO.

24.15 STRATEGIC INFORMATION MANAGEMENT UNIT

One of the key strategies of NACP-IV is Strategic Information Management. It is envisaged to have an overarching knowledge management strategy that encompasses the entire gamut of strategic information activities starting with data generation to dissemination and effective use. The strategy will ensure high quality of data generation systems through surveillance, programme monitoring

and research; strengthening systematic analysis, synthesis, development and dissemination of knowledge products in various forms; emphasis on knowledge translation as an important element of policy making and programme management at all levels and establishment of robust evaluation systems for outcome as well as impact evaluation of various interventions under the programme.

The Strategic Information Management Unit (SIMU) comprises four divisions: Monitoring & Evaluation Division, Research Division, Surveillance & Epidemiology Division and Data Analysis & Dissemination Unit. The division generates and manages crucial information on the entire spectrum of the HIV epidemic and its control including HIV vulnerabilities and risk behaviours, levels, trends and patterns of spread of HIV and factors contributing to it, disease progression, treatment requirements and regimens, planning and implementing interventions, monitoring service delivery and tracking beneficiaries, effectiveness and impact of interventions. Another key function of SIMU is to promote data use for policymaking, programme planning, implementation and review at national, state, district and reporting unit levels.

Programme Monitoring and Evaluation: Key activities undertaken by Monitoring and Evaluation (M&E) division include:

- Managing Strategic Information Management System (SIMS) application for monthly reporting from programme units, including system development and maintenance, finalizing reporting formats, ensuring modifications/improvements based on feedback, training programme personnel in its use, troubleshooting and mentoring;

- Monitoring programme performance across the country through SIMS and providing feedback to concerned programme divisions and State AIDS Control Societies;

- Monitoring & ensuring data quality, timeliness and completeness of reporting from programme units data management, analysis and publications maintenance of the NACO website;
- Processing data requests and data sharing;
- Capacity building in strategic information areas;
- Preparation of programme status notes and reports and
- Providing Data for National/ International documents.

SIMS is an integrated web-based reporting, data management & decision support system, with monthly reporting from over 28,000 Reporting Units (RUs) across the country, covering programme components. SIMS user manuals, data definitions and wall charts have been developed to standardize the roll out of SIMS. A "Team of 4 IT Experts" have been deployed at NACO with the funding support from UNAIDS. The takeover process of SIMS application from M/s Vayamtech Ltd has been completed with the support of these IT personnel. The entire SIMS application is being managed and handled by them under the supervision of M&E unit at NACO. These IT Experts are now working for Maintenance, Development, Modifications in the input formats, Resolution of bugs/errors reported and Servers of SIMS Application on continuous basis. The standard reports for vital components of NACO are prepared and uploaded on SIMS application which consists of State/Month wise analysis of Core & Optional Indicators to maximise the use of programme data on regular basis.

Website: NACO website (www.naco.gov.in) provides access to information relating to policy, strategy and operational guidelines under the programme and the status of the facilities and programme interventions. Job advertisements, tender documents, updated status notes and proceedings of important events are regularly updated on the website.

Following new initiative has been taken under website maintenance:

- The official website of NACO is under development with new design which will be hosted on cloud servers;
- The official website of NACO is updated regularly;
- GIGW complains related points on the website have been resolved;
- Weekly drug-stocks related information is updated regularly;
- Contact details of all Project Director and NACO officials are available on the website;
- Tender, Procurement and Vacancy related documents are regularly updated on website;
- Link for registration for National Blood Transfusion Council (NBTC) is added on the website;
- Training manuals, publications & guidelines related to various component of programme are updated on website;
- Link for registration of Aadhaar Card for PLHIV is added on the website;
- "1131289 Pages" viewed during January, 2014 to October, 2015;
- List of Services facilities are updated on regular basis and
- The content of the website are reviewed on a monthly basis by the programme divisions.

National Integrated Biological & Behavioural Surveillance (IBBS) & HIV Sentinel Surveillance (HSS) 2014-15: National Integrated Biological & Behavioural Surveillance (IBBS) has been implemented in 31 States and UTs of the country with strategic focus to strengthen the HIV surveillance among High Risk Groups and

Bridge Population. The broad objective of the National IBBS is to generate evidence on risk behaviours among HRGs to support planning and prioritization of programme efforts at district, state and national levels.

The specific objectives of IBBS are as follow:

- To measure and estimate the change in HIV-related risk behaviours and HIV prevalence at district and state levels among key risk groups, between baseline and end-line for NACP-IV and

- To analyse and understand HIV related vulnerabilities and risk profiles among key risk groups in different regions, by linking behaviours with biological findings.

Implementation Status IBBS: Field Work for the national IBBS has been completed in all the regions for all study groups. National report on key findings of IBBS for HRGs has been published.

HIV Sentinel Surveillance (HSS) 2014-15: 14th Round of HIV Sentinel Surveillance at ANC sentinel sites was implemented from 01 Jan 2015 till 31 March 2015 except in Andhra Pradesh and Telangana where HSS was implemented during March-May 2015. It was implemented among Ante Natal Clients (ANC) in 35 States and Union Territories (UTs) of India at 572 districts. Technical brief summarizing the key findings on HIV prevalence level and trends among ANC clients has been published.

HIV/AIDS Research: Research is a vital component of strategic information management under the National AIDS Control Programme. HIV/AIDS research covers a wide diversity of areas, such as epidemiological, social, behavioural, clinical and operational research; each of these has a strong role to play in providing a direction to the programme strategies and policies. NACO focuses on ensuring translation of research outputs into programmatic action and policy formulation.

The main activities of the Research Division are:

- Setting Priority Areas for Evaluation & Operational Research in HIV/AIDS & development of research Protocols;

- Commissioning research studies under National HIV/AIDS Research Plan (NHRP);

- Coordinating, processing and approving research studies received from MD/M.Phil/ Ph.D students;

- Coordinating activities of Technical Resource Group (TRG) on Research & Development and NACO-Ethics Committee;

- Dissemination of HIV/AIDS research outcomes and

- Coordination of activities of Network of Indian Institution for HIV/AIDS Research (NIIHAR).

A structured research plan has been developed for NACP-IV, which is termed as the National HIV/ AIDS Research Plan (NHRP). It aims to overcome the barrier posed by gaps between the generation and use of research evidence to inform and influence policy makers to make evidence-based policy decisions. It is focused on time-bound studies with a multi-centric approach and evolving a strong mechanism to use the research outcomes for programmatic purposes.

Objectives of National HIV/AIDS Research Plan (NHRP):

- To identify the information gaps and research needs in the programme that require research to generate fresh evidence;

- To develop and finalise research priorities in consultation with programme divisions, partners and technical experts;

- To commission epidemiological, socio-behavioural, operational, clinical research and evaluations through identified institutes/ organisations;

- To consolidate & disseminate research outcomes for programmatic use from time to time and

- To promote scientific publication in the form of papers/articles/reports/briefs etc.

Overall 90 research studies had been identified – Phase I (36), Phase II (34) and Phase III (20). Concept notes were developed for each topic in Phase I. TORs for institutes and draft MOU to involve the institutes had also been developed and vetted by legal representative. Procedure for selection of institutes or organisations as lead research institute & participatory research institutes had been developed in consultation with donor partners. Scoring criteria was developed to evaluate EOIs as well as detailed proposals. Periodic meetings have been held with donor partners to discuss various issues from time to time and finalise various modalities of funding and implementing NHRP.

A Research Plan Screening Committee (RPSC) had been constituted under the chairpersonship of Dr. Prema Ramachandran to evaluate Expressions of Interest, detailed proposals received through RFPs and to finalise the Principal Investigator and Co-PIs through the 2-stage selection process. RPSC met thrice since March 2014 and reviewed a total of 113 EOIs received through three different Calls for Proposals. All the Phase I studies have been approved by TRG and cleared by NACO Ethics Committee and are in the process of contracting and fund release.

Key activities undertaken during 2015-16:

1. The TRG-R&D met once in 2015. A total of 4 research proposals were reviewed in this meeting and

2. NACO-Ethics Committee met once in 2015 and recommended 8 research proposals.

National Data Analysis Plan: The Data Analysis and Dissemination Unit of the NACO has initiated the National Data Analysis Plan (NDAP) under NACP-IV, to address programme needs with respect to evidence and research and to make the best use of data available under the programme.

Objectives of National Data Analysis Plan (NDAP):

- To identify the topics/thematic areas that can be studied by analysing available information (programme data);

- To structure the analysis by identifying key questions and appropriate methodology/ tools for analysis;

- To commission the analysis through a collaborative approach involving institutes, programme units & senior experts as mentors, with agreed timelines;

- To consolidate, discuss & disseminate the analytical outcomes for programmatic use from time to time and

- To promote scientific writing within the programme in the form of papers/articles/ reports/briefs etc.

The National Data Analysis Plan (NDAP) is a first-of-its-kind activity for a public health programme, whereby data has been systematically analysed to address programmatic queries raised during the end phase of the National AIDS Control Programme Phase III (NACP-III). This project was initiated in 2013 with the approval of the Secretary, Department of AIDS Control (presently National AIDS Control Organisation) and progressed with the development of concept notes, orientation and mentoring of analysts, signing of a Memorandum

of Understanding (MoU) and confidentiality document, formation of the NDAP secretariat, reviewing and finalising of protocols and analysis plan, capacity building at each stage through mentorship and workshops, development of articles and their dissemination through scientific journals and finally, a dissemination workshop.

This was a retrospective analysis, with programme data including but not limited to Computerized Management Information System (CMIS), HIV Sentinel Surveillance (HSS), National Family Health Survey (NFHS), HIV Estimation, Integrated Biological and Behavioural Assessment (IBBA), Targeted Intervention data from Form C and Form E and the database on People Living with HIV/AIDS (PLHA). Predominantly, these data have been collected during the third phase of NACP, i.e. during 2006–2012. Most of the analysis is descriptive due to the cumulative nature of the data, except in the PLHA dataset, which used survival analysis. All data sets were approved by a data sharing committee of NACO and all studies were reviewed and approved by the NACO. All researchers in this initiative entered a data confidentiality agreement with NACO. This initiative was supported by the Centers for Diseases Control and Prevention (CDC), World Health Organization, India (WHO-India), FHI-360, Population Council and John Snow, Inc. (JSI).

This initiative has been able to engage with researchers across 28 institutions across all the regions of the country, ensuring the availability of research capacities for future region-specific activities. Strength of the project is that it was able to engage senior public health experts as "mentors", who formed the source of critical thinking and helped maximise the benefits of the initiative. Their ongoing support to NACO, as well as to the individual researchers engaged in this initiative, was immeasurable. The topics of analysis of NDAP could be broadly categorised under the

following heads: (i) TI; (ii) Strategic Information Management Unit (SIMU); (iii) Basic Services Division (BSD), including Integrated Counselling and Testing Centre (ICTC) and Prevention of Parent/Mother to Child Transmission (PPTCT); (iv) Blood Safety; (v) Care, Support and Treatment (CST) and (vi) Laboratory support.

The whole project period may be divided into the preparatory phase, data standardisation and analysis plan development phase, conceptualisation, writing phase and dissemination phase. The preparatory phase included data extraction, concept note development, literature building, engagement of researchers and institutions. In the second phase, programme data was standardised to ensure quality and the analysis plan was finalised by conducting review meetings. The conceptualisation phase ensured critical thinking by researchers in order to answer some of the key questions of the programme with the available data and the writing phase entailed developing both a technical document with the programme implications as well as peer-reviewed articles. The dissemination phase ensured that the findings were shared broadly with those involved in the programme and scientific audiences, through dissemination workshops and submissions to journals for peer-reviewed publication.

During each phase, the NDAP secretariat consisting of officers from NACO ensured appropriate support for the researchers. In addition, capacity-building sessions were conducted at regular intervals to facilitate the project and also to ensure the availability of these capacities across all regions. The capacity-building sessions were oriented towards data management, conceptualisation with critical thinking, development of an analysis plan and scientific writing. The presence of mentors for the researchers throughout the project ensured scientific rigor and critical thinking.

The achievements of this exercise were threefold e.g. building the capacities of the researchers across the country; successful collaborative work at the national level and the dissemination of the findings, intended for both programme audiences and scientific audiences.

The dissemination of NDAP took place through a one-day dissemination workshop, which was attended by both programme implementers and researchers. Apart from dissemination workshop, the summary findings and peer-reviewed publications were achieved. 60% (21/32) of the topics included key findings along with the programmatic implications for NACO.

Dissemination workshop of National Data Analysis Plan in New Delhi

50% (16/32) have finalised peer-reviewed articles and submitted them to scientific journals, which are at different stages of publication. Details of these submissions are mentioned below:

● Published in the *World Journal of AIDS (5)*

● Accepted for publication supported through *WHO* (9) and *Journal of AIDS* (2)

NDAP's work has several lessons to offer, which could be adopted in future activities. Considering the potential of such programme data, periodical exercises of this nature are required at the state and regional levels. Hence it is suggested that the State AIDS Control Society (SACS) and ICMR take this forward. Instead of looking at this as a one-time activity, national programmes, including

NACO and SACS, should consider including these as "terms of reference" for the staff working on this programme.

ISO 9001 Certification of NACO

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The ISO 9000 family addresses various aspects of quality management and contains some of the ISO's best known standards. The standards provide guidance and tools for companies and organizations who want to ensure that their products and services consistently meet customer's requirements and that quality is consistently improved.

ISO 9001:2008 sets out the criteria for a quality management system and is the only standard in the family that can be certified to. ISO 9001:2008 helps ensure that customers get consistent, good quality products and services.

After year-long efforts of Technical team of National AIDS Control Organisation (NACO), various processes of NACO have been ISO certified. Now the NACO is an ISO 9001:2008 certified organization. In fact NACO is the 1st division/organisation under Department of Health & Family Welfare, Ministry of Health & Family Welfare to get the ISO 9001:2008 certification.

ISO 9001 Road Map: This achievement comes after successful completion of two rounds of external audit conducted by STQC, Dept. of Electronics and IT, Govt. of India. Prior to that when NACO decided to go for ISO certification as part of fulfilment of Result Framework Document (RFD) requirements, a core group was formed in the Department. This core group periodically met to work on the activities of ISO certification in the department. A consultant was hired to support and guide the different divisions of NACO about the various requirements of ISO 9001:2008 certification. A Senior Deputy

Director General (DDG) was made Management Representative (MR) for this activity. The MR responsibility included, ensuring that processes needed for the quality management system are established, implemented and maintained, reporting to top management on the performance of the quality management system and any need for improvement, and ensuring the promotion of awareness of customer requirements throughout the organization.

HIV Estimations

National AIDS Control Organization (NACO), Ministry of Health and Family Welfare, Government of India periodically undertakes HIV estimation process to provide the updated information on the status of HIV epidemic in India. The first HIV estimation in India was done in 1998, while the last round was done in 2012. India HIV Estimates 2015, latest round in the series, provides the current status of the HIV epidemic in the country and the States/Union Territories (UTs) on key parameters of HIV prevalence, number of people living with HIV (PLHIV), new HIV infections, AIDS-related mortality and treatment needs.

The exercise was carried out by independent experts under the guidance of the National Institute of Medical Statistics (NIMS)/Indian Council of Medical Research (ICMR). The experts were drawn from NACO, AIIMS (New Delhi), NIHFW (New Delhi), UNAIDS, WHO, CDC and other organizations. The results were finalised after a series of consultation meetings of the National Working Group (NWG) on surveillance and estimates over a period of around eight months. The results generated were approved after being critically reviewed by the National Technical Resource Group (TRG) on HIV Surveillance & Estimation comprising national and international experts. Technical report presenting the key highlights from the HIV estimations 2015 has been published and released by Hon'ble Union Minister

for Health and Family Welfare on World AIDS Day on 1st December in New Delhi.

Data Sharing Committee

NACO 'Data Sharing Guidelines' has been revised in July 2015 with the approval of competent authority. According to revised Data Sharing Guidelines, Data up to state level (including all facilities and district level under it) requires approval by SACS only; same has been informed to all SACS also.

Financial management

Financial management is an integral part and important component under NACP-IV (2012-17) programme architecture. Financial management deals with the approval and review of annual plans and budgets, fund flow mechanisms, delegation of financial powers, accounting and internal control systems and to ensure that the funds are effectively used for programme objectives. It brings together planning, budgeting, accounting, financial reporting, internal control including internal audit, external audit, procurement, disbursement of funds and physical performance of the programme with the objective of managing resources efficiently and effectively under the effective control of Director (Finance).

The financial process focuses on financial analysis for programmatic and management use and meeting reporting obligations for all stakeholders and producing accurate and timely information that forms basis for better decisions, reducing delays and bottlenecks. Fiduciary requirements are addressed by designing and implementing effective audit mechanisms at all levels. This provides reasonable assurance that:

● Operations are being conducted effectively and efficiently in accordance with NACP norms;

- Financial and operational reporting are reliable;

- Laws and regulations are being complied with and

- Assets and records are maintained.

During NACP IV, the following areas are being attended specially;

- Delegation of Financial Powers;

- Asset management;

- Audit structures;

- NGO financing and accounting;

- Advances;

- Inter-unit transfers;

- Computerized Project Finance Management System (CPFMS) and

- Human resources for Financial Management.

Key roles and responsibilities of Finance Division

- Tendering financial advice on all matters involving expenditure and forwarding proposals from programme divisions for concurrence of the Integrated Finance Division of Ministry of Health and Family Welfare;

- Monitoring and reviewing the progress of expenditure against sanctioned grant on a monthly and quarterly basis, ensuring compliance of instructions issued by the Department of Expenditure on economy/rationalization of expenditure;

- Standing Committee of Parliament on Finance/Public Accounts Committee and Audit Paras;

- Preparation of budget and related work in respect of Grant and

- Coordination and compilation of the detailed demand for Grants and the Outcome Budget of the Ministry of Finance.

Key Functions

Budgeting

- Preparation for Demand for Grants;

- Preparation of Budget Estimates/Revised Estimates in consultation with the Programme Divisions and

- Correspondence with Planning Commission for finalizing plan allocation.

Accounting functions

- Annual action plan preparations;

- Processing and conveying approval;

- Release to State Governments for onward transmissions to the corresponding SACS, NGOs, consultancy agencies, central institutions;

- Expenditure accounting of NACO and SACS;

- Monitoring of utilization certificates;

- Oversight of financial management and handholding SACS on expenditure management, target, advance settlements and

- Other recipients.

Audit Functions

- Coordination for statuary as well as internal audit of SACS;

- Submission of audit reports to ministry, donor agencies etc. and

- Facilitate audit at NACO Hq. level.

Internal financial advisory functions

- Preliminary checking of bills by DDO (NACO);

- Advice on financial matters and

- Representing negotiation meetings.

Donor Coordination's

- With extra budgetary donors like UNAIDS, BMGF, Clinton Foundation etc.;

- State Coordination Committees;

- Convening of review meetings;

- PDs review on SACS Financial Management;

- MIS reporting on financial matters;

- Functional support to CPFMS;

- Handholding of States;

- Periodic updates;

- Submission of claims for reimbursement and

- Preparation of financial management reports, interim unaudited financial report to the World Bank through Controller of Aid Accounts and Audit (CAAA)

Year wise expenditure during (2013-14, 2014-15 & 2015-16) under NACP-IV:

Year wise expenditure during NACP IV is tabulated as under:

Table 15.1: R E & expenditure incurred during NACP IV

(Rs. in crore)

2013-14		2014-15		2015-16	
R E	Expenditure	R E	Expenditure	B E	Expenditure
1500.00	1473.16	1300.00	1287.39	1397.00	964.75*

* Expenditure up to 17/11/2015

Allocation through State Structure Annual Plan of NACP-IV

The AIDS Control programme is implemented through State AIDS Control Societies in all States and Union Territories. There had been significant increase in the State plans as many programme interventions were scaled-up and stabilized. In addition to providing financial resources, NACO facilitated commodity and equipment support to the HIV service delivery centres following a central procurement method. The scaling-up of resource allocation- is given in **Fig: 15.1**.

Fig 15.1: Resource allocation through State Structure from 2013-14 to 2015-16 (Rs. in crore)
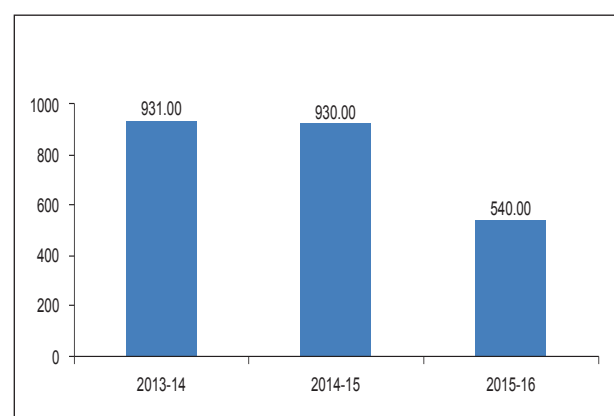
Sources of Funding for NACP-IV (2012-2017)

NACP-IV approved on 03 October 2013, was formulated after a wide range of consultations with a large number of partners including Government Departments, Development Partners, Non-Governmental Organizations, Civil Societies, representatives of People Living with HIV/AIDS, positive networks and experts in various subjects. This consultation was carried out over a period of more than six months with 35 working groups, sub-groups and national as well as regional consultative meetings comprising of more than 1,000 participants. Sources of funding for NACP-IV is at **Table: 15.2**.

Table 15.2: Sources of Funding for NACP-IV

(Rs. in crore)

Gross Budgetary Support	
General Component (GC)	8,505.20
Externally Aided Component (EAC)	
(IDA/The World Bank Rs. 1,275 crore + The Global Fund Rs. 1,826.25 crore)	3,101.25
Sub-Total 1 (I + II)	**11,606.45**
Extra Budgetary Support	
(To be implemented directly by development partners)	1,808.60
Sub-Total 2 (III)	**1,808.60**
Grand Total	**13,415.05**

The budget estimates of NACP-IV have been worked out based on the targets projected for NACP -IV and using existing costing norms suitably adjusted for the next five years. The total approved budget for NACP-IV is Rs. 13,415 crore which comprises Government Budgetary Support, Externally Aided Budgetary Support from the World Bank and the Global Fund and Extra Budgetary Support from other Development Partners.

Initiatives to Strengthen the Financial Systems

Systems have been established to release the sanctioned amount in a phased manner and to closely monitor the cash flow to peripheral units so that the States, at no point, face a shortage of resources. Monitoring is done through the online systems by having a snapshot of resource positions at any given point of time.

National AIDS Control Programme emphasizes the need for strengthening the workforce in the accounts and finance units at the Central Level for close monitoring and at the State and District levels for prompt utilization of resources. From a skeleton staff structure at various levels, it has enlarged to a group of professionals, with a good mix of both regular and contractual staff.

Better Monitoring Systems

Computerized Project Financial Management System has been developed and rolled-out to have better financial management. The system is working in all SACS for tracking expenditure management, capturing financial data and utilizing and monitoring of advances. An e-transfer facility to avoid transit delays in transfer of funds to states has been implemented in the previous years. This has been established in all the States now and the steps are being taken for onward transfer of funds from state to districts and other implementing agencies at peripheral unit level. Payment of salary to staff at district and peripheral units have been made totally through e-transfer and this has brought down the accumulation of funds at implementing agencies, thereby minimizing 'advances'. Copies of sanction orders, guidelines and instructions have been put on the NACO website and are updated periodically to ensure wider dissemination of information.

The acronym is provided at Appendix - I.

Appendix - I

ACRONYMS

AEP	:	Adolescence Education Programme
AIDS	:	Acquired Immuno-Deficiency Syndrome
ANC	:	Antenatal Clinic
ART	:	Antiretroviral Therapy
BCC	:	Behaviour Change Communication
BCSU	:	Blood Component Separation Unit
BMGF	:	Bill & Melinda Gates Foundation
BTS	:	Blood Transfusion Services
BSC	:	Blood Storage Centre
BSD	:	Basic Services Division
BSS	:	Behaviour Surveillance Survey
CBO	:	Community Based Organization
CCC	:	Community Care Centres
CD4	:	Cluster of Differentiation 4
CDC	:	Centre for Disease Control and Prevention
CI	:	Confidence Interval
CLHIV	:	Children Living with HIV
CMIS	:	Computerised Management Information System
CoE	:	Centre of Excellence
CPFMS	:	Computerised Project Financial Management System
CPGRAMS	:	Computerised Public Grievances Redress and Monitoring System
CSC	:	Care and Support Centres
CSMP	:	Condom Social Marketing Programme
CST	:	Care, Support and Treatment

CVM	:	Condom Vending Machine
DAPCU	:	District AIDS Prevention & Control Unit
DIC	:	Drop-in Centres
EID	:	Early Infant Diagnosis
EQAS	:	External Quality Assessment Scheme
FHI	:	Family Health International
FICTC	:	Facility Integrated Counseling & Testing Centre
FPA	:	Forum of Parliamentarians on HIV & AIDS
FSW	:	Female Sex Workers
GFATM	:	Global Fund for AIDS, Tuberculosis and Malaria
GIPA	:	Greater Involvement of People with HIV/AIDS
HIV	:	Human Immunodeficiency Virus
HRG	:	High Risk Groups
HSS	:	HIV Sentinel Surveillance
IBBS	:	Integrated Biological & Behavioural Surveillance
ICF	:	Intensified Case Finding (tuberculosis)
ICMR	:	Indian Council of Medical Research
ICTC	:	Integrated Counseling and Testing Centre
IDU	:	Injecting Drug User
IEC	:	Information, Education and Communication
JAT	:	Joint Appraisal Team
LAC	:	Link ART Centre
LFU	:	Lost to Follow-up
LS	:	Laboratory Services
LWS	:	Link Worker Scheme
M & E	:	Monitoring and Evaluation
MoU	:	Memorandum of Understanding

MSM	:	Men who have Sex with Men
NACO	:	National AIDS Control Organisation
NACP	:	National AIDS Control Programme
NARI	:	National AIDS Research Institute
NBTC	:	National Blood Transfusion Council
NGO	:	Non-Government Organisation
NIMS	:	National Institute of Medical Statistics
NRHM	:	National Rural Health Mission
NRL	:	National Reference Laboratory
NTSU	:	National Technical Support Unit
OI	:	Opportunistic Infections
OST	:	Opioid Substitution Therapy
PEP	:	Post-Exposure Prophylaxis
PLHIV	:	People Living with HIV
PPP	:	Public Private Partnership
PPTCT	:	Prevention of Parent to Child Transmission
QMS	:	Quality Management Systems
RI	:	Regional Institute
RNTCP	:	Revised National Tuberculosis Control Programme
RRC	:	Red Ribbon Club
RRE	:	Red Ribbon Express
RTI	:	Reproductive Tract Infections
SACS	:	State AIDS Control Society
SIMS	:	Strategic Information Management System
SIMU	:	Strategic Information Management Unit
SMO	:	Social Marketing Organisation
SRL	:	State Reference Laboratory

STI	:	Sexually Transmitted Infection
STRC	:	State Training & Resource Centre
TAC	:	Technical Advisory Committee
TB	:	Tuberculosis
TG	:	Transgender
TI	:	Targeted Interventions
TRG	:	Technical Resource Group
TSG	:	Technical Support Group
TSU	:	Technical Support Unit
UNDP	:	United Nations Development Programme
UNICEF	:	United Nations Children's Fund
USAID	:	United States Agency for International Development
UT	:	Union Territory
VBD	:	Voluntary Blood Donation